ENGAGING FARMERS: RECOGNIZING AND RESPONDING TO GENDER AND SOCIAL DIVERSITY IN FARMING SYSTEMS IN TRINIDAD

By

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To the present and future generations of farmers in Trinidad, in hopes that you may find the respect and recognition you deserve.
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ENGAGING FARMERS: RECOGNIZING AND RESPONDING TO GENDER AND SOCIAL DIVERSITY IN TRINIDAD

By

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I investigated the gender and social variables that influence agricultural strategies in two ethnically distinct communities in Trinidad. My purpose was to help the agricultural support system effectively engage with a greater percentage of the farming community. I conducted a descriptive study using mostly qualitative methods of data collection, analysis, and presentation. I also did a quantitative survey of the broader regional community to validate my initial findings and included descriptive statistics to show the incidence of a finding.

To show the relationship between social identity and agricultural activities, I developed the Objectives, Resources, Constraints, and Activities (ORCA) framework. The framework illustrates how gender and social variables affect an individual’s objectives, resources, and constraints, ultimately influencing their selection of agricultural activities. The framework facilitates the identification of influential social factors that can be used to group farmers into social recommendation domains: groups of
farmers with similar social and agricultural profiles for whom similar agricultural recommendations would be appropriate.

My results confirmed the relationship between social identity and agricultural activities. The most influential social variables were 1.) farm gender (the configuration of household responsibility for agriculture, namely female farmer, male farmer, and farm couple); 2.) ethnicity; and 3.) marital status. In combination, these three variables defined fourteen social recommendation domains (SRDs), with distinctive social and agricultural profiles. The highest priority SRDS were those that had high household vulnerability, high dependence on agriculture, and low access to agricultural services.

In conclusion, I recommend that the agricultural support system 1.) recognizes the gender and social diversity that exists in the farming community and 2.) responds with tailored programs based on the social categories identified in my study. The detailed information compiled on each SRD provides an extensive database that will facilitate the development of targeted interventions. By using this approach, the agricultural support system in Trinidad could improve their ability to effectively engage with a more diverse cross-section of the farming community.
CHAPTER 1
SITUATING THE STUDY

Introduction

Maintaining a healthy agriculture sector requires functional linkages between primary producers and the agricultural support system. An effective linkage provides two-way communication between farmers and organizations and fosters a collaborative approach to agricultural development. While most agricultural research focuses on the technical efficiency of production, extension seeks to improve productivity and rural well-being by developing human resources. Because communication between farmers and researchers is crucial, extension was developed to serve as a liaison, an advocate, and a translator between the realities of farm and research station (McDermott and Andrew, 1999). Successful extension organizations do not prescribe to or speak for farmers; rather they facilitate the expression of farmers’ own voices and engage with farmers in developing innovative solutions to constraints (Swanson, Bentz, and Sofranko, 1997). At its best, extension providers ensure that research organizations respond to the needs and priorities of farmers, and that farmers have access to the latest research and technology developments, providing the greatest possible benefit to all.

While national extension systems have been fairly successful in responding to the production needs of medium and large-scale farmers, small-scale farmers have often failed to receive appropriate assistance. The top-down technology-transfer approach to extension has not adequately addressed the complex, location-specific needs of small-scale farmers (Chambers, 1997). Most agricultural researchers seek to produce
ever-higher yields per unit of land, but in doing so often develop high input technologies that are unfeasible for limited resource farmers. Farming Systems and other participatory approaches have been important in making research and extension more responsive to the reality of limited resource farmers (Hildebrand, 1986). However, worldwide, research agendas are still largely driven by the demands of larger farmers.

For many developing nations, which have a high percentage of small farmers, this has led to the alienation of a large percentage of the farming community. The small farm is not an impersonal business operation, run solely to maximize profitability. The small farm is first and foremost a household, and as such is crucially shaped by the individuals within it. Just as agricultural possibilities are determined by the ecology of the land, so are farmers’ production decisions shaped by their social identity. Social variables are major determinants of farmers’ objectives, resources, and constraints. Therefore, the tendency for the agricultural support system to treat farms as faceless entities, without a social identity, has led to the creation of programs that are not feasible for (or beneficial to) a large percentage of farmers. The neutral prescriptions of production agriculture cannot fit the complex and diverse realities of small farm households, socially or environmentally.

The need to recognize farmers as social beings was first highlighted by the realization that gender is a determining factor of agricultural production systems. Although women are highly involved in agriculture, their production systems are often invisible to the agricultural support system. Statistics tend to conceal women’s agricultural production, as much of their activity occurs in the informal market or is directed to the household, and so never enters the cash economy (Visvanathan, Duggan,
Nisonoff, and Wiegersma, 1997). Policy-makers and extension agents have focused mainly on women’s reproductive roles and have failed to provide services that further their agricultural activities (Berger, DeLancey, and Mellencamp, 1984; Saito and Spurling, 1992; Swanson et al, 1997). In 1989, on a global basis, only 5% of all extension resources were directed to women (Food and Agriculture Organization [FAO], 1993). Recognition of this oversight led to the introduction of gender issues in agricultural development, in theory if not commonly in practice (Buvinic, 1983; Kabeer, 1994; Moser, 1989; Poats, Schmink, and Spring, 1988).

Investigation into gender issues eventually led to the recognition that gender is only one of several social variables that shape an individual’s reality. Gender cannot be considered in isolation from other variables of social identity, as gender is a social construct and is defined by cultural norms. Just as the agricultural system must consider gender issues, it must also recognize the other social factors that influence farmers’ decision-making. For agricultural organizations to fulfill their role as farmers’ support systems, they must recognize and respond to the realities that farmers face.

Trinidad¹, like much of the Caribbean, has a high percentage of small farms² and a tradition of female involvement in agriculture (Kleysen, 1996). In addition, Trinidad has a diverse ethnic population, with distinct gender norms. Therefore, the agricultural support system in Trinidad needs to recognize and respond to gender and social diversity if it is to effectively engage with a broader cross-section of the farming community.

¹ Trinidad is part of the twin island Republic of Trinidad and Tobago. Because the two islands have distinct social and agricultural histories, my study was limited to the island of Trinidad.

² Preliminary results of the 2004 Agricultural Census show that 53% of farmers had less than 5 acres, and 95% had less than 20 acres (Central Statistcial Office [CSO], 2005)
Need For the Study

The effectiveness of the agricultural support system is determined by how well it serves the ultimate client of agricultural research: the farmer. To succeed, the agricultural support system must understand 1) who their clients are, 2) what type of assistance they need, and 3) how best to deliver that assistance. Their clientele is a diverse body, consisting of large and small, male and female farmers; farmers of different ethnicities, ages, and socioeconomic levels. Their clientele face different challenges and engage in distinct activities. Differences in household composition create distinct patterns of resources and constraints. If the agricultural support system fails to recognize and respond to gender and social diversity, it risks losses in efficiency, sustainability, and equity.

Historically, agricultural development has frequently ignored the needs and priorities of small-scale and female farmers (FAO, 1997) and discounted socio-cultural differences as unimportant. Most extension systems direct the majority of their resources toward large-scale farmers, despite the fact that small-scale farmers (of which women constitute a disproportionate share) constitute 75–80 % of the world’s farmers (FAO, 1993). The very structure of development has exacerbated gender inequalities, and decreased women’s abilities to improve their own lives (Rivera and Corning, 1990).

Typically, extension has directed their agricultural programs to the farm “household,” which in practice has usually meant to a resident adult male. In considering the household as a cooperative unit, extension has ignored the vast differences that exist between members of the household. Women and men may plant different crops, or have unequal access to inputs such as land and credit. Women’s domestic responsibilities often prevent them from attending training sessions during the day. If they do attend meetings,
they may hesitate to voice their concerns in a mixed-sex group (Saito, 1991). All these factors create different needs and priorities for female and male farmers (Dwyer and Bruce, 1988; Saito and Spurling, 1992). Likewise, different cultural groups have distinct social patterns that affect farmers’ access to resources and production decisions. All these distinctions must be recognized and accounted for, if the agricultural support system is to provide more equitable and effective support to the farming community.

The need to specifically recognize and engage with female farmers is becoming more important as the numbers of female-headed households are increasing worldwide, due to migration, war, and a number of other factors. Female-headed households in lesser-developed countries now comprise one-quarter to one-half of total households (Swanson et al, 1997). With more women assuming sole responsibility for the household’s well-being, it is increasingly imperative that they are recognized and supported in their dual role, in both production and reproduction activities. Female farmers, whether wives, laborers, or independent heads of households, are vital to the agricultural development of a nation. Their efforts contribute not only to the national economy and overall productivity, but have been shown to be a crucial indicator of family well-being (Carloni, 1983; FAO, 1993) as women are more likely than men to invest in household nutrition and education (Pinstrup-Andersen, Panya-Lorch, and Rosegrant, 1999; International Food Policy Research Institute [IFPRI], 1999).

Statement of the Problem

Trinidad has a diverse population, composed of two major ethnic groups with very different norms and gender relations. It has three main religious groups, further divided into numerous sects. It has a young cosmopolitan “center” with relative affluence, high standards of education, and a fast developing industrial economy. At the same time,
beyond the highway, is an older rural periphery that remains working class, with limited educational opportunities and a marginalized and contracting agricultural sector.

Amid all of this social diversity is an agricultural support system that is itself composed of a variety of institutions, from small community-based organizations to large national ministries, as well as several international organizations. It is vital for these organizations to recognize farmers’ social diversity if they are to respond effectively to farmers’ needs. Currently, most research and extension programs provide information on specific crops, without reference to farm household differences. “The small farm system in the Caribbean is still regarded as a fairly undifferentiated entity and interventions are defined from this mindset…. (However) One extension strategy…cannot meet the needs of a diverse farming system” (Ganpat and Bekele, 2001).

Regional efforts to revise the extension system in the late 1980s identified the needs of female farmers but failed to implement the recommended changes (Schmink and Goddard, 1985; Schmink, 1989). Since then, regional research on women in agriculture has increased significantly, and courses on women in agriculture are offered at the University of the West Indies in Trinidad. In 1993, at the request of the Extension Division, the Inter-American Institute for Cooperation on Agriculture (IICA) gathered baseline data on five groups of small-scale female producers in Trinidad. However, in 1995, an FAO study found that women were not mentioned in Trinidad’s agricultural policy and only 9% of female farmers reported using Extension’s services (Dass, 1995).

Lack of information on target groups hinders the design and implementation of effective agricultural development programs. Organizations need to understand how gender and social diversity affects production strategies at the household level, in order to
respond appropriately. Ganpat and Bekele’s 2001 study examined differences in overall resource level and concluded that there were at least three distinct groups of small farmers in Trinidad, each requiring targeted development interventions, especially the lowest resource group. My study aims to extend these earlier efforts by trying to link the differences in resources, activities, and organizational access to gender and social variables.

**Purpose and Objectives**

My study aims to assist the agricultural support system to more effectively engage with a greater percentage of the farming population, through provision of a practical framework that will assist development practitioners to recognize how gender and social diversity impacts farmers and respond appropriately to their distinct farming systems.

The specific objectives of my study are to:

1. Document the diverse social and gender groups that are involved in agriculture in two ethnically distinct communities in Trinidad.
2. Identify the social variables that most influence agricultural decision-making, and show how these factors impact the ultimate selection of an agricultural strategy.
3. Assess the current access to and satisfaction with the agricultural support system by diverse groups of farmers in these two communities.
4. Identify priority farmer groups for enhanced engagement with the agricultural support system.

**Operational Definitions**

- Agricultural support system – The various institutions that provide agricultural services, including research, extension, and policy organizations.
- Cash-income - Income received directly in the form of cash, as opposed to other outputs of production activities such as food.
- Cedros – The case study area in the southwestern tip of Trinidad. Primarily the villages of Granville, Coromandel, and Pt. Coco, with lesser reference to Chatham.
This area is known informally as “Cedros” and comprises the southwestern tip of county St. Patrick West.

- **Extension** – When written with a lower-case “e,” extension refers, in general, to the outreach activities of agricultural development organizations. When written with a capital “E,” Extension refers specifically to the Extension division of the Ministry of Agriculture.

- **Farm couple** - Household in which both partners, female and male, share responsibility for agricultural production activities.

- **Farm gender** - Analytical category that describes the configuration of responsibility for agricultural activities within a household, independent of marital status. There are three categories: female farmer, male farmer, and farm couple.

- **Farming system** - The farm household and the various livelihood activities pursued, in the context of the social and agro-ecological environment.

- **Female farmer** – Household in which the female is solely responsible for agricultural production activities.

- **Gender** - The socially determined, and culturally specific, differences between women and men, as opposed to the biologically determined differences.

- **Male farmer** – Household in which the male is solely responsible for agricultural production activities.

- **MA** – Man engaged in agricultural production; used as a pseudonym for any man who participated in the study.

- **ORCA** – Farmers’ agricultural objectives, resources, constraints, and activities.

- **Production activities** – Activities that directly contribute to household income, including agricultural production as well as wage employment.

- **Recognized farmers** – Farmers that have established linkages to external agricultural organizations, so that they are usually the first recipient of any organizational resource or communication.

- **Recommendation domain** - “A group of roughly homogeneous farmers with similar circumstances for whom we can make more or less the same recommendation” (Byerlee et al, as cited in Norman, 1986. “The underlying assumption is that the farmers of households within the same recommendation domains will have similar responses to proposed technologies”(Shaner et al, as cited in Norman, 1986).

- **Reproduction activities** – Activities that directly contribute to the maintenance of the human resource base, including caring for the family, children, and household.
• Social recommendation domain (SRD) – Group of farmers defined by similar social factors that will tend to select similar agricultural strategies. Because they will have similar responses to proposed changes, we can make more or less the same recommendation for farmers within a social recommendation domain.

• Toco – The study area in the northeastern tip of Trinidad. Primarily the villages of Grande Riviere, Matelot, Montevideo, and Sans Souci, with lesser reference to L’Anse Noire, Toco, and Cumana. This area is known informally as “Toco” and comprises the northeastern tip of county St. David.

• WA – Woman engaged in agricultural production; used as a pseudonym for any woman who participated in the study.

**Limitations of the Study**

Like all qualitative research, this study was mainly limited by the skills of the researcher. Because culture and gender are integral parts of my study, I had to analyze these factors, while recognizing that my cultural background influenced my interpretations. I tried to minimize misinterpretation in several ways: 1) I referred to local studies of ethnicity and gender to validate my observations. 2) Several Trinidadians reviewed my findings, to ensure they were congruent with their perceptions. 3) I included quotes and field observations along with my analyses, to allow readers to make their own interpretations.

The data were limited to what participants chose to reveal to me. Their responses were based on how they perceived me and the relationship between us. Because I was researching potentially sensitive topics, the stories I was told were highly influenced by the amount and duration of our interaction and the level of trust they felt in me.

My understanding of religion and gender norms among Indo-Trinidadians was limited by the lack of any Muslim farmers among my primary contact farmers. I only encountered a Muslim community towards the end of my study, during the survey portion of my research, when interactions were relatively brief. Perhaps for this reason, I was
never introduced to any Muslim women in agriculture, and thus have an incomplete picture of this community.

Finally, as a descriptive study of two communities, the findings have limited generalization to other regions in Trinidad. My study areas were selected because of their geographical and cultural isolation and may have limited resemblance to other, more accessible regions in Trinidad.

**Significance of the Study**

My study is significant on several different levels. On a theoretical level, my study illustrates the importance of recognizing gender and social diversity as influential variables in farmers’ selection of agricultural activities. By sensitizing practitioners to the influence of social factors, their ability to effectively engage with farmers is improved.

On a practical level, the Objectives, Resources, Constraints, and Activities (ORCA) framework introduced in Chapter 4 provides an accessible methodology to identify distinct target groups (social recommendation domains), select priority groups, and develop an action plan. This methodology has significance not only in other regions of Trinidad but elsewhere in the world.

The findings of my study are significant as a reference document for agricultural organizations in Trinidad that wish to work in these two regions. My study presents a clear rationale for selection of priority target groups and a detailed description of each group that will facilitate the development of an appropriate plan for engagement.

**Summary**

My study illuminates the importance of gender and social identity as determinants of farming systems in Trinidad. Given Trinidad’s social diversity, it is crucial for the agricultural support system to recognize and respond to these differences, if they wish to
engage more effectively with a broader profile of the farming community. Qualitative and quantitative data from two ethnically distinct regions are analyzed using the ORCA framework, in order to define social target groups, known as social recommendation domains. These are then categorized by level of priority for engagement by the agricultural support system. A proposed action plan is presented in Chapter 8.
CHAPTER 2
LITERATURE REVIEW

This chapter describes the theoretical perspectives that influenced my approach to this study, namely:

- Farming systems research and extension
- Gender and development
- Extension models
- Agricultural context in Trinidad

My perspectives on the small farming community were most affected by the farming systems approach to development. The need to recognize gender and social diversity as a key component of the farming system was a product of my exposure to the gender and development field. Consideration of the best way to engage with a diverse farming community led me through an examination of various extension models. All of these theoretical approaches were contextualized by my investigation into Trinidad’s agriculture sector.

Farming Systems Research and Extension

Farming systems research and extension (FSRE) sprang from the realization that small farmers in developing nations were not benefiting from the top-down, transfer of technology approach to extension. The farming systems paradigm questioned the ability of a distant research institution to understand the complex realities of small-scale farmers and to generate appropriate, adoptable technology under the ideal and highly controlled conditions.

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3 Trinidad is part of the twin island Republic of Trinidad and Tobago. Because the two islands have distinct social and agricultural histories, this study was limited to the island of Trinidad.
conditions of experiment stations (Hildebrand, 1986). As Whyte wrote in 1986, “There is reason to be concerned that the very style and organization of most current agricultural research and development will not adequately take account of the circumstances of small farmers and improve their productivity.” This continues to be a matter of concern today, as the absolute number of small-scale farmers increases, and poverty remains a persistent feature of rural life (International Fund for Agricultural Development [IFAD], 2001).

Small-scale family farms operate under conditions that are fundamentally different from large commercial farms, which can mimic the conditions of experiment stations. Small farmers in lesser-developed countries (LDCs) do not benefit from new technologies that require high levels of inputs or access to modern infrastructure. Their constraints are complex and require more than agronomic “solutions.” Research and extension must take into account the whole farming system, including the socioeconomic environment, in developing appropriate responses. Therefore, farming systems demands the inclusion of small-scale farmers as necessary partners in the process of planning, implementing, and evaluating technology.

The farming systems approach is innovative in a number of ways. First, it considers the farm as a system, looking beyond purely production constraints and attempting to understand the farm household’s activities as a response to the total environment, socioeconomic as well as agro-ecological. It recognizes that the farm is also a household and exists within a larger web of interrelationships. With its emphasis on analyzing internal and external factors that shape the system, FSRE lends itself to the analysis and integration of gender issues (Poats, Schmink, and Spring, 1988). FSRE incorporates
gender analysis methodologies in order to understand and account for the division of activities, resources, and constraints within the household (Rivera and Schram, 1987).

Second, it respects the small farmer as a knowledgeable decision-maker, who optimizes well-being in a complex and risky environment. FSRE understands that adoption decisions are a result of many factors beyond yield maximization (Hildebrand, 1986). Therefore, it promotes the assessment and adaptation of technologies within the existing system, rather than a pre-designed “package” that is supposed to be broadly adaptable (Hildebrand and Russell, 1996).

Third, FSRE promotes diagnosis of problems and design of on-farm research in collaboration with farmers. By linking farmers directly with multi-disciplinary teams of researchers and extension practitioners, FSRE facilitates identification of constraints and development of appropriate technology (Hildebrand, 1986).

Finally, FSRE identifies “recommendation domains,” groups of farmers who have developed similar cropping systems and livelihood strategies in response to shared socio-economic and agro-ecological constraints. This allows development of technologies appropriate to a particular domain (Hildebrand, 1986).

Farming systems models continue to evolve as experience leads to greater understanding of the systems approach. Farmer First, Beyond Farmer First, Participatory Technology Development (PTD), Participatory Action Research (PAR), and On-Farm Client Oriented Research (OFCOR) all share the basic farming systems understanding of small-scale farmers as rational decision-makers functioning in complex local systems (Chambers, 1997; Colverson, 1996; Havekort, van der Kamp, and Water-Bayers, 1991).
These new approaches use various methods to increase farmer involvement in the generation, testing, evaluation, and dissemination of agricultural innovations.

With experience, FSRE practitioners have come to realize that increased farmer participation does not necessarily equate with equitable gender inclusion. Because participatory models focus on dialogue and action with the “community,” there has been an implicit assumption that these methods are automatically gender sensitive. However, the equation of “invited” participation with actual inclusion is misleading. This “myth of community” (Guijt and Shah, 1999) is naïve in its belief that physical proximity corresponds with shared interests. Any group of people, whether at the household, village, or global level, is differentiated by their resources, objectives, and real power to determine their own lives. Participatory approaches are therefore explicit in their attention to this, and consciously identify the “silent” community members and act to increase their “voice.” A wide variety of tools have been created to facilitate the inclusion of women and other marginalized members, both in the communication that occurs within a community and in its representation to the outside world (Engelhardt, Oswald, and Bacal, 1995).

This research was fundamentally shaped by the farming systems paradigm both in its theoretical framework and its methodology. Theoretically, this research recognizes small-scale farmers as important agricultural producers and attempts to understand their livelihood decisions by situating them in their social, economic, and political environment. It recognizes the complex constraints and strategies of small-scale farmers, and attempts to understand the impact of outside interventions as they reverberate through this system. Methodologically, it employs listening as a primary tool for
understanding farmers’ situations, recognizing the need to hear why farmers act as they do, instead of telling them what they should be doing. Instead of relying primarily on formal surveys to investigate preconceived notions, the researcher uses informal, unstructured interviewing to uncover farmers’ perspectives. Qualitative data are used to construct visual models of the identified systems to highlight the main components and interactions.

**Gender and Development**

**Evolution of Development Paradigms**

For many years, agricultural research and development operated under the assumption that its policies and programs were gender-neutral. However, experience showed that the impacts of development were not only different for men and women, but were often detrimental for women. In 1970, Boserup’s pivotal book Woman’s Role in Economic Development first drew attention to the fact women, as well as men, are highly involved in agricultural production. Her criticism of the negative effects of development on women helped to spark the United Nation’s Decade for Women (Tinker, 1990). Research began to uncover the importance of women in agriculture, and, across the globe, it was documented that women were active in both the field and the household (Dixon-Mueller and Anker, 1988). It was repeatedly demonstrated that women were important determinants of family well-being, as women were more likely than men to spend their cash-income on food and healthcare (Visvanathan et al., 1997; Pinstrup-Andersen et al., 1999; IFPRI, 1999).

Yet women were consistently overlooked by development programs, while men were targeted for training, credit, and mechanization. Despite the importance of women in agriculture, development programs often relegated women to the domestic sphere and
focused exclusively on men as agricultural producers (Boserup, 1970). Men were the
favored recipients of education and technical assistance, and benefited from laws that
granted them control over vital resources, most importantly land. As a result, women
often lost control over production resources and employment as increasing mechanization
replaced their labor (FAO, 1993). The net effect was that women’s burden often
increased while men moved into the cash economy (Boserup, 1970).

Recognition of the unequal impacts of gender-blind development led to the creation
of a “women in development” (WID) approach (Kabeer, 1994). Women became targeted
recipients of development aid in the name of welfare, efficiency, equity, and
empowerment respectively (Buvinic, 1983; Moser, 1989). However, over time it became
apparent that special women’s projects, directed towards traditional “female” activities,
had only limited impact on the long-term well-being of women (Poats et al., 1988). In
addition, these projects tended to be marginalized within the overall development
scheme, usually being understaffed and under funded.

The subsequent “gender and development” (GAD) approach attempted to uncover
the deeper societal and institutional disparities that created inequity between genders
(Young, 1992). GAD recognized that women and men exist in interrelationships of
competition and collaboration; therefore equitable development requires the participation
and commitment of both genders. Proponents distinguished between “practical” gender
needs, that is the needs of women within their existing roles, and “strategic” gender needs
that seek to increase women’s ability to expand into new roles and define their own lives
(Molyneux, 1985; Moser, 1993).
The detrimental effect of development on women has often been interpreted as a failure to include women in the development process. Thus, the remedy would appear to be greater integration of women into development (Boserup, 1970). However, many women have expressed the belief that inequality is built into the very structure of traditional development with its exclusive focus on economic growth. They argue that women’s contributions will never be equally valued until women’s priorities are understood and included as objectives of development (Kabeer, 1994).

**Gender Issues in Agriculture**

The significant contribution of women in agriculture has now been well documented (Saito and Spurling, 1992; Berger et al., 1984). Current research estimates that women account for 40 percent of the agricultural labor force in Latin America and 60-80 percent in Asia and Africa (FAO, 1993). However, despite equal involvement in agriculture, women farmers typically have less access to agricultural resources than men, decreasing their ability to be efficient producers. Land is the single most important resource for agricultural production, but access is often limited or tenuous for women, due to both legal and cultural rules that favor men (Saito, 1991). This creates difficulty for women in securing credit or loans, since they lack collateral. Low educational levels, especially illiteracy, also limit women in LDCs, as they typically receive much less schooling than men. Compounding all these constraints are the reproduction duties of women, which limit both their mobility and time to engage in agricultural activities.

With increasing male migration in search of wage work, more women are taking full responsibility for the household and agricultural production. Female-headed households now comprise one-quarter to one-half of total households in lesser-developed countries (Swanson et al., 1997). A 1993 survey revealed especially high rates in the
Caribbean, with Jamaica topping the list with 57% of households headed by women (Kleysen and Campillo, 1996). Constrained by labor and cash, female-headed households figure disproportionately among the poorest households. Thus, the need to effectively address women’s needs has never been greater.

**Gender in Caribbean agriculture**

Both men and women have been involved in agriculture since plantation cultivation first began in the Caribbean. Under slavery, there was little gender division of labor, since there was no economic advantage in under-utilizing productive labor. Women did the same tasks as men, a fact now forgotten in the justification for lower female wages due to their “lower productivity.” Many scholars believe that the presence or absence of a gender division of labor in the Caribbean is far more related to economic than cultural factors (Reddock and Huggins, 1988).

Although Caribbean women have historically been involved in all agricultural activities, there is presently some gender division of labor typical of the region. Men are more apt to plow and prepare land, spray crops, and manage large livestock, while women tend to do the majority of planting, harvesting, and post-harvest activities (Kleysen, 1996). Agricultural labor tends to be more flexible on small-scale farms, where economic necessity may obscure traditional gender roles. However, while women may enter the traditionally “male” domains, men have yet to respond by entering the domestic sphere (Kleysen, 1996). Regardless of their level of involvement in agriculture, women remain responsible for the well-being of the household. Shouldering sole responsibility for reproduction activities, female farmers face constant trade-offs in their time use.

Given these multiple responsibilities, it is not surprising that female farmers tend to accumulate lower levels of capital resources, in turn further limiting their agricultural
productivity. In part this is due to the limited economic opportunities for women, so that the majority of female cash-income is derived from agriculture. In contrast, men have significantly higher access to off-farm employment than women. If small-scale female farmers do work off-farm, it is most commonly as an agricultural laborer, at wage rates lower than men’s (Henshall, 1981). Often, women are the primary farm and household manager, while men work off-farm, returning to farming as a secondary occupation (Kleysen, 1996). Therefore, women are more dependent than men on agriculture for their cash-income, as demonstrated by Henshall’s survey of St. Lucia, where 70% of female farmers reported local sales of farm produce as their primary cash-income versus 45% of male farmers (Henshall, 1981).

Limited by cash and labor constraints, female farmers have strategically selected activities that fit into their farming capabilities. Female farmers are the least likely to employ farm laborers, due both to financial constraints and society’s perception that working for a woman is low status (Henshall, 1981). Lacking recognition and support from policymakers and extension, women use groups and family support to fulfill their reproduction duties and maximize their production activities. This situation is even more demanding for the third to a half of women who are heads of households. “The overall picture of female-operated farms in the West Indies is that of marginality in terms of capital, land, and labor resources” (Henshall, 1981, p 7).
Gender in Trinidadian agriculture

Preliminary results of the 2004 agricultural census estimated 2,627 female and 15,465 male “agricultural holders” in Trinidad. Officially, women represented 15% of the recognized farmers (CSO, 2005). However, under-representation of women farmers in official statistics is common knowledge (Beneria, 1982). Identification of the “farmer” as the person who “owns and controls” the resource base causes many active female farmers to be overlooked, as only a minority of women are landholders (IICA, 1993). Persistent bias leads to the perception of men as the “farmer,” even when women are responsible for agricultural decision-making. Because women are often involved in informal markets or subsistence production, their production may be unrecognized (Dixon, 1985). The extent of such oversights is evident in a 1996 IICA study that re-estimated the population of female farmers in the Caribbean. In Jamaica, while only 60,500 women were officially recorded as active in agriculture, the official re-estimation was 167,000 (Kleysen and Campillo, 1996).

Although Trinidad was not included in IICA’s study, it bears note that the recorded population of 2,627 women farmers may represent less than half of the active female farmers. Many Trinidadian women maintain “backyard” gardens for household consumption and commercial sales. A 1980 survey by Harry found that women in central and south Trinidad (predominantly Indo-Trinidadian) were very involved in the cultivation of vegetables for domestic consumption, tobacco, and rice, and were often the primary decision-maker on dairy farms. Notably, 66.2 percent of all farms had a “home

As defined in the Preliminary Report of the 2004 Agricultural Census, an “agricultural holding is an economic unit of agricultural production producing primarily for sale…without regard to title, legal form, size or location.” Thus non-commercial production was not counted, but squatters were.

Statistics presented here refer specifically to the island of Trinidad.
“garden” for which women were responsible (Harry, 1980). However, the great majority of this production is invisible to the outside, as it occurs within the “house-yard.” Although such production is vital to household maintenance, it is usually discounted as relatively unimportant in comparison to cash crops (IICA, 1993). As a result, the agricultural support system remains unaware of the true magnitude of female involvement in agriculture and the distribution of resources is skewed away from women.

Trying to identify small-scale female farmers is confounded by women’s own perception of their work, as many perceive their “backyard” production as part of their “domestic” duties and do not self-identify as a farmer. Thus “while 50% of women reported gardening as their major source of cash-income, only 30% reported gardening as their major activity outside of the home” (IICA, 1993 p. 22). As Henshall reported in her extensive field studies, “women appear to view the farm as an extension of their household responsibilities” and “defined even planting and harvesting as homemaking rather than agricultural work” (Henshall, 1981). This is evident across ethnicities, although for different reasons. In patriarchal East Indian families, women’s primary responsibility is to the household, so “supplemental” agricultural activities are seen simply as part of their duties as wives and mothers. In Afro-Caribbean families, mothers are held in high regard, whereas agricultural labor is looked down upon; therefore a woman gains most status in her role as provider for the household. “Consequently, social pressures on both ethnic groups will tend to encourage under-recording of women’s role in agriculture” (Momsen, 1984).

The marginalization of women in agriculture is even more problematic given the persistently high percentage of female-headed households in Trinidad. In 1987, women
headed 37% of households in Trinidad, with 67% of those outside of the labor force, resulting in 39% of female-headed households below the poverty line (IICA, 1993). In 2000, the situation was much the same, with 38% of households being female-headed (CSO, 2001). Lacking both internal support from a partner and external support from agricultural institutions, these households are highly vulnerable.

**Gender Issues in Extension**

Top-down extension can be a constraint to equitable distribution of resources within a diverse farming population (Berger et al., 1984; Saito and Spurling, 1992). Traditionally, agricultural development services have been directed to the “household,” which was viewed as a cooperative unit, represented by a male head. However, this approach ignores the vast differences that exist between members of the household (Dwyer and Bruce, 1988). In actuality, the gender division of rights and responsibilities within households varies greatly, depending on socio-cultural and economic factors such as religion, culture, household composition, and class.

By not recognizing the different realities of male and female farmers, development practitioners have tended to respond to all farmers with just one approach, which is only appropriate for a small percentage of farmers (typically higher resource male farmers). Therefore, only a certain segment of the farming population has benefited from the resources of the agricultural support system. In Honduras, Colverson (1996) found that training did not cover the issues of highest priority to women farmers. Programs directed at women usually focus on domestic activities (Berger et al., 1984; Spring, 1986). However, for most women, reproduction activities were only a portion of their total responsibilities. A 1993 study in Central America revealed that of the 14-18 hours
worked daily by rural women, only half were in domestic activities, while the other half were in agricultural activities (Kleysen and Campillo, 1996).

**Gender and outreach**

In order to reach both male and female farmers, extension providers must take gender dynamics into account when selecting an outreach method. Group trainings are usually the most accessible venue for women; however time, location, and topic are all crucial considerations. Women’s multiple responsibilities often leave little time for travel to distant meetings. The combination of production and reproduction activities leads to long hours for female farmers, making them “probably the busiest people in the world,” (FAO, 1993, p 37). Cultural traditions may also limit female attendance and participation (Bastidas, 1999). If women do attend meetings, they may be hesitant to voice their concerns in a mixed sex group (Colverson, 1996). In the words of one Ecuadorian woman, “Even if I go to the meetings, it’s only to hear what the men have to say. Men are the ones who talk and discuss. They know what to say and how to say it” (Bastidas, 1999, p. 16). In approaching women, it is advisable to contact existing groups that have already established cohesion and leadership, and interest them in extension activities. However, it is important to recognize those who may be excluded from groups, such as the poorest women, and approach them individually (Swanson et al., 1997).

Individual meetings with extension generally lead to the least contact with small-scale female farmers, as they are often invisible or considered less desirable clients. Extension services may be preferentially offered to higher resource farmers with higher levels of resources, so that female farmers with little or no land or credit may be bypassed as unlikely to “succeed” (FAO, 1993). The now discredited training and visit (T & V) system promoted by the World Bank often excluded women as “contact” farmers due to
selection criteria such as literacy, land title, and size of land-holding (Swanson et al., 1997). Extension agents often do not receive appropriate training on gender sensitivity, and in many cases are expected to work only with their same sex clientele, women in home economics, and men in agriculture (Colverson, 1996).

Although mass communication channels such as radio and TV appear to be gender neutral, the actual audience is determined by time of presentation, literacy, and access to media (FAO, 1993). Each of these factors tends to restrict female access to agricultural resources. In Latin America and the Caribbean in 1993, the percentage of women receiving technical assistance from extension was less than 10%, and in most countries less than 2% (Kleysen and Campillo, 1996). Extension organizations must explicitly recognize and respond to gender issues if they wish to be relevant and accessible to both male and female farmers.

**Gender and extension in Trinidad**

In 1991, the Ministry of Agriculture, Land and Marine Resources (MALMR), recognizing that few women were attending Extension training courses, requested IICA’s assistance in identifying the production activities, constraints, and potentials of small-scale female farmers. A baseline survey of “capacities and vulnerabilities” was conducted of five women’s groups. The focus of the survey was on women’s subsistence activities, defined as the “domestic area of agricultural production, which like housework, fails to be recognized” (IICA, 1993). Most of the women reported subsistence, non-commercial agriculture as part of their livelihood strategy, supplemented by other activities (food processing, handicrafts, etc). Only 13% of the women used government extension for agricultural information, while 6% received assistance from the Caribbean
Network for Integrated Rural Development (CNIRD), and 71% had no awareness of either source (IICA, 1993).

Similarly, a 1990 research study showed that whereas 15% of female farmers in Trinidad accessed agricultural information through their husbands, only 0.4% used Extension (Rajak, 1990). The report concluded that Extension needed 1) clear policy directives regarding the importance of subsistence farmers and 2) targeted assistance to female farmers. As recently as 1995, neither women nor small-scale farmers were mentioned in Trinidad’s agricultural policy (Dass, 1995). This lack of a clear mandate at the policy level can translate to exclusion of small-scale farmers at the operational level (IICA, 1993). IICA reported that discussions with Extension revealed ambiguity over the need to provide services to “backyard” farmers.

In a further FAO study in 1995, 43% of female farmers in Trinidad reported no interaction with Extension (Dass, 1995). Most women (40%) relied on their husbands for agricultural information, while 25% sought advice from the farm shop, 12% from friends and only 9% used Extension as a primary source. The study highlighted the gap between female farmers’ realities and Extension’s perception of them as clientele. Women were not identified as a target audience in agricultural policy, nor were there gender guidelines for implementation (Dass, 1995). Most women indicated that they were aware of the training, but the training was either not relevant or not accessible to them. Women identified their greatest obstacles to participation as lack of incentives and lack of time and suitable location. Extension perceived their difficulties in reaching women as primarily a lack of appropriate technology and demonstration materials, combined with a generally poor understanding of women’s problem and needs (Dass, 1995).
**Gender Analysis**

In order to move beyond a general awareness of gender issues to a practical and appropriate response, development practitioners must have a thorough understanding of the ramifications of gender in a specific locale, institution and/or cultural group. The process of identifying distinctions by gender is called a gender analysis, and may incorporate numerous methods. For development practitioners, a gender-equitable response requires consideration of gender on two levels: 1) within the target group and 2) within the institutional setting.

**Gender analysis of farming systems**

Gender analysis can be used to learn about men’s and women’s objectives, resources, constraints, and activities within a specific household and/or farming system. This is crucial for understanding the intra-household dynamics (Saito and Spurling, 1992). Resource analysis is used to determine, by gender, who has access to and control of critical resources, such as land, capital, and knowledge. Constraints analysis is used to explore how socioeconomic and institutional factors are differentially experienced by men and women. Activity analysis identifies all tasks, production and reproduction, by gender, using methods such as seasonal calendars to determine the critical periods of labor shortage, and who will be affected by changes in labor demands. Such analyses help in understanding household dynamics and predicting the differential responses of male and female farmers to changes in agricultural policies, technologies, and extension (Feldstein and Poats, 1989).

**Gender analysis of extension systems**

In addition to uncovering differences in farming systems, gender analysis can be used to evaluate institutional biases and oversights. To improve their services to a diverse
clientele, the agricultural support system must evaluate its own structure and services. Relevant considerations include the level of gender equity in current laws and government policies, the level of female participation in annual extension program planning, distribution of extension staff by gender, output of extension media targeted for women, and contacts between extension agents and female farmers (Saito and Spurling, 1992). Common organizational constraints identified by FAO include 1) inadequate information on the activities of female farmers 2) lack of incentives to focus on women’s activities and 3) dismissive attitudes towards female farmers (FAO, 1993).

By combining the findings of the farm/household and institutional gender analysis, extension policies and implementation strategies can be revised to match the reality of male and female farmers’ needs and priorities. To address existing oversights, extension requires action on two fronts: 1) at the policy level, there must be a clear mandate to target farmers across the social and gender spectrum and 2) at the field level, officers must have training and guidelines in how to implement these mandates (FAO, 1993).

**Extension Models**

In assessing the ability of extension organizations to effectively serve a diverse farming community, it is helpful to analyze different extension models and determine potential weaknesses and possible areas of improvement. Formal extension systems have been organized in a variety of ways, depending on their objectives and their perceptions of the roles of farmer, researcher, and extension.

**Ministry-Based Extension**

In Trinidad, as in much of the world, extension is a part of the Ministry of Agriculture. Ministry-based extension is the predominant form of extension in the world, providing more than 90 percent of all extension services in 1993 (FAO, 1993). Organized
as a service of the national government, these extension systems aim to improve agricultural productivity for the benefit of both producers and consumers (Nagel, 1997). Ideally, such public extension is developed to serve the needs of all types of farmers in a country (FAO, 1993).

However, in most countries, extension and research exist as separate divisions under the Ministry of Agriculture and often have weak linkages with each other. The information that gets transferred is often outdated or not pertinent to the farmer’s situation (Nagel, 1997). Therefore, extension often has to rely on its own initiative and resources in addressing the needs of the farmer. Frontline officers are often responsible for a large area, with only limited resources at their disposal. In addition, they may have regulatory duties, which can diminish farmer trust and limit their time for educational activities. Agents often enter the field with only a few years of technical training and little or no understanding of participatory techniques. Researchers typically have limited understanding of farmers’ problems and therefore do not prioritize those issues for research. Large-scale commercial farmers often have more interaction and influence with government research bodies, but small-scale farmers are virtually unseen.

There are several sources of potential bias in this model. Extension providers tend to focus on “successful” farmers, especially those producing export crops, which may obscure the perspectives and needs of small scale and female farmers. Researchers tend to evaluate new crops and methodologies in laboratories and field stations, with minimal reference to farmers’ selection criteria. By failing to consider the objectives or constraints of diverse farmers, research often generates “improvements” that are only feasible for a small segment of the farming community, usually the higher resource farmers. To revise
such a system with a gender perspective requires top-level commitment and a comprehensive evaluation of policies. Training in gender sensitivity and gender analysis would be necessary for all levels of staff in order to successfully address the pervasive biases. Data would need to be disaggregated, and probably new data would need to be gathered in order to evaluate program efficacy (Rivera and Schram, 1987).

**Commodity-Based Extension**

Commodity-based extension is based on the provision of services to farmers who cultivate a particular crop, and may be offered by governments or private firms. In the case of government commodity boards, the crop is usually a high-value export crop and so is favored for research and subsidies. A private firm is obviously profit oriented, and so promotes the optimal production of the crop in order to maximize its revenue (Nagel, 1997). In Trinidad, the Cocoa and Coffee Industry Board provides commodity-based extension to cocoa and coffee growers as a service of the government. Caroni, Ltd., although recently defunct, provided outreach to sugarcane farmers in Trinidad for many years.

Services are provided to growers who participate in the program. Growers benefit from research, subsidized inputs, and guaranteed markets. Because the organization seeks control of the process, their extension approach is prescriptive, with farmers directed to use certain methods and inputs. For large farmers, this may ease the burden of management. However, small farmers are often forced to make sub-optimal decisions from a production standpoint, in order to balance their constraints and minimize risks (Nagel, 1997).

Commodity oriented systems are focused exclusively on the production activities of a particular crop, and ignore the placement of production within a farming system.
Such systems achieve high production levels at a high cost, by disregarding all the associated activities and needs of farmers, and are notorious for disadvantaging women. However, an FAO study of a commodity extension program in Cameroon showed women to have moderate participation in demonstrations, field days, and planning (FAO, 1993). Improvements could be made if prior gender analysis identified high value commodities produced by women. Inputs and credit availability could be tailored to the needs and abilities of local female farmers (Rivera and Schram, 1987).

**Integrated Development Projects**

Integrated development programs are usually the product of international or non-governmental organizations. In Trinidad, the Caribbean Network for Integrated Rural Development (CNIRD) and the Caribbean Agricultural Research and Development Institute (CARDI) are two such organizations.

Drawing on external funding and mandates, integrated development projects address a specific population and problem within the larger system. Although this structure allows a broader definition of problems, including social, economic, and agricultural issues, they may be hindered by their need to demonstrate success to donors. Their impact is usually limited to a specific location and may lack sustainability due to limited ties with existing national networks or alternate sources of funding. Agents may prefer to work with those farmers who appear to have the greatest chance of success, usually higher resource male farmers. In addition, projects may come with pre-designed methods and not recognize the different needs of men and women.

Alternatively, if projects were to start with investigation instead of agenda, there would be a greater likelihood of successfully identifying and integrating women’s concerns into the project. FAO found that women tended to have moderate participation
in project approaches. Although fairly high levels of women were involved in project implementation, their overall inclusion was limited by low participation in planning activities, perhaps due to the external nature of these projects (FAO, 1993).

**University-Based Extension**

The United States was the first country to organize its extension system through the university. Through US influence globally, this system has spread to other countries, including the Netherlands, India, and the Philippines. The US Cooperative Extension System is a collaborative effort of federal, state, and county governments. Each state has a designated Land-Grant University that is responsible for conducting teaching, research, and extension within that state (Seevers, Graham, Gamon, and Conklin, 1997).

The location of both research and extension within the university is intended to facilitate communication between these bodies, ultimately improving the flow of information from farmers to researchers. However, the flow of information is still often top-down, with limited feedback to researchers on the needs of farmers. Interviews done in May 2001 at the University of Florida revealed that the communication that did occur between research and extension was largely informal, with both sides indicating a desire for more formal interaction. The net result of this was that while researchers directly interacted with large-scale farmers, the small-scale farmers were not heard unless they “banged the loudest on extension’s door” and became the “squeakiest wheel” (Quesenberry, personal communication, 2001).

As a public organization, the university-based system has the potential and indeed the mandate to engage with a broad cross section of the farming community. However, the physical and often psychological separation of the university from the rural areas may limit awareness of the actual diversity in the farming communities. To ensure equitable
interaction, the university must include gender and social issues as an explicit part of its mission and specifically designate funding for this purpose. The inclusion of social scientists from the university may help to address this (Saito and Spurling, 1992).

In Trinidad, the Faculty of Agriculture and Natural Sciences at the University of the West Indies (UWI) focuses primarily on teaching. Agricultural research is published through the university’s Journal of Tropical Agriculture. Although departments occasionally host conferences for agricultural producers (offered by the Ministry or commodity boards), there is no staff specifically designated for extension.

Agricultural Context in Trinidad

To situate the findings of my study and to critically evaluate any response, it is helpful to be aware of the overall context of agriculture in Trinidad. Historically, agriculture was the backbone of the economy, leading Trinidad to establish the first college of tropical agriculture in the world. An extensive Ministry of Agriculture was institutionalized to guide the development of the agrarian economy. However, the national focus shifted with the subsequent discovery of oil, which replaced agriculture as the driving force of the economy (Brereton, 1981). Despite the continued neglect of agriculture, many agricultural institutions still exist, albeit under funded, struggling to serve a marginalized rural community.

Agricultural Foundation

Trinidad’s agriculture is a product of several colonial enterprises. During Spanish control from 1492–1797, agriculture was organized around the encomienda system, which established tobacco and cacao as important industries (Harry, 1980). French planters began settling in Trinidad in the late 1700s, introducing African slaves to work sugar, coffee, and cotton estates. However, it was not until 1797, when Trinidad became
a British colony, that large-scale slavery was instituted to run the massive sugarcane plantations. Emancipation in 1834 threatened to disrupt the labor supply that supported the sugar industry, prompting the immigration of indentured laborers from India between 1845 and 1917 (Harry, 1980).

This historic division of the agricultural labor force is still evident today, as many Afro-Trinidadians have avoided returning to agricultural activities, so that the majority of farmers are Indo-Trinidadians (Clarke, 1984). This dichotomy is evident geographically, as the central and southern rural regions tend to be primarily Indo-Trinidadian, while the urban and northern rural areas are predominantly Afro-Trinidadian (Clarke, 1984).

**Development of Small-Scale Agriculture**

“Peasant” or “backyard” agriculture arose during slavery with the granting of provision grounds for household consumption and the opportunity to sell the surplus in informal markets (Reddock and Huggins, 1988). However, small-scale farming only began on a significant scale with emancipation and the absorption of former slaves, and later indentured laborers into “own-account” production. The initial focus was on subsistence production, both for the 21,000 freed slaves and the Indians laborers who were granted small plots of land at the completion of their contract (Brereton, 1981; Harry, 1980).

From the mid-1800s until about 1900, small-scale farmers became increasingly involved in the cultivation of cash crops, contributing to national harvests of sugar and cacao. While Indians introduced the cultivations of rice, many Africans spread into marketing activities (Harry, 1980).
The Marginalization of Agriculture

The direction of Trinidad’s economy was forever changed in 1857 when the world’s first oil well was drilled in south Trinidad by the Merrimac Oil Company, leading to the establishment in 1910 of Trinidad Oilfields Ltd (Saft, 1998). The development of the oil industry enabled the transition from an agricultural-based economy to an industrial economy. As oil revenues expanded the government’s coffers, manufacturing and service sectors emerged and the relative importance of agriculture began to decline (Brereton, 1981).

Industrialization became official government policy in 1950, when Trinidad initiated “industrialization by invitation” with measures designed to encourage foreign investment and restrict union activity (Saft, 1998). However, agriculture retained its economic importance, as development proved a difficult process. With oil prices slumping, the manufacturing sector languished, and unemployment rose.

A major change in Trinidad’s fortunes came in the 1970s, when OPEC took control of the world’s oil supply, causing oil prices to skyrocket. Between 1970 and 1977, GDP increased at a rate of 23% annually (Boodhoo, 2000). The government of Trinidad reaped enormous profits through taxation, leading to massive investments in state projects while the agricultural sector was neglected. Wages for government jobs were increased, drawing many rural people away from agricultural labor. Between 1970 and 1980, the agricultural labor force decreased by 25%, from 60,000 to 45,000.

While oil enabled Trinidad’s strong economic performance through the 1970s, the collapse of international oil prices in the 1980s exposed its over reliance on the energy sector. The resulting decline in foreign exchange earnings and the subsequent debt crisis led the government to accept a loan from the International Monetary Fund, under the
conditions of structural adjustment. The terms of the loan included cutbacks on government expenditures, causing unemployment to peak at 22% in the late 1980s (Tourism and Industrial Development Company of Trinidad and Tobago, Ltd. [TIDCO], 2002). To improve the balance of trade and increase foreign exchange, the government refocused on its traditional export crops. Under Prime Minister Robinson, multiple agricultural projects were initiated throughout the country and government wages were decreased.

These measures eventually revived the economy, however the revaluation of agriculture was short-lived. As oil prices began to climb, the government once again refocused on the development of the energy sector. Between 1982 and 2004, the number of agricultural holders in Trinidad fell 50.5% (CSO, 2005). Although the institutional structures remain, there is little faith in the future of agriculture. The Ministry of Agriculture continues to employ knowledgeable researchers and extension workers, and the University of the West Indies retains a multi-departmental College of Agriculture. Resources still flow to large-scale export farmers. However, most farmers in Trinidad are constrained by the low status of agriculture (See Farmer Letter in Appendix E), as reflected in deteriorating agricultural access roads, a stagnant land distribution system and limited response to crop loss through fire, drought, flood or larceny. In many rural areas, only the decaying remains of the once vibrant agricultural industry are visible. Cocoa and coffee drop their fruit in abandoned estates, cocoa houses tilt and collapse into the forest, and overgrown access roads lead only to the bush. Although farmers persist out of an unquenchable love of agriculture, most Trinidadians view agriculture as an
activity of last resort. To this day, agriculture remains a marginalized industry, viewed by the government mainly as a welfare activity.

Agricultural Outreach

Ministry of Agriculture, Land, and Marine Resources

In Trinidad, agricultural outreach is primarily the responsibility of the Extension Division of the Ministry of Agriculture, Land, and Marine Resources (MALMR). The Extension system is organized into North and South Regional Divisions, and an Extension Core Division.

The Core Division is composed of professional Extension staff that determines Extension policy and (theoretically) consults with each region. The Core Division also houses the Farmers’ Training Center, which conducts free short courses on a variety of agricultural topics both on site and at several outreach locations. Recently, Core professionals have been evaluating more participatory models of extension such as the Farmers’ Field School. Initially used to develop farmer awareness of Integrated Pest Management, the Field School facilitates hands-on learning on farmers’ own plots (Ganpat, 2002). This method has proven popular with farmers and is being tested and adapted in other regions.

In each administrative region there is a descending hierarchy of Extension officers, assistants, and aides who interact more or less directly with farmers at the county and district level (Dass, 1995). There are over 100 frontline Extension officers resulting in a farmer: officer ratio of 500:1 (Dass, 1995). This is a somewhat daunting figure given that Extension officers rely primarily on individual contact (as opposed to group or mass) to reach farmers. Frontline officers are responsible for 1) providing educational and
advisory programs, 2) administering agricultural incentive programs\textsuperscript{6}, and 3) monitoring pests and diseases.

**Linking organizations**

The recognition of persistent rural poverty and unemployment has lead to various national, regional, and international agricultural assistance programs. The Caribbean Network for Integrated Rural Development (CNIRD), the Caribbean Agricultural Research and Development Institute (CARDI), and the Inter-American Institute for Cooperation in Agriculture (IICA) have all been involved in various programs targeted at small-scale and female farmers. While these programs may provide temporary solutions to immediate problems, the long-term effectiveness and sustainability of such programs is limited by their lack of coordination with each other or the Extension Division and to permanent sources of funding. The Extension Division also has historically weak linkages with the Research Division of the Ministry, limiting officers’ (and thus farmers’) ability to influence the national research agenda.

**Implications**

The general neglect of the agricultural sector since the focus on industrialization has constrained the development of agriculture on many levels, down to the individual farm. Any recommendations for change must be understood within that framework. Without the lifting of certain systemic constraints, and the consideration of agriculture as an important and viable economic activity, agriculture will remain a marginal activity, despite the best efforts of farmers and organizations alike.

\textsuperscript{6} Subsidies are available to registered farmers on certain farm inputs, such as brush cutters.
Summary

A large body of research has documented the existing gaps between the agricultural support system and small-scale farmers. In order to equitably serve a diverse farming population, organizations must recognize and respond to gender and social diversity. Gender analysis can assist in identifying distinctions in farming systems and evaluating institutional practices. Outreach organizations need to be aware of potential biases in different extension models. In Trinidad, any recommendation for organizational change must also take account of the systemic constraints on the agricultural sector.
CHAPTER 3
METHODS

Introduction

This chapter describes the overall research design as well as the methods used in the collection, analysis, and presentation of data. This was a descriptive study, integrating both qualitative and quantitative research methods. As such, it does not fit neatly into any one methodological box, but crosses several disciplinary boundaries. Thus it deserves an introductory explanation, to avoid misunderstanding by readers familiar with different research conventions. I employed predominantly qualitative research methods, using ethnographic techniques developed in anthropology, in researching a field that is traditionally quantitative. According to Bamberger (2000) much of agricultural, extension, and development research is based on statistics and economic modeling. Because of this, I have provided detailed description of the techniques I used for qualitative data collection and analysis. Integrated qualitative and quantitative studies are becoming increasingly mainstream in agricultural research and development (Bamberger, 2000), but their acceptance demands a thorough presentation of methods and results.

My study is also non-traditional in presentation. I have merged the narrative format of ethnography onto the standard framework of a scientific dissertation (problem statement, methods, results, conclusions). Throughout the following chapters, I have interspersed my analysis with relevant sections of my field notes, both observations and quotes, which allow the reader to “see into” the field and glimpse farmers’ realities as they were revealed to me. By having direct contact with my data, the reader can evaluate
for themselves the appropriateness of my interpretation and analysis. Field notes selected for inclusion in the text are identified by the location (Toco, Cedros), ethnicity (Afro-Trinidadian, Indo-Trinidadian) and gender of the farmers (female farmer, male farmer, farm couple). To protect the anonymity of participants, general pseudonyms are used, such that WA refers to any woman involved in agriculture and MA refers to any man involved in agriculture. General or self-referential observations are described by location only. Although not identified by a specific date, all field notes were collected between March 2003 and March 2004.

In this chapter, detailed descriptions of methods are interspersed with those field notes specifically pertaining to my relations with the communities in which I worked. These “reflexive” sections follow the conventions of qualitative research that require the explicit recognition of the researcher as an influential component of the research process (Glesne, 1999). This practice is important in establishing the validity of qualitative research, as it situates the data as the product of specific interactions between a unique “instrument” (the researcher) and the study participants (Ary, Jacobs, and Razavieh, 1996).

The interweaving of texts may be initially uncomfortable for the reader accustomed primarily to one research tradition. However, I would argue that such presentation is well suited to a study of this nature. In fact, some initial discomfort on the part of the reader may prove to be beneficial, if it leads to a deeper understanding not only of this particular situation but also of our own conception of knowledge creation and representation. Further discussion of the ethnographic format as it was used in this my study can be found in the final section of this chapter entitled “Telling the Story.”
Research Design

This was a descriptive study of two ethnically distinct farming communities in Trinidad\textsuperscript{7}. I primarily employed qualitative research techniques with individual farmers and small groups, but also incorporated some quantitative methods to broaden the findings to the regional level. To understand the social and gender identity of small-scale farmers, I used ethnographic techniques, developing long-term relationships to create trust and increase disclosure of sensitive issues. I intertwined this with field observations of agricultural activities and informal inquiries into the factors affecting decision-making. I employed participatory research techniques to generate community discussion of their interaction with agricultural support organizations. Once the main trends were identified, I administered a quantitative survey to the broader farming community in both regions to increase the validity of the findings.

Qualitative research was appropriate for this my study because I was entering a foreign culture and attempting to understand the issues through the eyes of the local people (Ary et al, 1996; Denzin and Lincoln, 1998). As a foreigner discussing the potentially sensitive (and often invisible) dynamics of gender, culture, and social identity it was important to spend an extended period of time in the field, developing trust and learning the community’s “language” through participant observation (Denzin and Lincoln, 1998).

\textsuperscript{7} Trinidad is part of the twin island Republic of Trinidad and Tobago. Because the two islands have distinct social and agricultural histories, this study was limited to the island of Trinidad.
Population

Study Variables

Gender

I selected gender as the primary variable of analysis for a variety of reasons. My academic training had exposed me to global inequities in gender and development, and I postulated a similar situation in Trinidad. This was confirmed by both national and international studies that reported low numbers of women participating in agricultural extension programs in Trinidad (Dass, 1995; IICA, 1993). One of the primary constraints identified by agricultural officers was their lack of information on women’s agricultural activities. Therefore, I decided to focus on female farming systems, in the hopes of adding some useful information.

However, during my year in the field, there was a gradual deepening of my understanding of gender as a study variable. I began to realize that this needed to be truly a “gender-based” study and examine the differential situations of men and women. While women often operated with more constraints and fewer resources than men, men in these communities also faced many constraints, especially limited access to organizational resources. I realized that I needed to document the differences between women’s and men’s farming systems, to allow a more targeted response to the entire farming population. For this reason, I interviewed both women (n=72) and men (n=104) during the course of my data collection.

Ethnicity

After consultation with faculty at the University of the West Indies in Trinidad, I decided to also consider ethnicity as a variable, for the following reasons:
• There are two main ethnic populations in Trinidad, of East Indian (40%) and African (40%) descent (CSO, 2005), and they have in many cases maintained distinct communities due to historical patterns of settlement (Reddock and Huggins, 1997; Clarke, 1993; Harry, 1980).

• Gender roles are known to be in large part shaped by culture and ethnicity (Boserup, 1970; Young, 1992).

• Farming systems are partly a product of ethnic traditions and knowledge (Salamon, 1985; Norman, 1986; Gutierrez and Eckert, 1991).

• Farmers’ interaction with the predominantly Indo-Trinidadian Extension staff may be affected by ethnicity (Lewis, 1990).

Selection of Communities

I decided to select two communities that were ethnically distinct but otherwise as similar as possible in regard to 1) farming system, 2) economic alternatives and 3) accessibility (roads, markets, distance from urban areas, services). The decision as to which two communities would be most comparable on these factors was not an easy task, and I relied heavily on my discussions with university faculty and Extension personnel.

As one of the few distinct Afro-Trinidadian farming communities, the Toco region was an obvious choice and was supported by all my advisors. However, the selection of a representative Indo-Trinidadian community was more problematic. Much of the debate centered around the definition of “traditional” Indian culture, which some linked with the Hindu religion.

The Cedros region was initially proposed as a predominantly Indo-Trinidadian community that was similar in access and economics to Toco. However, because Cedros has a relatively high proportion of Christian Indians, some people felt that it was not a good representative of Indo-Trinidadian culture. Other regions were suggested as more “traditional,” such as Debe, a predominantly Hindu and Muslim area. However, Extension personnel felt that these areas were significantly more commercialized,
accessible, and affluent than Toco, and, as a result, would not be comparable. Further consultation with Extension staff led to the realization that, although Cedros had a significant Christian presence, there was still a large Hindu community. In addition, some of my advisors were not convinced that religion was a significant factor affecting cultural norms. They did not feel that “traditional” Indian family structure and gender roles had been much impacted by changes from Hinduism to Christianity.

Thus, with the recognition that no two communities would be exactly comparable, it was felt that Cedros and Toco remained the best communities to study based on the following similarities:

- **Farming system:** In both communities, farming systems were characterized by small scale agriculture around the edges of large plantations (cocoa, coffee, and nutmeg in the northeast, cocoa and coconuts in the southwest).

- **Economic alternatives:** The economic importance of the agricultural plantations as a source of employment had waned, creating varying degrees of economic hardship as they scaled back or closed down completely. Fishing remained an important livelihood activity in both regions, although it was declining with the advent of other economic alternatives. Both regions also had a small but viable tourism sector.

- **Accessibility:** Both communities were literally “at the end of the road,” and probably represent the extremes of cultural and physical isolation in Trinidad. Trinidad is a small island and relatively well developed. However, limited transportation (both public and private) in rural areas has led to a high degree of separation between urban and rural areas. This is especially true for Toco, which has limited contact with the rest of Trinidad. In the words of the locals, they are “living behind God’s back,” epitomized by their almost total lack of radio reception and limited phone service.

**Geography**

The communities selected for my study are both ethnically and geographically distinct (Figure 3-1). The Toco study region, in northeastern Trinidad, is characterized by a predominantly (93%) African-descent population (CSO, 2001) engaged in small-scale
Figure 3-1. Map of Trinidad showing Toco and Cedros study areas.

Copyright permission from Edward Barrow. Map obtained from www.tradewinds-co.com.
hillside agriculture and fishing. Toco is contained within two overlapping political
divisions, County St. David and the Regional Corporation of Sangre Grande. The Cedros
study region, in the southwest corner of Trinidad, has a predominantly (91.5%) East
Indian-descent population (CSO, 2001), engaged in a similar mix of fishing and
small-scale agriculture. Cedros is administered as part of County St Patrick West and the
Regional Corporation of Siparia.

For the purposes of my study, “Toco” includes the four villages at the end of the
Paria Main Road, namely Matelot (population 523), Grande Riviere (population 334),
Montevideo (population 153), and Sans Souci (population 535) (CSO, 2001). Limited
surveys (n=4) were done in L’Anse Noire and the village of Toco, which are typically
considered part of the Toco region. However, since the bulk of research was done in the
four preceding villages, they constitute the Toco area for the purposes of my study.
Altogether, this encompasses a total population of 1,545 people. These four villages are
similar in ethnic composition and agricultural practice to the other villages in this area;
therefore they serve as a good representative of the region. Probably the most significant
difference is the increased access to services and information in towns closer to the
nearest market town of Sangre Grande.

The region defined as “Cedros” in my study incorporates the villages at the extreme
depth of the Southern Main Road, namely Coromandel, including the settlement of Pt.
Coco, (population 1151), Granville (population 366) and Chatham (population 1,466)
(CSO, 2001). Coromandel and Granville are significantly more agricultural (and more
ethnically homogeneous) than Chatham, therefore all the qualitative research and the
majority of the quantitative research were done in these two villages. Consequently, they
are considered the primary study area, comprising a total population of 1,517, comparable to that of Toco. I also did surveys (n=14) in Chatham to add to the regional perspective of my study. This allowed better comparison with the district as a whole, as Chatham reflects the region’s trend away from agriculture towards a more industrial or service oriented economy. Although the villages of Icacos and Bonasse are generally considered part of the “Cedros” region, they were not included in my study as they had very little small-scale agriculture, as most of the land was held in large private estates.

Agricultural Profile

The Toco region

Toco is contained within the larger administrative area of the Regional Corporation of Sangre Grande of which 3.7% of the population was classified as “agricultural holders” in 2004 (Table 3-1) more than double Trinidad’s overall percentage of 1.5% (CSO, 2005). The same study reported a marked gender difference in agricultural holdings in the region, with 6.0% of the male population of classified as holders, versus only 1.2% of women. For both sexes, this was higher than average for Trinidad, which categorized 2.5% of men and 0.4% of women as holders (CSO, 2005). Thus, by Trinidad standards, the region of Sangre Grande has a relatively high participation in agriculture.

The Cedros region

Cedros is administered as part of the Regional Corporation of Siparia, which has 1.6% of its population classified as agricultural holders, similar to the Trinidad average of

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8 As defined in the *Preliminary Report of the 2004 Agricultural Census*, an “agricultural holding is an economic unit of agricultural production producing primarily for sale…without regard to title, legal form, size or location” (CSO, 2005). Thus non-commercial production was not counted, but squatters were.
Table 3-1. Incidence of agricultural holders in Trinidad and in the two regional corporations.

<table>
<thead>
<tr>
<th>Agricultural holders&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Gender</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Trinidad</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>2,627</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>15,465</td>
</tr>
<tr>
<td>Population&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Female</td>
<td>614,800</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>616,300</td>
</tr>
<tr>
<td>Percentage of agricultural holders in the population</td>
<td>Female</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1.5</td>
</tr>
</tbody>
</table>

Statistics refer only to the island of Trinidad and do not include the island of Tobago. <sup>a</sup>Source: CSO, 2005. <sup>b</sup>Source: CSO, 2004. The figures for Trinidad were calculated as 96% of the national population, based on 1990 and 2000 data. The regional figures were derived by calculating the percent increase for each gender islandwide and extrapolating to each region.

1.5%. Regional gender differences are also comparable to island-wide trends. In 2004, 0.5% of women in Siparia were identified as agricultural holders (as compared to 0.4% island-wide), while male participation in agriculture (1.6%) was slightly lower than Trinidad averages (2.5%) (CSO, 2005). Thus, by Trinidad standards, Cedros has low to average involvement in agriculture.

**Qualitative Data Collection**

This section describes the qualitative methods of data collection I used during the first ten months of field research, from March through December 2003. I did not arrive in the field with a predetermined set of questions, but rather with open-ended question
guides (Appendix A) describing the areas of interest that I would be investigating and from which I would later develop a questionnaire. This approach was approved by the University of Florida’s Institutional Review Board (Protocol #2003-U-0031) with the understanding that every research participant would sign a document of informed consent (Appendix B).

**Measures of Validity**

To ensure the validity of the research, I used several techniques especially developed for qualitative inquiry. One of the most important aspects of validity in qualitative research is a reflexive section (Glesne, 1999) that describes the data collection instrument—in this case the researcher, myself—and how the data collection and analysis were affected by who I am. This is described at length in “Reflecting myself: Researcher—community relations” especially the section entitled “situating myself.”

Transferability is another important concept in qualitative validity and equates with the quantitative concept of generalizability (Trochim, 2000). Because qualitative research recognizes that all research is contextual, generalizability is typically not a goal. However, by describing the research setting in great detail, the qualitative researcher leaves it up to the best judgment of the reader whether the specific results can be appropriately “transferred” to another setting. To help the reader understand the setting of this research, I have described the two communities in great detail. In the section entitled “Selection of Communities,” I describe the characteristics that led to the selection of these two regions, and how they compared to other areas in Trinidad. This is followed by sections on the geography and agricultural profile of the two study regions, which include comparisons with the island in general. This is further elaborated in the section “Comparison of survey sample to population” which shows how my sample compared to
the recent agricultural census. All of these sections should allow the reader to make an informed decision as to whether the findings of my study should be generalized to other regions.

Dependability is related to the quantitative concept of reliability, which measures whether the same results would be obtained if the research was repeated. Since qualitative research starts with the basic premise that no research is replicable, as no two investigators are the same, the concept of dependability is used to show how the changing research context affected the study (Trochim, 2000). This is covered in the section on researcher-community relations, in which I describe how research relationships changed over time in the two communities, and the stages I went through, from “establishing a home” to “making transitions” to “maintaining relationships” and finally “recognizing my place.” This allows the reader to gauge how changes in the research context affected my relations with the community and thus my data collection.

Confirmability relates to how well the results can be confirmed by others (Trochim, 2000). I followed a number of accepted strategies to ensure the confirmability of my results. I employed negative case analysis (Glesne, 1999) in a number of ways. At the most general level, I had begun my study focused on women, however field observations led me to realize that I could not examine the situation of women in isolation, without recognizing and comparing men in agriculture (see the section on “gender” under “research variables.” I also searched for cases that were at odds with my specific findings. For instance, although the vast majority of childcare was done by women, I made a point of highlighting the one father I met who had assumed sole responsibility of his son (see “gender and dependents” in Chapter 5). To increase confirmability, I sought
out literature on social identity in Trinidad during the course of my data collection to ensure that my interpretations were correct and prevent misdirection in my continuing analysis (see the introduction to Chapter 5). I also used member checks (Glesne, 1999) to ensure confirmability. I had Trinidadians with varying levels of participation check my interpretations at different points in the data collection and analysis, including farmers who had participated in my study, Extension professionals, and graduate faculty and students at the University of the West Indies.

**Engaging Farmers**

To earn farmers’ candid responses, I had to establish my *personal* “validity” as a trusted confidant. Towards this end, I conducted numerous interviews with each participant over the ten months and made a point of taking time for purely social interaction and discussion as well. While I always made clear that I was conducting research, I tried to minimize the feeling of a researcher/subject relationship. This was primarily achieved through informal interview techniques and non-obtrusive data collection. In both individual and group work with farmers, I relied primarily on mental reference to my question guides and only recorded data when I returned to my desk and computer.

**Contacting farmers**

Following qualitative convention, purposive sampling was done in order to ensure that the sample represented the broadest range of factors of interest (Ary et al., 1996, Bamberger, 2000). My first goal was to locate about five female farmers in my “home” villages, and then to select a smaller representative cross-section of male farmers. Farmers were identified based on their involvement in agricultural production, whether commercial, subsistence, or some combination of both, including off-farm and
non-agricultural work. Farmers were categorized depending on agricultural participation, not on marital status. Therefore, a “female farmer” or a “male farmer” might be single, married, or widowed, however they were the only person in the household (excluding children) with significant agricultural involvement. “Couple farmers” were in some sort of conjugal relationship, whether married or common-law, and both partners were active in agriculture. A pointed effort was made to include farmers who might not be visited by extension because of difficulty of access or size of landholding. These tended to be lower resource farmers, often women or the elderly, who farmed marginal pieces of land on the geographic periphery of the villages.

After a first round of interviews with farmers in my “home” village, I identified several more farmers in surrounding villages. The time involved in making and maintaining those relationships became its own limitation, and in the end I maintained relationships with thirteen primary contact farmers in each region. In Toco, these were comprised of five female farmers, five male farmers, and three couples farming together. In Cedros, I worked with six female farmers, one male farmer, and six couples farming together.

**Identifying female farmers**

In both communities, the first responses to my inquiries were uniformly disheartening, even though somewhat expected. I was informed that there weren’t many female farmers in that village, although if I went to another village, I might find more…However, I was persistent in my efforts to identify female farmers, and slowly the network expanded. The initial invisibility of these farmers appeared to be a combination of the community’s social perceptions and biases, as well as a disbelief that I, as a foreign
researcher, would actually want to interview these farmers. The biggest breakthrough usually occurred when I meet an active female farmer, who would then direct me to the other women in her network.  

It has been fascinating watching the gradual “discovery” by the community of the women farmers, in response to my open and stated interest in working with women. At first, they could only think of one or two. But every day, one or two more have “appeared” as people introduce me around, and realize that “oh yes, she also is a farmer.” Plus some of the older and poorer people who live on the fringes have been “forgotten” until something reminds my contacts of them (Toco).

Establishing relations

As an outsider, I felt that it was important to make contact with “new” farmers through the introduction of local community members, in order to establish an initial level of trust.  

I drive round with WA to meet area farmers, guaranteed of an in-depth introduction by her chatty nature…It is a great way to meet the broader community as well, as she knows everyone, and cannot pass anyone on the road without winding down the glass for a lime (Cedros, Indo-Trinidadian farm couple).

This method of establishing “who I was” turned out to be crucial, as later I was told that once I had been identified by some skeptics as a “fraud.” They thought I was actually from the CIA, with all my nosy questions! Luckily, by that point I had earned a high level of respect in the community, and the short-lived rumor did not affect the openness with which most farmers entertained me and my questions.

Expanding the network

Initially I relied heavily on a few farmers for introductions. However, I soon realized that this was keeping me within prescribed “networks,” as there was a definite tendency to introduce me primarily to those people who shared an “identity” with them, be it church or family. In Cedros, there was a tendency for people to introduce me
preferentially to their family members, which created a highly selective network of relations.

Once I realized this, I began to consciously search out other venues for meeting farmers. This required some effort and negotiation on my part, as I had to obtain entry into new circles and re-validation. In both regions, religious affiliation was very important. Therefore, I made a conscious effort to identify individuals of different faiths and create linkages from there.

MA took me to a Hindu Ramayana, which turned out to be a great way to meet people. I was introduced by the pundit on the first night I attended, and to my surprise he knew who I was and what I was doing. He called my presence here a “blessing” and exhorted me to “absorb all that I see and hear” (Cedros).

**Sondeos / Informal interviews**

My interviews with farmers during this portion of my research were entirely informal and were conducted either in the field or “liming” with farmers afterwards. I relied on sondeo techniques (Hildebrand, 1986), going (literally) into the field without pen or paper and with only mental reference to a “question guide” (Appendix A: Farmer Question Guide). This allowed conversation to flow naturally, and enabled me to gather information on both my preconceived questions and, perhaps more importantly, issues of importance to farmers. I quickly developed an ability to focus and was able to recall, in impressive detail, the content of our conversations.

I typically spent the entire morning with one farmer, returning home in early to mid afternoon. My first task was to jot down on paper all the main topics that had been discussed. That was usually followed by a nap, as I found that such intense focus was extremely wearying. My mind clear, I was able to collapse into sleep, and wake refreshed to begin my evening’s activity: entering my field notes in full ethnographic detail. This
was an extremely time-consuming task, and started to become something I dreaded. I often could not finish in one day and would quickly develop a backlog that I tried to clear up before switching regions. During the survey portion of the research, when I did have pen and paper in hand, I was able to record direct quotations from farmers, which I added to my wealth of qualitative data.

**Participant observation**

I used participant observation techniques (Denzin and Lincoln, 1998) for data collection, going with farmers to their fields and helping them to the best of my abilities. Along the way I learned to break cocoa, tote plantain, and even weed with a cutlass. This proved to be invaluable in developing rapport and getting access to some of the more hesitant farmers.

As luck would have it, while I am working, cutlass and dasheen plant in hand, I finally see the elusive WA, a thin, strong looking woman in her 40s, passing by on the road. The senior woman introduces us, telling WA that I “can work.” WA looks rather bemused and tells us she is on her way out, but some other time… Just before she turns the bend, she looks back and calls “does she have tall boots?” These are demonstrated to her (and my) satisfaction (Toco, Afro-Trinidadian female farmer).

Going into farmers’ fields was also vital to my understanding of the local farming systems, as the whole conception and arrangement of cultivation was dramatically different than what I was accustomed to. When I first went on farmers’ lands, it all looked like bush to me. Between the abundant foliage and an apparently haphazard planting scheme (no straight lines of crops), it was often difficult for me to distinguish farm from forest. However, with time and experience I learned to recognize the patterns

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9 Tall boots” are knee high black rubber boots and are almost a stamp of identity for a farmer. They are a requisite part of a farmer’s apparel, especially in Toco, due to the high population of poisonous snakes.
and strategy of local cultivation systems. This was a necessary and crucial complement to the interviews that I conducted at “home.”

While living in a particular community, I attended any Extension activities that were offered in the area and tried to gauge farmer awareness of and interest in the events. These sessions were recorded in extensive field notes, and any handouts were collected.

**Focus groups**

A focus group (Krueger, 1998; Krueger & Casey, 2000; Morgan 1997) was done in each region, to generate community discussion on the following topics: 1) farmers’ relationship with Extension and 2) farmers’ access to organizational resources. I had invaluable assistance from a colleague in the Extension Division of the Ministry of Agriculture. He identified himself as a Ministry official; however we felt that his affiliation did not bias farmers’ responses, as he freely acknowledged the Ministry’s limitations and his desire to improve its services. We used Participatory Rural Appraisal (PRA) techniques (Chambers, 1997), such as Venn Diagrams, drawing and story-telling (Appendix A: Farmer Focus Group Question Guide) to facilitate farmer participation and feedback. In several cases we divided men and women into separate groups in order to observe differences in their responses. The sessions were recorded and transcribed, with permission of the participants.

**Reflecting Myself: Researcher-Community Relations**

This section describes the relationship between the researcher and the communities and how that impacted upon the research findings. The qualitative paradigm maintains that all research is subjective, beginning with the selection of the questions asked. No methodology is objective or perfectly replicable, as every interaction between the community and the researcher is influenced by the researcher’s “subject location,” that is
all the internal factors that have shaped the researcher’s perspective, and all the external factors that participants observe and respond to (Glesne, 1999). However, qualitative researchers maintain that their work is still valid, or, in quantitative terms, within “one standard deviation” of reality. To achieve this validity, it is necessary to explicitly document the researcher’s “positionality,” so that readers can evaluate the researcher’s influence on the data collected. “A reflective section on who you are as a researcher and the lenses through which you view your work is now an expected part of qualitative research studies” (Glesne, 1999, p. 109).

**Situating myself**

The stories I was told, and how they evolved, were affected by the communities’ own perception of me. What did they see? At first, the obvious: I am a white woman, in my 30s, and, once I open my mouth, an American. However, over time, I defied some of their expectations. As a “foreign” white woman, I was also able to avoid the racial tensions that may have influenced responses if I was black, Indian, or local white. Being white in Trinidad is associated with the maintenance of social (racial and class) boundaries, which I did not subscribe to. Many people remarked on this with surprise and appreciation.

WA introduces me to a woman and her daughter… and says we should all “lime” together. The woman is hesitant and says something about them not having utilities. WA reassures her quickly, telling her that I am “simple.” (She) “wants to do everything just like us…She won’t make you feel any way” (Cedros, Indo-Trinidadian farm couple).

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10 The “lime” is a uniquely Caribbean occupation, entailing any occasion in which the primary purpose is social interaction. Trinidadians have developed this to a very high art, which makes the job of a researcher immeasurably easier.
My interest in agriculture, and my willingness to go into the bush and work with the “smallest” of farmers, was also regarded with surprise. This revealed not only a perception of Americans, but more importantly an assessment of agriculture as a “low status” profession.

I indicate that I would be interested in meeting local farmers… WA replies that they would really like that, as not many people are interested in farming. “Not many people come from away to learn about agriculture” (Toco, Afro-Trinidadian female farmer).

Several Trinidadians expressed the belief that I was better received than a fellow Trinidadian would have been. They felt that I was taken more seriously in my work because I was a foreigner. A similar situation was reported in rural Jamaican communities, where it was noted that there was a “general lack of confidence in anyone from the area…(and) an entrenched belief that…new ideas of any value had to come from outside… The feeling was that a person from the same locality and background as everyone else had no authority” (Thomas-Hope and Spence, 2006, p. 23)

My interpretation of locals’ lives and stories was influenced by my own cultural and academic background. I was born a New England Yankee and was raised in an academically oriented family which fostered my own intellectual development. I am trained in international agricultural development and am especially influenced by the farming systems perspective. My keen interest in the gender and development field shaped the main slant of my research. Of specific relevance to my study, I studied and lived in Jamaica over a period of several years and developed an understanding of Afro-Caribbean society. Therefore, there was a distinct difference in my knowledge of the two Trinidadian cultures, which affected my research relations. As I was less familiar with Indo-Trinidadian culture, I was extra careful to be polite and made no assumptions
as to what was acceptable behavior. In Toco, I was more relaxed, confident that I knew the appropriate way to act.

**Establishing a “home”**

As a foreigner, I felt that it was important to live as much “within” the community as possible. To that end, I chose to rent from families, instead of securing my own separate accommodations. In Toco, I roomed at the small guesthouse of a farm family. Although my room was nominally private, I purposefully cultivated a relationship with the family, who lived at the “far end” of the house, two doors down.

Suddenly they all make expressions including me in their family. The father, introducing me, tells people that although I am a guest, I am more like family. The daughter tells me “there is always food in this house,” so I should come in and help myself. And the son says now that I am family, he can pick on me…(Toco, Afro-Trinidadian family).

To find housing in Cedros, I relied on the recommendations of the county Extension officers. The office telephoned one of the recognized female farmers in the region, who located a family that was willing to rent me a room in their house. In this case I actually did live “within” the family, sharing all spaces except my bedroom.

Mother and daughter are cooking in the kitchen, and the conversation starts to flow again…We all gravitate to the porch, with the mother bouncing back and forth between the kitchen and the lime (Cedros, Indo-Trinidadian family).

**Community relations**

Upon entering each community, my initial task was to establish a place for myself. I recognized that the way I was perceived in the village would influence all my research relations, and I wanted to develop a positive image from the beginning. I consciously tried to do public activities with one of “my” family members, as I felt that it increased my validity in the eyes of the community. I also realized the importance of being
identified with no one “group” – socioeconomic, cultural, religious, or family. To this end, I made a pointed effort to associate with many different people.

It is fascinating how my reception is affected by whom I am associating with. MA (a relatively larger, wealthier farmer) only introduced me to the people in “power” (such as shopkeepers), and the other locals just watched me silently. But today sitting on the bench with a small farmer eating soup…the girls who serve lunch smile and joke with me, and the men he introduces me to are simply friendly, without the reserve or deference I felt with MA (Toco).

**Making transitions**

It was necessary to observe an entire year in each community in order to avoid a seasonal bias that might affect both farmer and Extension activity (Chambers, 1997). Therefore, I maintained my room in both families for the entire twelve months, switching approximately every month between the two sites. While ensuring that an equivalent time was spent in each community, I was flexible in the actual scheduling, allowing the communities’ rhythms to determine my own. Although there was some concern that the intermittent nature of my presence might limit the development of rapport, periodic brief absences were not deemed as important as the cumulative effect of being present throughout an entire year. While in reality I could not maintain the 2-3 week schedule I had initially hoped for, spending a month away did not seem to limit rapport too drastically. I was always roundly scolded, as a prodigal daughter, and then warmly welcomed back in.

I finally get back to the farmers in south, after too long an absence…I have been away longer than I intended, and I get the expected scolding when I arrive. The difficulty of calling from GR (no cell service, no phone card for the call box) had kept me from calling…I make my apologies, which are accepted, but I am reminded NOT to be so long out of contact again… (Cedros).
Maintaining relationships

The primary challenge in working in two communities was investing adequate time to maintain the myriad of relationships that I developed. This was a pleasurable, but extremely time-consuming, task. I often felt torn between the desire to focus on my work and the social obligation of my newly formed “friendships.”

I am having difficulty managing the sheer number of relationships I am forming. Many people have opened up to me, extending a welcome that is absolutely overwhelming...I am invited to weddings and church services and dances... I feel a responsibility to make time for their needs, as they make time for my questions. So I find myself attending social events in the evening, when I should be writing my field notes (Cedros).

Recognizing my place

After a few months, I was pleased to realize that I had become a recognized and welcome figure in the two communities. I had been observed and assessed and was now an accepted “member” of the community, even if a transient and somewhat unorthodox one. This encouraged me greatly, as I often wondered how I was perceived.

Driving back to the village in the mid-afternoon, I am struck by the realization that I am becoming part of this community...I keep recognizing people I know, and passing with a shout and a wave. Driving around corners, I hear my name shouted from the hills above, and honk, not knowing to whom I reply. Twice I meet farmers walking along the road, and stop to chat… (Toco).

Personal challenges

The process of qualitative research can be extremely demanding, as one immerses oneself in a different setting, while at the same time trying to remain both an observer and highly focused. This was compounded by the fact that I not only stayed in the communities, but also lived with families. While this added richness to my study, it also was at times very challenging.

I am struggling with the feeling of always being “on stage” in the sense that in my research communities I am always trying to maintain a research persona. I am
careful to stay positive and open and unaligned, but sometimes I feel grumpy and antisocial, or like breaking out and being stupid and silly and young…. I find myself extremely fatigued, even when I have stayed home and worked at my computer and books all day (Cedros).

I often had ethical dilemmas about the contributions of my work in the face of the immediate and pressing needs that many families faced. As the community invested its time and trust increasingly in me, I felt a growing sense of inadequacy. I frequently felt guilty asking busy farmers to take time from their work to answer my questions.

As the sole provider for 3 grandchildren, WA is always very busy. Every time I have interviewed her, she has made use of my time and my hands, to help her with some project. Today, although I come in hopes of doing a brief interview, I realize that she is overwhelmed with work… Two of her grandchildren are at home, sick, and she is tending to them, washing clothes and cleaning house, as well as cooking for a large church dinner. I help her fold clothes and squeeze a huge bag of lemons… Finally, after 5 hours, I manage to get my questions asked, while she takes over squeezing limes (Toco, AT female farmer).

My only small satisfaction came when I realized that I could print and share the digital photos I had been taking of the farmers. After that, I made it a point to photograph every farmer I interviewed and give them several color photos.

The photos are well received, evoking pride in how nice their gardens look… They laugh to see themselves in their old work clothes. One of the women remarks, “I really look like a bush lady!” (Toco, Afro-Trinidadian female farmer).

**Quantitative Data Collection**

**Survey Design**

After ten months of qualitative research, I had gained an in-depth knowledge of the main issues in each community and wished to compare the local situation to the broader farming community in each region. Because further qualitative research would have been prohibitively time-consuming, I developed a questionnaire (Appendix C) that allowed me to rapidly gather data from a larger sample. This also had the advantage of generating
quantitative data that would provide descriptive statistics to complement my textual qualitative data.

Developing the survey

I was primarily interested in assessing how social variables interacted with three main areas: agricultural activities, access to agricultural organizations, and participation in community networks. I first examined several recent agricultural surveys (Dass, 1995; IICA, 1993) to check content and format. I then referred to my initial question guides (Appendix A) and reviewed those in light of my findings. This helped to ensure the validity of the survey, as the questions were based on empirical observation (Chung, 2000).

Farm gender classification

One of the main insights that arose from my preliminary data review was the need to categorize whether farmers were solely responsible for agricultural activities or were sharing responsibility with a partner. I had observed that men and women who farmed together (farm couples) had a distinct profile from men and women who farmed alone (male farmers and female farmers). Farm couples could not merely be understood as the sum of two individual farmers, but constituted a different form of household. The “social relations” of these couples created a distinctive resource base, separate from the effect of marital status. Marital status did affect the overall availability of resources, as married couples in general had access to a larger and more diverse pool of resources than single individuals did. However, farm couples appeared to have a different level of access to agricultural resources and networks.

I became increasingly convinced that these categories represented an important distinction in farming systems, as represented by objectives, resources, constraints and
activities. To account for this dynamic, I created a category named “farm gender” to record whether each farmer was working in the garden alone or with a partner (married or common law). Thus I had distinct categories for female farmer, male farmer, and farm couples, separate from marital status (which I also recorded).

**Ensuring validity**

When I was satisfied that the questionnaire adequately represented my major lines of inquiry, I reviewed the content with a Trinidadian Extension official. He had extensive experience in developing and administering surveys in Trinidad and was able to help me ensure content validity—that my questions were actually a good measure of the areas I was interested in—and face validity—that participants would perceive my questions as appropriate to the topic at hand. When this had been addressed, I pilot-tested the questionnaire with two local farmers, a male and a female, to assess their interpretation of the questions. This also allowed me to estimate the time necessary to administer it. Based on their feedback and my observations, I removed some questions as unnecessary and reworded others for clarification.

**The instrument**

The final instrument covered four topic areas:

- Demographic profile: 21 questions on individual social variables and household composition and resources
- Agricultural profile: 14 questions on primary and secondary agricultural activities
- Organizational profile: 22 questions on organizational access and satisfaction
- Community networks: 12 questions on participation in formal and informal community groups.

Survey questions included checklists from which respondents selected among possible answers, scaled items designed to assess level of satisfaction, ranking questions
to determine relative importance, and open-ended questions to elicit farmers’ own
responses.

**Administering the Survey**

Interviews were arranged a day or two in advance and generally lasted from one to
two hours. I conducted every interview myself, orally, and thus was able to ensure
comprehension. This was aided by my previous field experience, as I had learned the
local terms and measures that otherwise might have been confusing (for example, “fig,”
one of the primary crops, is actually banana). This was crucial for both my
comprehension and that of farmers. Terms that I could not clarify adequately I checked
with university and Ministry colleagues.

**Sampling techniques**

This was not a true random sample, as no list exists of all farmers in these villages.
Given that limitation, every effort was made to interview as “random” or at least as
diverse a sample as possible. The following techniques were employed: use of different
informants for introductions, use of different networks (churches, temples, families),
interviewing at different times of day, and consciously identifying farmers on both main
roads and relatively “invisible” side roads and tracks.

The sample was stratified by both ethnicity and gender. For statistical significance,
I deemed it necessary to interview at least 35 farmers in each of four interest groups,
defined by gender and ethnicity: female Indo-Trinidadian farmers, female
Afro-Trinidadian farmers, male Indo-Trinidadian farmers, and male Afro-Trinidadian
farmers. With each region being 95% or more ethnically homogeneous, ethnic
stratification was simple.
As far as gender, this was a disproportional stratified sample, as the sample percentage of male and female farmers doesn’t reflect their actual proportion in the population. Disproportional sampling is recognized to be an appropriate technique when the population size of at least one stratum (in this case female farmers) is relatively small (Agresti & Finlay, 1997). While my sample does not represent the true proportion of male and female farmers in the population, I am able to make comparisons between the percentage of women who know, access, or do something versus the percentage of men.

**Identifying participants**

Locating women farmers required persistence, especially as I expanded into villages where I was less known. Women farmers were generally less recognized in the community, so that I was usually directed first to male farmers, despite my stated interest in meeting women.

I have asked MA to help me meet other farmers, male and female, for my survey, as he says that he knows “everybody”… (Three days later) I have interviewed 10 farmers in the village, and not met a single woman…Finally, I show MA a list of women farmers (made by a woman in another village), but he only recognizes the names of 2 of them. To meet those, we find ourselves walking to the very edges of the settlements, down tracks and at the back of hills, where MF says he has never been before… (Toco).

Many of the women lived on the periphery of the village, physically as well as socially, invisible to and unrecognized by even the local people. I interviewed all the female farmers I could identify, including women who farmed with their spouse. In the end, I believe that I did almost a complete census of female farmers, especially in the Toco region, from Matelot to Sans Souci (this was later supported by census figures).

I then ensured that I interviewed an equal number of men, an easy task as there were always more male than female farmers. In neither region did I exhaust the pool of active male farmers, especially in the Toco region, where I believe that I interviewed less
than half of the male farmers. In Cedros I estimate that I interviewed at least half and possibly three quarter of male farmers. Because I was unable to do a true random sample of men, there may be some skew in the sample. As proportional to the population, I may have selectively over-sampled men in farm couples, in my effort to identify all the women in agriculture (if I interviewed the female half of the couple, there was usually a social obligation to interview the man as well).

**Gender disaggregation**

In households in which both partners were active in agriculture (farm couples), I attempted, when possible, to interview each partner separately. Several times this revealed different perceptions regarding agricultural roles and responsibility.

Today I was able to interview the male half of the (common law) couple that I met last week. While the woman had told me that their decisions were fully shared, the man maintained that he was the primary decision-maker. He said they “discuss” the garden, but he “makes the decisions” (Toco, Afro-Trinidadian farm couple).

In Cedros, it was often not socially appropriate to request separate interviews, as husband and wife usually were present together. Therefore, on pertinent questions, I directly sought and recorded a response from each individual, while recognizing that the answers may have been colored by the presence of the other.

WA sits in a chair a little way back, occasionally commenting, but letting her husband do most of the talking, although I make a point of looking at her and including her in the questions (Cedros, Indo-Trinidadian Farm Couple).

**Comparison of survey sample to population**

Between January and March 2004, I interviewed 142 households, of which 38 were female farmers, 70 were male farmers, and 34 were farm couples, making a total of 72 female participants and 104 male participants (counting a farm couple as one male and one female). This represented 4.3% of the population (n=70) in the Toco study region and
2.4% (n=72) in the Cedros study region. In Toco, this constituted 6% of men and 2.2% of women, while in Cedros, this represented 3.2% of men and 1.9% of women. In both regions, the percentage of the population and of each gender that I interviewed was slightly higher than that reported by the census as the total number of agricultural holders (Table 3-2).

Given this discrepancy, I did a careful review of the census data classification to determine whether my sample was actually comparable to the census. There were two possible discrepancies between the census and my survey data: 1) the definition of male and female agricultural holder and 2) the exclusion of non-commercial farmers from the census. These are addressed below.

**Gender categories.** At the completion of my survey, I had a total of 176 participants: 72 women and 104 men. These were drawn from 142 households, of which 38 were female farmers, 70 were male farmers, and 34 were farm couples. I counted a farm couple as one male and one female, as both were responsible for agricultural decision-making. However, the census recorded only one “agricultural holder” per household. They defined the holder as “the civil person…with the economic and technical initiative, who makes major decisions regarding resource use and exercises management control over the agricultural holding” – a role that most people assume the
Table 3-2. Percentage of farmers reported in the agricultural census versus the percentage of farmers interviewed for my survey.

<table>
<thead>
<tr>
<th>Location</th>
<th>Toco / Sangre Grande</th>
<th>Cedros / Siparia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Survey samplea</td>
<td>2.2 (4.7)c</td>
<td>6.0</td>
</tr>
<tr>
<td>Agricultural censusb</td>
<td>1.2</td>
<td>6.0</td>
</tr>
</tbody>
</table>

aThe survey figures refer to farmers actually interviewed, not the total number in the population. Percentages refer to the two regions as defined for the purposes of my study.
bSource: CSO, 2005. Percentages refer to the entire regional corporation. c Figures in parentheses refer to the total percentage of women in agriculture, including women in farm couples. d Figures in brackets refer to the percentage of farmers in Coromandel and Granville, excluding Chatham.

The man holds in a farm couple. Therefore, in order to compare my sample to the agricultural census, I equated my categories of “male farmers” and “farm couples” to the census category of “male agricultural holders.” For comparison to the census category of “female agricultural holders,” I used only the households I classified as “female farmers.” In this way, I ensured that my gender categories were comparable to census definitions.

Commercial farmers. The agricultural census did not count people who produced solely for household consumption. Therefore, I analyzed my data to check for the incidence of such farmers in my sample. Only 4% of my sample reported receiving no cash-income from their crop. This was matched by the 3% of farmers who reported home gardening as their primary agricultural activity. Therefore, given that less than 5% of the farmers I interviewed were producing solely for home consumption, my sample group was comparable to the census population.
Implications. Although my sample percentages appear only slightly greater than the census figures, it is important to note that I did not attempt to (and did not) interview every farmer in the region. Therefore, I believe that the actual percentage of farmers in both regions is even higher than the figure I reported and definitely above census estimations. The greatest discrepancy between the census and my sample is the percentage of women classified as agricultural holders (this holds true even though I removed women in farm couples from my calculations, and classified them as male households, as the census would have). In both regions, I found one percent or more women than the census. Given that I had a year to establish relations with farmers, while the census had a very limited time frame, this is not surprising. However, it does highlight the need for more official recognition of “invisible” farmers – in this case specifically female farmers.

Qualitative Data Analysis

I analyzed my field notes using both traditional hand-coding and ATLAS.ti® (Scientific Software Development, 1997), a qualitative software package for “Visual Qualitative Data Analysis, Management, & Model Building.” I followed normal qualitative conventions (Glesne, 1999), described here in greater detail for the benefit of those readers unfamiliar with this methodology. As a first step, I entered all my field notes into the primary database of ATLAS.ti®. I then assigned important pieces of text an identifying name or “code.” Subsequent text references to similar ideas were assigned to the same code. Thus all my field notes were categorized and sorted by content.

Codes were then analyzed visually. Each research objective was assigned a particular page on a flip chart (later, each objective expanded onto several pages, as analysis allowed further subdivision of findings). Each code name was written on a
sticky note and pasted onto any and all pertinent flip charts. Codes were then moved around on the flip chart, as relationships between them were analyzed. Eventually all the codes were clumped into related groups and given “family” names. These families represent my interpretation of the major findings. In this way the data related to each objective were analyzed and ordered into major themes.

The final visual analysis was entered into the computer and included in the results text as a “code map.” These “code maps” (Figures 6-1, 6-2, 6-6, 6-7, and 6-8) visually summarize the results of the data analysis, in a similar fashion to tables used in statistical analysis. Each map presents a specific part of the analysis. Code families are listed across the top of the map, with each associated code placed below. Detailed description of each code is presented in the appendix and illustrated with a selected field note. Since every code referred to multiple pieces of data, the selection of the most representative field note to include in the text was in itself a process of analysis and interpretation. The analysis was validated by checking the maps with on-site experts as to their soundness and representation of reality.

**Quantitative Data Analysis**

Farmer responses to the questionnaire were entered into a database in the Statistical Package for Social Scientists (SPSS®, SPSS, Inc., 2002). The data were treated as a random sample, recognizing the limitations described above. Because this was a descriptive study, the primary focus was on descriptive statistics.

Descriptive statistics were used to obtain profiles of the two communities, and comparisons were made by gender and ethnicity. For comparisons by ethnicity, only Afro-Trinidadian and Indo-Trinidadian farmers were compared. Farmers of “other”
ethnicities (n=4) were included in analyses by region. Further disaggregating was done by marital status and “farm gender” (female farmer, male farmer, farm couples) to analyze hypothesized recommendations domains. Due to the extremely small incidence of divorced or separated participants (n=7), these categories were analyzed as “single.”

This division of the total sample into 4 groups by ethnicity and gender lead to a relatively small number of respondents in any one group. Therefore, I rounded the results to the nearest 5th percentile to emphasize the trends rather than to claim specific percentages. This provides a more useful and valid representation of the findings. The use of statistical analysis and the presentation of specific numbers often imply a misleading precision and authority (Chambers, 1997). The more accurate story is the representation of trends and relative size (which is the largest/smallest group, most/least important, etc). Any response to these data would then be based on an understanding of the relative needs of different groups.

Due to the relative isolation of these communities, inferences regarding external factors such as extension and organizational services are only meaningful to the farming population in those regions, although there may be some similarities to other “peripheral” communities. On the other hand, these communities are similar to many in rural Trinidad in their retention of distinct cultural norms. Therefore, some of the findings regarding socio-cultural, socio-economic, and life stage variables may be reasonably inferred to other farming communities.

**Telling the Story (or Letting the Story Speak for Itself)**

While adhering to the standard dissertation format, I have followed ethnographic conventions in the writing of my chapters on methods and results. Although ethnographers continually employ new writing styles in their quest for more accurate
modes of representation, there are several common ways of organizing ethnographic texts (Glesne, 1999). I chose to arrange my text thematically, as it facilitated the most natural integration of the qualitative and quantitative portions of my work. “The most frequently used technique is organization by themes or topics. By analyzing the data, the researcher generates a typology of concepts, gives them names (codes names) and then discusses them one by one, illustrating with descriptive detail” from field notes and quotes (Glesne, 1999, p 166). This format allowed me to systematically analyze each objective while still directly incorporating field notes throughout the text. Wolcott refers to this as a “conceptually oriented” study\(^{11}\) – the text is “constructed upon a conceptual framework, with case data (field notes) playing an illustrative role” (Wolcott, 1990, p 29).

In using an analytical style of organization in the presentation of my findings, I tried to keep my study accessible to readers more familiar with quantitative approaches. At the same time, I endeavored to still honor the “emic” approach of anthropology – “a commitment to letting informants provide their own interpretations of meanings and events” (Wolcott, 1990, p 18) by incorporating field notes throughout my analysis. In keeping with the ethnographic tradition, which seeks to “represent the experiences and perspectives of research participants” (Glesne, 1999, p 12), I included both observations and quotations in the final text. This inclusion of field notes places the reader, to the greatest extent possible, in the closest contact with the “voice” and experience of the research participant.

Field notes and quotes are blocked, indented, and single-spaced to visually separate them in time and place from the analytical text. Field notes are identified by the location

\(^{11}\) As distinct from descriptively oriented studies, in which the main text is the narrative “story” and interpretive analysis is only infrequently interjected.
(Toco, Cedros), ethnicity (Afro-Trinadian, Indo-Trinadian) and gender of the farmers (female farmer, male farmer, farm couple).

This interwoven narrative follows the tenets of critical ethnography, which explicitly acknowledges “knowledge” as a source of power. In offering a “representation” of a community or culture, an ethnographer “creates knowledge” about that particular society. An ethnographer thus has an ethical responsibility to ensure that her / his “representation” is understood as her/his interpretation of that particular interaction between researcher and participants. While my selection of field notes represents a “subtle” analysis (as contrasted with Wolcott’s “intrusive analysis” of direct interpretation), their inclusion in the final text allows the reader to see, if not reality, then at least the reality that I perceived. My presence and influence is acknowledged by writing in the first person, as recommended by qualitative convention (Wolcott, 1990; Glesne, 1999). The juxtaposition of interpretive analysis and narrative “story” may be unfamiliar to those grounded in quantitative research, which endeavors towards the collection of “facts” without bias or influence. Critical ethnography, in contrast, purposefully highlights “knowledge” as a creation of the researcher.

In accordance with this, I have interwoven field notes and direct quotations throughout my analysis. I believe these are a vital part of my study for the following reasons:

- In providing highly detailed and emic descriptions of farmers’ lives and livelihoods, I represented their realities and voices with as little interpretation as possible.

- Previous studies have presented researchers’ views of what farmers need and want. However, most agricultural organizations admitted to weak links with farmers. One of the major contributions of this work is to present a forum for farmers’ voices.
• The inclusion of primary data allows readers to interact with this rich information and make their own interpretations, which may or may not be in accordance with my own.

**Summary**

I conducted a descriptive study integrating both qualitative and quantitative methods. To identify how social variables influence farming systems in two ethnically distinct communities, I used ethnographic techniques. I followed this with a quantitative survey, to test the initial findings among the broader regional farming communities. To explore the existing relationship between the agricultural support system and these farming communities, I conducted informal interviews with farmers and observed outreach activities. I used ATLAS-ti® for qualitative analysis and SPSS® was used for quantitative analysis.
CHAPTER 4
INTRODUCTION TO THE OBJECTIVES, RESOURCES, CONSTRAINTS AND ACTIVITIES (ORCA) FRAMEWORK

Introduction

In trying to understand agricultural systems in Trinidad, one must take into consideration how social factors shape farmers’ realities. To assume there is one typical “cocoa farmer” with one set of practices is to ignore all the diversity that exists. The choices that an individual farmer makes are the result of both internal and external factors. The internal, socio-cultural, socio-economic, and life stage factors determine, in large part, the objectives, resources and constraints of an individual farmer. These, in combination with external resources and constraints, result in a farmer’s choice of activity and method of undertaking that activity.

During the course of my study, it became evident that a framework was needed to help describe this observed relationship between farmers’ social variables and their selection of agricultural activities. Unaware of any such existing framework, I developed the ORCA (Objectives, Resources, Constraints, and Activities) framework to illustrate this relationship. This chapter describes the framework, its origins, and its specific application in my study.

12 External factors interact with internal social factors. Most farmers in Trinidad are constrained by the low status of agriculture, as reflected in deteriorating agricultural access roads, lack of information services, etc. However, the ability to cope with such external factors depends in large part on the individual farmer’s internal resources and constraints. External constraints and resources are described further in Chapter 2 in the section entitled “Agricultural Context in Trinidad.”
The following three chapters are organized around the findings from each step of the ORCA framework. In Chapter 5, I discuss influential social variables in my two study areas; in Chapter 6 I describe farmers’ objectives, resources, constraints, and activities; and in Chapter 7 I identify social recommendation domains and priority groups. Chapter 8 includes the beginnings of an action plan as well as a more general discussion of the ORCA framework and its potential uses and benefits in other studies.

The ORCA Framework

The ORCA framework (Figure 4-1) shows the relationships between social factors (socio-economic, socio-cultural, and life-stage variables) and agricultural activities. Social factors such as gender, education, age and household composition affect an individual’s objectives, resources, and constraints. Objectives directly influence the selection of agricultural activities. Resources expand the ability to meet objectives, as illustrated by the upright triangle. Constraints, as represented by the inverted triangle, constrict the ability to meet objectives. Considered together, objectives, resources, and constraints determine, in large part, what a farmer selects to do, and how they decide to do it. Farmers select crops that will help them achieve their personal objectives. The particular techniques they use reflect their available resources and constraints.

The ORCA framework can be used to systematically differentiate between groups of farmers based on social characteristics. It can aid in identification of social recommendation domains (SRDs), defined as groups of farmers that share influential social characteristics and similar agricultural strategies. Each SRD has distinct objectives, resources and constraints that affect 1) selection of livelihood activities and 2) ability to
Figure 4-1. The ORCA Framework
access and benefit from a particular agricultural technology. Therefore, it is crucial for extension, research, and policy-makers to recognize and respond to these differences.

**Origins of the Framework**

The ORCA framework was developed in response to the observed socio-cultural and socio-economic diversity in Trinidad farming communities. The initial intention was to collect data on cropping activities in order to create an ethnographic linear program (ELP). The ELP is a mathematical model that illustrates how household objectives, resources, and constraints determine selection of livelihood activities. The model assumes that production practices (input and output coefficients) for each activity are fairly standard within an area (Hildebrand, 2001). However, field observations in Trinidad revealed that this basic assumption was not valid in these communities. Not only was there a tremendous diversity of agricultural activities, but production practices also varied widely. Individual farmers cultivating the same crop used different types and levels of inputs, substituting one for the other depending on their resources and constraints. For instance, a farmer with limited cash-income might substitute more hand weeding for herbicides. Another farmer, constrained in cash-income and labor, might purposefully select a low labor crop and add no inputs. Cocoa, one of the most common crops, was cultivated more or less intensively depending on a farmer’s resource profile. Likewise, although the Ministry of Agriculture recommends one standard method for post-harvest processing of cocoa, farmers’ actual techniques ranged from minimally to highly managed. These varying production practices in turn led to huge differences in yield quantity and quality.

Therefore, it was felt that modeling “standard” activities would not, in this case, be representative of the reality of a diverse farming population. To accurately incorporate
this diversity into the ELP, each of the different means of producing a particular crop would have to be considered a separate activity. However, to model all these variations would lead to a much larger matrix, beyond what was practically useful in this situation. Therefore, the ORCA framework was developed in its stead, to retain the main concepts of the ELP and also incorporate the diversity of Trinidad’s farming systems. As it was observed that many of the differences in objectives, resources, and constraints were linked to socio-cultural, socio-economic, and life-stage variables, the ORCA framework aimed to show how these social factors influence selection of agricultural and livelihood activities. Use of the ORCA framework and development of social recommendation domains provides a useful alternative to the ELP in socially diverse situations, creating a variant of the methodology for farming systems research and extension (Figure 4-2).

**Social Recommendation Domains**

The ORCA framework uses the concept of recommendation domains introduced in farming systems methodology. Byerlee et al. defined a recommendation domain as “a group of roughly homogeneous farmers with similar circumstances for whom we can make more or less the same recommendation” (as cited in Norman, 1986). Shaner et al clarify the utility of the recommendation domain: “the underlying assumption is that the farmers of households within the same recommendation domains will have similar responses to proposed technologies” (as cited in Norman, 1986).
Figure 4-2. Farming systems research and extension methodology using the ORCA framework for development of social recommendation domains.

Modified from Hildebrand’s model of farming systems research and extension methodology using linear programming.
The ORCA is distinct from earlier conceptions of recommendation domains in that it focuses primarily on internal socio-economic, socio-cultural, and life-stage factors versus external economic and agro-ecological systems. The need to consider social criteria has been debated since the first conceptualization of the recommendation domain. It was recognized that differences in women’s agricultural activity…“are largely the result of cultural variations whose dominant mode of expression may be religious or ethnic or some combination of the two. What is important is that when a certain portion or sub-portion of the population of an area shares a particular cultural orientation, it is possible to make certain assumptions about the kinds of roles women are likely to assume within an agricultural setting…In culturally complex settings, it is important to specify the cultural group or groups to which a recommendation domain applies. This should help clarify and explain what otherwise might be unanticipated responses to a recommended technology” (Alberti, 1988, p. 65).

In a specific situation there will usually be many influential social factors, including socio-cultural, socio-economic, and life stage variables. “Real life situations rarely fall into compartments that vary so neatly along a single dimension. Rather, multiple variables combine and fuse, whether systematically or erratically, resulting in ever more complex relationships” (Alberti, 1988, p. 68). A recommendation domain is never an exact science, as it is a combination of many factors. However, it aims to identify the most influential factors.

Life Stage Dynamics

The addition of social factors to recommendation domains requires that the ORCA framework account for the dynamic nature of these variables. One household, indeed one individual, will pass through different social stages over the course of a lifetime. The
ORCA framework attempts to distinguish between the distinct realities that tend to belong to certain groups at certain points of time\textsuperscript{13}. This is illustrated in Figure 4-3, which depicts SRDs as the dynamic intersection of socio-cultural, socio-economic, and life-stage factors. A specific SRD is one point of intersection of all the possible socio-cultural, socio-economic, and life-stage variables. Because socio-economic and life-stage factors change periodically during an individual’s lifetime (whereas socio-cultural factors are typically constant from birth), one individual will pass through several distinct SRDs. Therefore, an individual’s SRD must be defined at a certain point in time.

This dynamism does not imply lack of predictability, however. Because most societies have more or less culturally defined life cycles, there is often a predictable flow to the stages through which individuals and households pass. Given a thorough understanding of cultural norms, it becomes possible to construct a flow chart depicting the typical passage of distinct households through social recommendation domains over a lifetime (Figures 7-2 to 7-5).

\textbf{Application of the ORCA framework}

My elaboration of the ORCA framework was prompted by my field observations, therefore focused investigation into these factors and relationships began quite naturally. This was an iterative process, as later investigations were continually informed and shaped by earlier findings. I have presented a schematic of the methodology below.

\textsuperscript{13} This is in accordance with ELP methodology, which accounts for the effect that changes in household composition have on agricultural activity over a period of time (Cabrera, 1999; Peralta, 2004).
Figure 4-3. The dynamic intersection of social factors that determines an individual’s social recommendation domain (SRD) at a given point in time.
logically organized into Steps 1-8 (Figure 4-4), to highlight each important aspect of the investigation. Steps 1–3 occurred simultaneously throughout the course of my data collection in Trinidad. The subsequent development of social recommendation domains was the result of my effort to analyze and organize my findings after leaving Trinidad, as described in Steps 4 through 7. Step 8 helped me to identify the bulk of the recommendations that are presented in Chapter 8.

While the following section describes the methods used in my study, there are many other potential uses of this framework. A proposed general methodology is presented in Chapter 8 as a tool for future research.

**Step 1: Observe natural groups and propose social recommendation domains**

I initially observed certain “natural groups” of people who shared social characteristics that appeared to affect their selection of agricultural activities. While every individual was the unique product of intersecting variables, several factors appeared to be most influential. This led me to propose tentative social recommendation domains.

**Step 2: Describe social factors that distinguish between groups**

The second step was to identify which social factors were characteristic of the observed groups of farmers. I divided social factors into three main groups:

- Socio-cultural
- Socio-economic
- Life-stage

**Socio-cultural factors.** Socio-cultural factors are factors such as ethnicity, religion, and gender that influence social practices and roles, cultural norms, family organization, and socially acceptable levels of consumption. These factors are normally inherent to the individual and do not change over a lifetime.
Figure 4-4. Steps to identify social recommendation domains (SRDs)
**Socio-economic factors.** Socio-economic factors are resource variables that influence livelihood opportunities, such as cash-income level, education level, and access to factors of production (land, labor and capital). These variables may change as an individual accumulates or loses resources.

**Life-stage factors.** Life-stage factors are those variables that define an individual at a certain point in time, as they move from childhood to seniority, such as age, marital status, and household composition (number, age and gender of dependents; total household size). These variables appear to change in a fairly predictable manner, as the individual matures.

This information was gathered during both the qualitative and quantitative portions of my research. Participant observation and the development of extended informal relationships with research participants provided important insights into the subtle influences of social factors in an individual’s life. I checked these findings against recent research done by other social scientists (Clarke, 1993; Haniff, 1999; Harry 1980; Mohammed and Shepherd, 1988; Momsen, 1993; Ramjohn, 1975; Safa, 1995; Yelvington, 1993). I then used the surveys to determine the actual incidence of these factors within each region.

**Step 3: Identify objectives, resources, constraints, and activities**

The third step was to identify the objectives, resources, constraints, and activities that tended to be associated with the particular groups. Resources and constraints were often the same factors – opposite sides of the same coin- but were distinguished by their relative abundance (resource) or scarcity (constraint). For instance, the presence of
factors such as cash, labor, mobility, education, information access, etc, represented a resource while their absence or scarcity constituted a constraint.

I relied primarily on qualitative techniques for this portion of the research. Informal interviews were more conducive than surveys to capturing farmers’ candid expressions of their objectives, resources, and constraints. Participant observation gave me the opportunity to directly observe farmers’ range of activities and confirm what I had been told.

**Step 4: Validate and / or modify social recommendation domains**

Using the information gathered in step 2 and 3, the fourth step provided confirmation and refinement of the social recommendation domains proposed in Step 1. Each proposed domain was analyzed for similarities in social factors and ORCA. Valid domains had important similarities within the domain, as well as significant differences between domains. To analyze similarities, I used both qualitative and quantitative techniques, depending on the type of data gathered. Descriptive statistical analysis of survey data revealed similarities in social and demographic factors, indicating logical groups. Content analysis of qualitative data was used to confirm apparent groups by checking for similarities in farmers’ ORCA. Discrepancies were investigated, to check for other influential factors. Modification to major SRD categories was made as necessary, to best reflect the observed similarities. Similarities in factors besides the main categories supported the identification of a valid domain.

Because this analysis was not based primarily on statistics, there was no set level of similarity, to which proposed groups were compared for “significance.” Validity was
instead ensured by analyzing several different types of data (social, agricultural, etc), which revealed convergences.

**Step 5: Model HH life cycles through SRDs**

At this point, it became possible to model the typical passage of distinct households through SRDs, as the relationship between SRDs and life stages became apparent. The development of clear life cycle models further confirmed the validity the SRDs.

**Step 6: Compile factsheets for each social recommendation domain**

The sixth step was to compile all the information gathered in previous steps and create a comprehensive factsheet for each SRD, as well as a textual summary with implications for the agricultural support system.

**Step 7: Identify priority target groups**

Given limitations of time and resources, I was aware that the agricultural support system could not pay equal attention to every group of farmer. Nor indeed was there a need to, as some groups were fairly well served. Therefore, I analyzed the groups to determine which were the most “vulnerable” (economically insecure), the most dependent on agriculture, and had the least current access to agricultural services.

**Step 8: Develop an action plan**

Careful analysis of the findings can help individuals, organizations, and governments target their initiatives, thus creating more positive impact and making better use of limited resources. Projects and policies should enable targeted farmers to meet their priority objectives by enhancing the particular resources whose scarcity was constraining their livelihoods. Development and extension of technologies should match identified resources and constraints.
Organization of the Findings

Beyond providing general academic information, it is hoped that my study can be used as a practical tool by the agricultural support system to improve their services to targeted groups of farmers. While the fullest understanding will be obtained by reading the entire document, specific sections may be of interest to different audiences. Therefore, the results have been organized into chapters for ease of reference. The reader interested in learning more about farmers’ social characteristics can refer to Chapter 4, which describes ORCA Step 1 and 2. Detailed descriptions of farmers’ objectives, resources, constraints and activities may be found in Chapter 6, which covers ORCA Step 3. Chapter 7 describes the identification of the social recommendation domains (ORCA Step 4) and their relation to household life cycles (ORCA Step 5). For readers primarily interested in developing practical programs of research and extension, this chapter also provides an in-depth discussion of each social recommendation domain (ORCA Step 6), and highlights groups recommended for priority action (ORCA Step 7). The beginnings of an action plan (ORCA Step 8) are in Chapter 8.

Summary

In order to fully engage with a diverse spectrum of the farming community, the agricultural support system must recognize how a farmer’s social identity influences agricultural decision-making. The ORCA framework provides one way to conceptualize this relationship. The ORCA framework visually illustrates how social variables influence a farmer’s objectives, resources, and constraints, ultimately affecting their selection of agricultural activities. Social recommendation domains are a way of categorizing farmers based on their socio-cultural, socio-economic, and life-stage variables, and their predicted impact on decision-making. The identification of social
recommendations in a farming population requires a number of steps, but ultimately can enhance the ability of the agricultural support system to recognize high priority groups and respond appropriately to targeted farmers.

In the following three chapters, the ORCA framework is used to identify social variables in two Trinidadian farming communities (Chapter 5), describe farmers’ objectives, resources, constraints, and activities (Chapter 6) and identify social recommendation domains (Chapter 7). The basis for an action plan are presented in Chapter 8.
CHAPTER 5
INVESTIGATION OF SOCIAL FACTORS

Introduction

This chapter describes the socio-cultural, socio-economic, and life-stage variables that define social identity in the Toco and Cedros farming communities. It also incorporates descriptive statistics to demonstrate the incidence of each variable in the two regions. Following the ORCA framework discussed in Chapter 4, I briefly present the results from Step 1 and then describe in detail the results from Step 2.

It is important to emphasize that the importance of this material is not in the overall findings and main themes, but in the details. The objective of this work was not to make a summary statement about the “typical” farmer, but to uncover and highlight the vast differences in individual realities. The fact is that diversity exists, and each aspect of that needs to be recognized and understood. Therefore, it is hoped that readers who seek to work with these different groups will use this as a reference document and identify the specific realities of each group.

In accordance with ethnographic convention (Glesne, 1999), I have interspersed my analysis and interpretations with selected field notes (observations and quotations) that serve to represent the data upon which the findings are based. This approach presents farmers’ realities from their own perspective, based on participant observation and informal interviews over the course of one year. Readers unfamiliar with ethnographic tradition are referred to the section “Telling the Story” in Chapter 3 for an explanation of this presentation of results.
In this chapter, I have also included references to previous research on social identity in Trinidad. Although such material is typically presented as part of the literature review, in my study it is appropriate for inclusion with results, as its collection occurred as part of the research process and informed the subsequent investigation. Therefore, this material actually represents secondary data collected during my fieldwork. Following my initial field observations of social variables, I actively sought pertinent literature to confirm my interpretations. I felt an ethical responsibility to be careful in my representation of another culture, especially given my unfamiliarity with Trinidadian society. Toward this end, I sought literature on social identity in Trinidad, purposefully including works written by Trinidadian, and more generally Caribbean, authors. I relied especially on the works of Barrow (1988, 1997), Clarke (1993), Harry (1980), Haniff (1999), Kanhai (1999, 2000), Mohammed (1993, 1999), Momsen (1993), Ramjohn (1975), Safa (1995), Sampath (1993), and Yelvington (1999. Their validation of my interpretations prevented misdirection in my continuing investigation and was crucial during the verification of my proposed social recommendation domains (see Chapter 7, Step 4).

**Step 1: Observation and Proposal of Social Recommendation Domains**

During my first nine months in the field, I spent the majority of my time in farmers’ fields and homes, trying to understand their farming systems and develop a tentative map of their different activities. Instead of gaining an understanding of a “typical” cocoa farmer, what I observed instead was a social diversity among farmers that appeared to have a counterpart in their agricultural practices. Instead of mapping activities, I began to map farmers. My initial observations led me to propose the following distinct groups of farmers, characterized by distinct objectives, resources, constraints, and activities (ORCA).
• Widows
• Seniors, especially women
• Single women (mostly Afro-Trinidadian but some Indo-Trinidadian)
• Married Indo-Trinidadian women
  • Sub-groups: middle cash-income versus low cash-income
• Indo-Trinidadian couples (these were mostly seniors)
• Afro-Trinidadian church couples
• Young Indo-Trinidadian men (mostly single)
• Married men who farmed alone

What I realized from first analysis of my observed groups was that several social factors appeared to distinguish most of these groups: age, marital status, ethnicity, gender, and farm gender$^{14}$. A few groups were also defined by socio-economic level and religion. These would become the basis of my social recommendation domains, which I investigated and modified after more extensive exploration of these groups and their diverse realities.

**Step 2: Investigation of Social Factors**

In seeking to understand what made these observed groups distinct, I analyzed the social factors that most influenced each individual’s (and group’s) ORCA. For ease of analysis, social factors are divided into the following three categories: socio-cultural, socio-economic, and life-stage. Each of these categories is then subdivided into the specific variable. The most influential socio-cultural factors are ethnicity, religion, and gender. Important socio-economic factors are economic objective, class, education, and land. The primary life-stage factors are marital status, age, and household size. These are summarized in Figure 5-1. Each of these is discussed in detail below, based on personal observation as well as previous scholarship.

$^{14}$ Farm gender refers to the household configuration of agricultural labor and responsibility: a female farmer, a male farmer, or a farm couple.
Although these are examined individually, it is important to remember that all of these factors interact, so that the ORCA of any individual is specific to that particular combination of factors at that point in time (Figure 4-3). Most socio-cultural factors are relatively stable, although some factors, such as religion, may change over time. Socio-economic and life-stage factors change throughout the life of the individual, so that a particular farmer will belong to different recommendation domains during their lifetime.

**Socio-Cultural Factors**

Socio-cultural factors influence social practices and roles, cultural norms, family organization, and socially acceptable levels of consumption. These factors are normally inherent to the individual and do not change during their lifetime. In these two regions of Trinidad, the most influential socio-cultural factors were identified as ethnicity, religion, and gender. These three factors, separately and in combination, have a great influence on an individual’s objectives, resources, and constraints. While gender, on its own, does not constitute a “culture,” it exists as a distinct factor when defined by ethnic group and religion. A fourth category, farm gender, was developed to reflect household configuration with regards to agricultural labor and responsibility\(^{15}\).

\(^{15}\) Farm gender is not purely a socio-cultural factor, as it also reflects socio-economic and life stage influences and thus may be dynamic over an individual life span.
Figure 5-1. Social factors investigated as possible determinants of farming systems in Trinidad
Ethnicity in Trinidad

Trinidad is unique among the Caribbean islands in that its population is divided almost exactly between two ethnic groups\(^{16}\) (37.5% Afro-Trinidadian, 40.0% Indo-Trinidadian; CSO, 2001), with two distinct histories, settlement patterns, and cultures (Clarke, 1993). When African slaves were emancipated in 1834, they faced government policies intended to restrict their purchase of land and thus resorted to squatting on the abundant and largely uncultivated Crown land in the interior (Brereton, 1981). Although squatting was illegal, lack of roads hindered enforcement, and African villages developed in the less accessible areas of the north and south (Harry, 1980). It was not until 1869, under Governor Robinson, that small parcels of land were made available for purchase at affordable prices, providing small farmers legal access to Crown lands (Brereton, 1981). After 1869, many indentured Indian men\(^{17}\) accepted parcels of former estate land in lieu of a return passage to India, and settled in the flatter lands of central and southern Trinidad (Harry, 1980). Between 1880 and 1900, many more Indian men purchased Crown land under Governor Robinson’s land policies (Brereton, 1981).

Many rural villages maintain this historic division today, with almost complete ethnic separation (Yelvington, 1993). This geographic separation of ethnic groups is reflected in the composition of the two regions studied, as the sample population (n=70) in Toco is 96% Afro-Trinidadian and in Cedros (n=72) is 94% Indo-Trinidadian. This has led to the maintenance of distinct cultural norms, which is especially apparent in rural areas (Yelvington, 1993).

\(^{16}\) Minority ethnic groups not considered in this study are of Chinese, Middle-Eastern, and European descent.

\(^{17}\) Indentured Indian women were not allowed to get land but could accept money in lieu of their return passage (Philips-Lewis, 1994).
While culture encompasses many variables, my study is most concerned with the impact that ethnic norms have on the organization of families and gender roles. Even while describing them, it is important to remember that these are not absolutes, but intersect with all other social variables to create “distinctions in meaning and attitudes towards specific family practices across class, race, age, gender, even religious affiliation” (Barrow, 1988, p. 155).

**Afro-Trinidadian family structures.** Afro-Trinidadian family structures bear many similarities to that of other Afro-Caribbean societies, which have been variously interpreted by foreign anthropologists and more recently local ethnographers. While the understanding of these patterns continues to evolve, the basic structures are well documented. “The fundamental principles of the Afri-Caribbean family system include matrifocality and extensive, enduring kinship networks. The closeness of the mother-child bond contrasts with relatively loose and segregated conjugal relationships. Caribbean visiting and common law unions and high percentages of children born out of wedlock (60-70%) have persisted” (Barrow, 1988, p. 156). The family may be flexible in space and time, with partners and households changing over the years. For individuals not bound by marriage, the most secure bond is that between mothers and children. In 2000, women headed 38% of Afro-Trinidadian households (CSO, 2001).

Easter sports are a time for children to participate in games and competitions, with prizes for all. Parents, primarily mothers and grandmothers, settle under a tent to watch their children in the “march past”, frog races, gossip races, and other inventive versions of the classic footrace…. The day goes by, and the children pile their grandmothers high with prizes, mostly plastic dishes and school supplies that are all examined and treasured (Toco).

One notable exception to this is the fundamental importance of marriage to Afro-Trinidadians of the more active church sects (Barrow, 1988). These households are
likely to be stable over time and centered around a nuclear family. Some churches endorse fairly strict gender roles, and women may be more likely to remain primarily in household activities.

**Indo-Trinidadian family structures.** For Indo-Trinidadians, the family is the bedrock of culture and tradition and is preserved, sometimes fiercely, against outside influences. “The family (is) …the central construct in the East Indian identity” (Haniff, 1999, p. 24). Marriage is an essential institution, embarked on early in life (Ramjohn, 1975), and divorce or childbirth out of wedlock is severely sanctioned (Barrow, 1988).

Here, they tell me, divorce is still very rare, even if the husband and wife fight all the time, or if “she gets beaten.” I ask whether they see this strict adherence to marriage as a good thing; they reply emphatically yes (Cedros, Indo-Trinidadian farm couple).

Traditionally, the family is patriarchal, with each member having different and honored roles within the family (Barrow, 1988, Mohammed, 1993). In 2000, 81% of Indo-Trinidadians households were male-headed, whereas only 19% were female headed (CSO, 2001). “In most households there are distinct masculine and feminine tasks, and these have been perpetuated from generation to generation, with few deviations” (Harry, 1980, p 129).

WA rises at 4, to cook food before the children leave for school. She cooks three meals a day, in between the rest of her work. I ask her daughter if she likes to cook; she says not really, but WA says, “She has to learn” (Cedros, Indo-Trinidadian farm couple).

**Religion in Trinidad**

On the whole, Trinidadians are a very devout people. Only 4% of surveyed farmers did not follow any religion. Although the practice of religion is not always strictly observed, the fundamental moral and religious tenants appear to permeate much of life. In both communities, only slightly more women than men reported a religious
affiliation (97% versus 95%). However, women were observed to be generally more active in the religious community, as evidenced by church attendance and participation in religious activities.

**Religion among Afro-Trinidadians.** The apparent religious homogeneity of the predominantly Christian Afro-Trinidadian population is belied by their division into numerous denominations. In my study sample (n=81), 80% of participants were Christian, 12.3% followed Rastafarianism, and 7.4% didn’t practice any religion. The Christians belonged to six different churches: 1% Jehovah’s Witness, 2.5% Pentecostal, 6% Baptist, 9% Anglican, 13.6% Roman Catholic, and 38% Seventh Day Adventist (SDA). The high percentage of SDA farmers in my study sample contrasts with the county census, which records only 15% of the total population as being SDA (CSO, 2001). While this may be an artifact of the networks that I was introduced to, it could also reflect a link between that particular denomination and agriculture. I believe it is due to a combination of these factors, because even non-SDA farmers often led me to SDA in their introductions. The SDA is one of the most active and dynamic churches in the area, with strong linkages between members. Members often express a religious affiliation with agriculture.

Before they start to pick, MA reminds the other farmer to say prayers. He replies, “You didn’t pray before you left home?” But nonetheless he removes his cap and asks God’s blessing in their harvest. The two men stand with bent heads before this distant tree, having traveled so far to reap the fruit, and still recognizing it as a blessing (Toco, Afro-Trinidadian male farmers).

Most of the churches also hold “Harvest” celebrations at least once a year, to which farmers donate crops to raise money. These are popular events, with music and cooked food, and draw people from all parts of the island.
The church also has an influence on gender roles, as observed in the national statistics on head of household in different denominations. Anglicans, Baptists, and Methodists have the highest percentage of female-headed households (40%), Roman Catholic and SDA are intermediate (35%), and Pentecostal is the lowest (30%) (CSO, 2001).

The other distinct group of Afro-Trinidadians is the Rastafarians. Although considered a legitimate religion for legal purposes, Rastafarianism is also a cultural, political, and ideological movement (Murrell, Spencer, and McFarlane, 1998). Rastafarians are an amorphous group, as there is no one text or canon that dictates norms and behaviors. Individuals interpret their beliefs according to their own experiences and predispositions; some are decidedly secular while others approach a mystical attitude (Erskine, 2005). Some Rastas even belong to Christian churches and endorse a Rastafarian “lifestyle” instead of religious doctrines. However, as a group, it usually distinguishes itself from the Christian church, and has an associated lifestyle and moral “reasoning.” Most significant to my study is the focus of the Rastafarian on nature – and thus agricultural pursuits – as a fundamental part of their lifestyle (Erskine, 2005).

“Agriculture is life itself…our work from creation. From that we leave and do other (work), but supposed to respect it as that” (Toco, Afro-Trindadian male farmer).

**Religion among Indo-Trinidadians.** East Indians were predominantly Hindu at the time of immigration, with a small minority of Muslims. However, the proselytizing effect of successive waves of Christian missionaries has greatly influenced religious affiliation among Indo-Trinidadians. The 2000 census records Indo-Trinidadians as 60% Hindu, 25% Christian, and 15% Muslim (CSO, 2001). This is comparable to my study
sample (n=81), which was 53% Hindu, 40% Christians, and 7% Muslims. Only 1.3% of participants didn’t practice any religion.

Several older villagers felt that the Christian influence in the area had created divisions between Christians and non-Christians within the community. However, most people express no difficulty in accepting or even worshipping across religions.

WA has more than agriculture on her mind today. She tells us that her son, a Hindu, is getting married to a Muslim woman. Her friend, a Christian, reassures her “that is nothing” as long as they have good work and are able to support themselves (Cedros, Indo-Trinidadian farm couple).

Many families have members in different religions, and some change religions periodically. Although the older generation is more likely to be Hindu, there is an acceptance of the exigencies that had made a conversion to Christianity beneficial, such as church-based education. Nor is the trend only towards Christianity; during my stay several young people converted back to Hinduism.

This ease of transition between Christian and Hindu, perhaps stemming from the intermingling of family, reveals an essential cultural unity that over-rode, for the most part, any differences in social and gender norms. “To be Indian (in Trinidad), whether one was Hindu, Muslim, or Christian, was still to identify with symbolic aspects of Indian culture” (Mohammed, 1999, p. 68). To me, as a foreigner, there are very few observable distinctions between Hindu and Christian households within the Indo-Trinidadian community. Both maintain the essential focus on the family that so distinguishes Indo-Trinidadian society and the close association of the female with the household. “The overarching influence of Hinduism and Islam on the qualities expected of them (women) was not considerably tampered with (by Christianity)” (Mohammed, 1999b, p. 90). This is reflected in similar family structures across religions. Both Hindu
and Muslim families are predominantly male-headed (80-85%). This is comparable to Presbyterian households\(^{18}\), which have the highest percentage (80%) of male-headed households of any Christian denomination (CSO, 2001).

Within the region studied, Muslims tended to live in distinct areas, which may or may not reflect an ideological as well as a geographic separation from the other religious groups. While Christian and Hindu lived intermingled in the villages in which I did my initial work, I met no Muslim farmers during the nine months of my qualitative research. It was only during the final months of my survey, when I extended my research to the adjacent villages, that I encountered a Muslim community in the village of Chatham. Therefore, I did not have the time to develop ongoing relationships with any Muslim families, and so cannot reflect their viewpoints. I also did not interview any female Muslim farmers. Although this may indicate lower female participation in agriculture in Muslim households, it could equally reflect the fact that I simply wasn’t introduced to any women. In other communities, identifying female farmers required persistence and time, a resource I did not have at that point in the research.

**Gender in Trinidad**

While Trinidad is a very cosmopolitan society, saturated with exposure to both Western and Eastern media, many rural communities maintain traditional social norms and gender roles. Young men and women strive to negotiate among various pressures to create an acceptable social identity (Sampath, 1993).

In recent times, Trinidad has focused substantial resources on improving the opportunities available to women. As a result, young women often surpass men in

\(^{18}\) The Presbyterian church in Trinidad is predominantly Indian.
academic achievement and increasingly hold positions of strategic importance. However, women face contradictory messages from a nation that expects much of them, yet maintains patriarchal norms that conflict with the attainment of those goals.

While men have traditionally held positions of power in both the household and the nation, recent research has focused on the increasing vulnerability of young men. Faced with women’s increasing achievements, young men are increasingly uncertain of their role in the family, in the workplace, and in a globally-defined masculinity (Barrow, 1988; Safa, 1995; Yelvington, 1993).

**Afro-Trinidadian gender roles.** While the matrifocal structure of Afro-Trinidadian families has long been recognized, the understanding of gender roles within that system has continued to evolve. Although households are often centered around a stable female figure, the society itself is patriarchal, with men having relatively more status and opportunities. “Caribbean gender relations are a double paradox: of patriarchy within a system of matrifocal and matrilocal families; and of domestic ideology coexisting within the economic independence of women” (Momsen, 1993, p 1).

The instability of conjugal relations in many households led to initial depictions of Afro-Caribbean women as economically insecure and dependent. This was soon challenged by Caribbean feminist writers and “replaced by images that emphasized black women’s familial authority, economic and personal autonomy, (and) gender equality” (Barrow, 1988, p. 158).

She asked me if I was married. I told her I was not, and she nodded knowingly, yes, you can’t be free like that when you are married. She made a strong statement about “not needing men.” She told me both from her experience and that of another woman, who has kept planting and replanting as she changes men, “Men are not profitable” (Toco, Afro-Trinidadian female farmer).
However, later studies revealed that female headed households tended to be associated with “vulnerability, poverty, and on occasions, the absence of kinship network support” (Barrow, 1988, p. 158). Massiah, in her 1983 study, described these households as “the poorest of the poor…firmly placed among the disadvantaged sections of the Caribbean population” (p. 34). This is significant in Trinidad, as the 2000 census listed 38% of Afro-Trinidadian households as female headed. Even more significantly, 19% of all households were single parent female headed, versus only 5% that were single parent male headed (CSO, 2001).

She lives in a little house set back from the main track ... She is very old and very poor. Though she cannot farm as she once did, she still actively cultivates a plot of land. Her husband is blind, so she works the land alone to support the family – her husband, herself, one son, and three grandchildren (Toco, Afro-Trinidadian female farmer).

Working class Afro-Trinidadian men have commonly been depicted as irresponsible or absent, spending their cash-income on public recreation and personal gain, and contributing little to the household. Other studies portrayed men as a marginalized population, “unable to fulfill their functions as ‘husbands’ and fathers” (Barrow, 1988, p.159). Continued concern has been expressed over the social status of men, particularly the declining educational achievement of boys who are now perceived as an “at risk” population. However, more recent work has offered an alternative perspective through its examination of the contributions men make to the broader kinship network, in their roles as “conjugal partner, son, grandfather, brother and the like” (Barrow, 1988, p. 159). There is also a need to recognize the many men who have accepted the strictures of the church, and fulfill, with great commitment, their role as husband and father.
**Indo-Trinidadian gender roles.** Traditionally, East Indian women had certain clearly defined gender roles: “the responsibility of a girl child to parents, the obligations to both parents and husband, the duties expected of a woman and a wife, the role of mother” (Mohammed, 1993, p. 230). For women this has meant a distinctive place in the household, which has been both a constraint and a resource.

The vestiges of the caste system, although largely dormant, remain evident in the definition of social status and appropriate behavior for women (Mohammed, 1993). It is considered socially desirable for women to work solely within the household (Haniff, 1999). At times, this creates a struggle between economic necessity and desired social status. For lower resource families, there may be no choice, and women will work, either in the garden or off-farm. However, as wealth is acquired, there is a desire and a tendency for women to return to the domestic realm. “It was a mark of success for a wife not to work. These women were not really working then, they were just helping their husbands” (Haniff, 1999, P. 23).

They “started small,” without much, and worked hard to build up the family. At that time, she used to work in the garden every day. A neighbor lady used to ridicule her for “how her husband kept her.” Her neighbor did not work at all outside of the house and regarded her garden work as low class (Cedros, Indo-Trinidadian farm couple).

While women may aspire to “stay home,” they can also be restricted to that domain, and become almost completely invisible outside of it. “The family is the paramount arena for women’s identity. It is in this arena that women came to dominate and it is here that all their work, both economic and social, was subsumed. They became housewives, they became mothers, they became invisible, they became silent…It was her husband that was seen as the head of the family, and even if she worked equally with him, her work had now become invisible” (Haniff, 1999, p. 22).
She says that women, especially Indo-Trinidadian women… are expected to stay home and take care of the family, and yet their work is not appreciated. It is simply assumed as their natural role and duties. …Although she says there is a need for women to be more independent and assertive, she also recognizes how deeply ingrained those attitudes are in herself. She still “takes out” (serves) food for her husband and son…and finds it strange that her daughter does not serve her husband more (Cedros, Indo-Trinidadian farm couple).

Although East Indian women may have struggled within their prescribed roles, they have equally found fulfillment in doing that work. As Mohammed wrote in her ethnographies of two East Indian women, they “have forged a happiness out of a given set of social circumstances. They maintain that they have no regrets of unfulfilled ambitions for themselves but they have found satisfaction in loving their husbands and families, the gender role assigned them within their ethnic group. They took pride in carrying out what they saw as their responsibility” (1993, p. 233).

Today I have a delightful meeting with a woman who exemplifies the ingenuity and industriousness of many of the East Indian women farmers I have met. As she tells me about her life, I hear, encapsulated in one story, many of the traits and circumstances that I have observed in the women here, including their often deferential attitude towards their mate, balanced by a real appreciation of them as a companion and support (Cedros, Indo-Trinidadian farm couple).

It is important not to equate this fulfillment of expectations with passivity, as the East Indian woman remains very much a distinct individual. The challenge is to understand how individuality is expressed in a communal-based society. “If the woman shows traits of individualism in public, her behavior is seen as corrosive to the family unit. In fact, women are quietly, and of necessity, entering the public domain everyday in Trinidad…without the family falling apart” (Haniff, 1999, p. 29).

She volunteers more about (her) relationship (with her husband) than ever before. She expresses mixed emotions … She says that no man bosses her around, and that she quarrels with him when he tells her to fetch him things. However, she later calls him “the boss”…and says that she prefers when he is not around, because then she can work how she likes (Cedros, Indo-Trinidadian farm couple).
Indo-Trinidadian men have faced rather harsh scrutiny as the dominant and often domineering figure in the household. However, the reality is more complex. Men, as well as women, inherit a societal expectation of patriarchal norms (Parsad, 1999), which they translate into their own family relations (Sampath, 1993). At its best, men are socialized to be stable and secure partners, making a lifelong commitment of time and resources to their family (Mohammed, 1999). This is exemplified by the many strong couples who describe themselves as “teams,” each fulfilling a vital role in the maintenance of the family.

She enjoys gardening as a companionable activity with her husband. She stresses to me that they work as a team, and says, with pride and gratitude, that her husband will support her in everything. He will buy what she wants and bring it (Cedros, Indo-Trinidadian farm couple).

At its worst, male alcoholism may fuel the expression of male dominance in acts of domestic violence (Haniff, 1999; Mohammed, 1999). Social pressure often limits the public exposure of these events, so that problems may be endured and passed on from one generation to the next (Parsad, 1999). However, many Indo-Trinidadians abhor this violence and understand that such actions constitute a threat to the well-being of the entire family.

I ask about the perception that women in Trinidad get beaten. She replies, “yes, yes, yes,” she knows this from her own experience. From what she hears in the village, it is still very common. She says that women do not like to admit it. If they complain to their parents, most parents will tell them to return to their husbands and not intervene (Cedros, Indo-Trinidadian farm couple).

Whether Indo-Trinidadian gender roles will remain as distinct in the future is unclear. Young people have increasing exposure to other social norms, however there is also a resurgence of religious fundamentalism that may ensure the continuity of traditional gender norms (Haniff, 1999).
**Gender and dependents.** Regardless of ethnic group, the most important factor affecting women’s lives is their responsibility for dependents, both children and adults. Having children determines the timing and nature of women’s participation in agriculture. For many women, responsibility for dependents makes agriculture an economic necessity. This is reflected in the age range of female farmers. For most women surveyed (n=72), agricultural participation was low before age 35, peaked between 35-50 and declined sharply after 65, in contrast to men’s more stable involvement through their lifetime.

She acquired livestock and started working this piece of land several years after the birth of her last child. When her children started school, she started working in the market to make some extra money. The cattle “really helped” as she would sell one as needed to provide cash-income... In the last few years, with all her children grown, the need has been less and she has started cutting back the herd (Cedros, Indo-Trinidadian female farmer).

Responsibility for dependents also affects women’s daily schedules. Women with young children are closely bound to the house and must either cultivate backyard gardens or else work in the garden in the early morning and late evening. Women with school age children often schedule their garden work to coincide with the school day. Some women make use of female relatives as caretakers to allow them to work outside the house.

She rises at 2 in the morning to cook and clean and take care of her grandchildren. If she gets all that done before the sun comes up, she may iron clothes until she can start working on the farm. ... She is glad to have the children’s mother home again, because now she is free to work more on the farm (Toco, Afro-Trinidadian female farmer).

Caring for dependents can subsume even gender norms, as exemplified by the lifestyle of the only single father I met. He had assumed sole responsibility for the rearing and education of his son.
The mother left when the child was 9 months old. He says that, since then, “I have to be everything, Mom and Dad, cooking and washing.” Like most mothers, he schedules his hours in the garden to match the school day, working from 9 – 2. He supplies about half of their household food needs from the garden. When he needs to travel to the market, he will “pack a bag” and carry the boy with him. (Toco, Afro-Trinidadian male farmer).

This male farmer mimicked, in almost exact detail, the lifestyle and priorities of a woman farmer, due to his assumption of primary responsibility for his child. However, this was an exceptional case, as in the vast majority of households interviewed, women held primary responsibility for dependents. Therefore, for the purposes of my study, women are assumed to be the primary caregivers.

Farm gender

During the course of my study, it became evident that there were several different household configurations in regards to agricultural labor and responsibility, each with distinctive ORCA profiles. In some cases an individual woman or individual man farmed alone, even if they were in a conjugal relationship. In other cases, both partners worked in the garden. The main distinction appeared to be whether the farmer was solely responsible for agricultural activities or shared those duties and decisions with a partner. These variations were recorded as farm gender and comprise the following categories:

- Female farmer – woman who is solely responsible for agricultural activities, regardless of marital status.\(^{19}\)
- Male farmer - man who is solely responsible for agricultural activities, regardless of marital status.
- Farm couple – man and woman who share responsibility for agricultural activities, regardless of marital status.

\(^{19}\) It is important to note that the farm gender category is independent of marital status. Later analysis revealed that SRDs were in fact defined by the intersection of both farm gender and marital status. This is presented in greater detail in Chapter 7, step 5.
These configurations arose for different reasons, some cultural and some economic. However, regardless of origin, farm couples had a different profile of agricultural resources, constraints, and activities than individual farmers. Previous research has established that the farm household is not an undifferentiated cooperative unit, since the individuals within a household have different resources and constraints (Dwyer and Bruce, 1988). However, farm couples cannot be understood merely as the sum of two individual farmers, as they also share a cooperative agricultural resource base, founded on social relations. Farm couples thus comprise a distinct form of household, with a distinguishing ORCA and farming system and should not be disaggregated to an artificial level of individuality.

**Female farmers.** The female farmer category includes all women who are solely responsible for agricultural activities, regardless of marital status. In both ethnic groups, approximately half of all the women interviewed (n=72) fall into this category. While this finding is expected of Afro-Trinidadian women, it is somewhat surprising for Indo-Trinidadian women, as the common perception is that Indo-Trinidadian women do not farm by themselves.

Ethnic differences are reflected in the marital status of female farmers (Figure 5-2). Approximately half of Afro-Trinidadian female farmers are single, while only a third are in some sort of conjugal relationship (10% married and 20% common law). This situation is reversed for Indo-Trinidadian female farmers. The majority (60%) is married, while only 15% are single. Interestingly, in both ethnic groups, one quarter of female farmers are widows. This may indicate that, under those circumstances, economic necessity outweighed cultural differences.
Regardless of ethnicity and marital status, female farmers share some important similarities. In most cases, women’s involvement as the sole agricultural actor is an indication of high levels of economic necessity combined with low levels of resources. Whether single, common law, married or widowed, female farmers tend to function at the lowest socio-economic level and are concerned primarily with survival\textsuperscript{20}.

Single women bear sole responsibility for providing for their household and thus rely heavily on agriculture for their livelihood. Women in common law relationships, faced with an insecure relationship, often have similar levels of household responsibility as single women. In many cases, they may have a higher resource demand, as they tend to have more dependents. The involvement of married women as the sole agricultural actor also indicates economic necessity, as it is considered socially desirable for women to remain within the household. However, if the husband’s off-farm cash-income does not provide sufficient support, women will work in the garden. The high incidence of

\textsuperscript{20} In a few cases, female farmers were involved in agriculture primarily out of a love for agriculture, not out of economic necessity. However, these were the minority of cases.
Figure 5-2. Farm gender and marital status of women in agriculture
widows as female farmers also supports the idea of agriculture as a livelihood of survival. In all of these cases, involvement in agriculture is a necessity, as one of the few economic alternatives available to women.

Female farmers exhibit important similarities in their ORCA profile. They tend to have a relatively high number of dependents as compared to male farmers (1-2 more dependents per household, across all marital states) thus they have a higher consumption requirement. Female farmers tend to be constrained by labor, as they have to divide their time between the household and the garden. Their agricultural production is limited to what they can cultivate themselves, as they usually cannot afford hired labor. Any outside labor networks tend to be primarily composed of other female farmers. Their isolation is compounded by their limited mobility, from childcare responsibilities as well as cultural norms. Even within the community, female farmers are often unrecognized by other farmers.

She tells me that we can start visiting farmers next week and begins naming people, so-and-so with the watermelon, so-and-so with pigs, etc. I mention again my specific interest in women farmers, and she says, rather doubtfully, “Most ladies farm with their husbands” (Cedros, Indo-Trinidadian farm couple).

Because the man is typically the public figure, especially in Indo-Trinidadian families, female farmers are often invisible outside of the household. Thus their sources of new information are severely limited.

Female farmers not only contend with relatively low household resources and limited community networks, but also report the lowest level of access to outside agricultural resources. Female farmers, whether single, married, or widowed, are the least aware of, and the least recognized by, the formal agricultural support system. While
most of the female farmers are aware of the farm registration program, none are registered, despite the fact that many of the Indo-Trinidadian women are working private land. Therefore, no female farmers have benefited from the agricultural incentive program that provides subsidies to registered farmers for agricultural inputs. Female farmers reported virtually no interaction with the head agricultural office at Centeno, while male farmers and farm couples tended to rate their relationship quite favorably.

**Male farmers.** The male farmer category includes all men who are solely responsible for agricultural production, regardless of marital status. In both ethnic groups, approximately two-thirds\(^{21}\) of all men interviewed (n=99) are farming on their own. The fact that more men than women (65% versus 50%) are sole farmers may indicate that men have access to a greater resource base than women do, which allows them to engage in agricultural production.

As with female farmers, the major difference among ethnic groups is in the prevalence of marriage, (Figure 5-3) with Afro-Trinidadian male farmers being more likely to be single (40%) than Indo-Trinidadian men (20%). Single Indo-Trinidadian men are predominantly young men who have not yet entered into marriage, while single Afro-Trinidadian men are of all ages and may have moved in and out of conjugal relationships. Indo-Trinidadian male farmers have a much higher incidence of marriage (70%) than Afro-Trinidadians (40%). However, if married and common law relationships are grouped together, it is instructive to note that male farmers have a similar incidence of conjugal relationships, regardless of ethnicity (70% Indo-Trinidadian, 60% Afro-Trinidadian).

\(^{21}\) The actual percentage in the population may be slightly higher than this, due to a sampling bias that over-selected men in farm couples. See “Identifying participants” in Chapter 3.
Figure 5-3. Farm gender and marital status of men in agriculture
Interestingly, the percentage of male farmers who report being widowers (0-10%) is much lower than that for women (25%). Fewer than 10% of Indo-Trinidadian male farmers are widowers. No Afro-Trinidadian male farmers report being widowers, either because of the lower incidence of marriage or because widowers identified themselves as single. This gender difference may reflect the fact that men are not as economically vulnerable as women are when their spouse dies and thus do not need to turn to agriculture for survival.

Male farmers, regardless of ethnicity or marital status, are typically characterized by a higher level of resources than female farmers are. While a woman farming alone often signifies a lower resource household, a man who farms alone usually has somewhat more economic security.

Within the male farmer category, single men are potentially the most economically insecure, as they only have access to one cash-income. However, while single women have to divide their time between household and garden, single men often rely on female relatives (mothers, sisters etc.) to provide their domestic needs, enabling them to focus solely on agricultural activities. Married and common law men who farm alone likewise benefit from their partner’s domestic labor. If their female partner works exclusively within the household, this indicates an economically secure household, since the women is not required to engage in any cash-income generating activity. If their female partner works off-farm, this indicates the existence of a better economic opportunity off-farm, providing a cash-income diversity that enhances household security.

Male farmers have important similarities in their ORCA profile. They typically have lower consumption requirements than female farmers and farm couples, due to a
smaller household size. Whether single or in a relationship, male farmers consistently report fewer dependents than female farmers or farm couples. Male farmers tend to be less limited by labor availability than women, as few men bear responsibility for household chores. Men are also much more likely to share agricultural work with each other or to hire labor and are less constrained by cultural definitions of appropriate work. Being more mobile and visible in the community, men benefit from public resources and information more than women.

Most male farmers have a high level of access to agricultural resources, equivalent to that of farm couples. With the exception of male farmers in common law relationships (none of whom are registered), a quarter to a half of male farmers are registered. Almost all male farmers are aware of the agricultural incentive program, and a third or more of Indo-Trinidadian men have received some form of farm subsidy\(^\text{22}\). Male farmers also report a moderate amount of interaction with Centeno and a high rate of satisfaction with their services.

**Farm couples.** Farm couples include all male and female partners who share responsibility for agricultural activities, regardless of marital status. One third\(^\text{23}\) of all men interviewed and one half of all women interviewed are part of a farm couple. The higher percentage of women who farm as part of a couple may indicate that women are less able to pursue an agricultural livelihood independently, due to greater constraints

\(^{22}\) Because there was no active district officer in Toco, no Afro-Trinidadian farmers reported receiving subsidies.

\(^{23}\) The actual percentage in the population may be slightly lower, due to a sampling bias that over-selected men in farm couples. See “Identifying participants” in Chapter 3.
and/or fewer resources, and thus require the addition of male resources to make
agriculture a feasible activity.

Farm couples should not be interpreted as totally cooperative units, with perfect
sharing of agricultural resources and responsibilities between partners. However, neither
can they be understood merely as the sum of two separate farmers. The farm couple
configuration changes the ORCA profile of each individual, and therefore the household,
by creating the opportunity for resource sharing between partners. The actual level of
cooperation and interdependence results from a continual negotiation of roles and
responsibilities and lies somewhere on the continuum between perfect cooperation and
total independence.

Ethnic differences are visible in the prevalence of marriage, the age of the farmers,
and the relative independence of the partners. While Afro-Trinidadian farm couples are
equally as likely to be in common law relationships as to be married, all Indo-Trinidadian
farm couples are married (Figures 5-2 and 5-3).

Afro-Trinidadians farm couples are fairly young, with 75% of surveyed couples
(n=14 couples) younger than 50. This may reflect economic necessity, as couples at that
age have a high number of dependents at home. Some couples work the same land and
same crop, while others maintain separate gardens, reflecting a high level of
independence between partners.

She said it was rare for both partners in a couple to farm together. Usually women
or men, even those in married couples, worked on their own (Toco, Afro-Trinidadian female farmer).

This is quite distinct from Indo-Trinidadian farm couples, who traditionally have
worked together in the fields. As reported by Harry in her 1980 survey, “Indian families
appear to favor close kinship ties and family members often work together. Differences in
time of day worked by male and female farmers are few, and spouses usually ‘garden’
together” (P 117). Today this configuration is especially observable among older couples.
Of the sample group (n=16 couples) 75% are older than 50.

As soon as she was married, she moved to her husband’s land and farmed alongside
him. She worked with him in the field, doing “everything” until 3 years ago, when
her heart started giving her trouble (Cedros, Indo-Trinidadian farm couple).

Regardless of ethnic differences, farm couples generally report a higher level of
food security than individual farmers. The household benefits from greater access to
agricultural labor, which may be utilized in a variety of ways. Agricultural activities are
often more diversified, which provides greater ability to cope with market fluctuations
and increased food security. Farm couples also benefit from a relatively high level of
access to organizational resources, similar to, and occasionally greater than, male
farmers. With the exception of common-law couples, one half or more of farm couples
are registered. One half of Indo-Trinidadian couples have benefited from the agricultural
incentive program. In most cases, farm couples report more frequent and more
satisfactory relationships with the Extension system than female farmers do.

Being part of a farm couple appears to be especially beneficial to women, as it may
increase their access to resources that are typically constraining for females. Women in
farm couples exhibit increased mobility. Many women, in the company of a male partner,
will cultivate distant fields that are inaccessible to them as single female farmers.

MA has offered to take me to see his land…I ask whether his wife will come as
well. He replies, “She is a farmer from long time; if I go she will be there” (Toco,
Afro-Trinidadian farm couple).

Women in farm couples may also have improved access to public agricultural
resources. While an Indo-Trinidadian female farmer may be unlikely to attend a public
meeting on her own, she may attend with a partner, or she may later access the
information through her partner. Women in farm couples are more likely to have access to hired labor and/or to benefit from male labor exchanges. While a woman potentially has more to gain from partnership than a man does, the reality is that women typically do not share equitably in household resources. However, they do exhibit fewer constraints than female farmers, indicating some gain from the association.

**Socio-Economic Factors**

Socio-economic factors are resource variables, such as cash-income level, education level, and access to factors of production (land, labor and capital) that influence livelihood opportunities. These variables may change as an individual accumulates or loses resources. In my study, the most influential socio-economic factors were identified as economic objective, land access, and educational level.

**Economic objective level**

It was not possible to obtain exact information on farm cash-income for several reasons. Many farmers do not keep records and reported having “no idea” of their annual cash-income\(^{24}\). Even when an attempt was made to average cash-income per crop on a weekly basis, many farmers expressed doubts as to the validity of their estimates. This doubt was confirmed during subsequent analysis, as there was an extremely wide variance in reported cash-incomes, even between farmers with similar cultivation practices.

In addition to the dubious validity of reported cash-incomes, there was a social restraint that prohibited inquiry into income in many cases. This was especially true

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\(^{24}\) Farmers in Trinidad are not required to pay an annual income tax, therefore many do not keep records of farm income and expenditures.
during the survey portion of the research, when interactions with farmers were very limited, and it seemed inappropriate to follow such lines of inquiry.

Nonetheless, it was important to differentiate farmers on the basis of their resource level. Thus, categories were developed to reflect the “economic objective” levels that were expressed by farmers, namely survival, security, or profit. The economic objective level of an individual or household is not a constant, but changes as resources are accumulated or lost. Economic objectives are in large part determined by household composition, which incorporates not only the constraint of consumption requirements but also the possibility of labor resources, differentiated by gender and age. "One may find that the ‘poor’ household one encounters is not an unchanging member of a lower class than its rich neighbor, but only an image of that neighbor's future; the spatial array of rich and poor families may represent not so much different strata of society as different temporal phases in the developmental cycle of the labor reserve household." (Ferguson, 1990, P.133).

**Survival.** For individuals and households who operate at the “survival” level, the primary objective is provision of daily needs. Their immediate concern is food security. Other basic needs such as housing and clothing may be at substandard levels.

She works incredibly long days. Her daughter tells her she has “too many projects” but she says that her daughter doesn’t realize that her many (agricultural) “projects” are needed simply to buy soap, shampoo, etc so they can “take a bath” (Toco, Afro-Trinidadian female farmer).

At this level, resources are very low, and there is no security for difficult times. Hardships must be simply endured and there is little ability to plan for the future. Often, these farmers have few economic alternatives, due to limited education or employment opportunities. In these situations, farmers must rely heavily on social capital to survive,
and yet, ironically, often have the least access to social networks. Farmers in this position are often forced to engage in activities that wealthier farmers would not find worthwhile.

Her stall is on the outside row of the market and consists of a small table that she covers with a tablecloth. She places about 20 pineapples on one side, then unwraps about 20 avocados, each carefully wrapped in newspaper, and about 6 large pieces of yam. It looks like hardly enough produce to justify a trip to the market… Most sales are for a single piece, and I estimate her cash-income that day could not be more than TT $150 or $200 (US $25–35). It seems like a very small profit after 5 hours in the market (Cedros, Indo-Trinidadian female farmer).

**Security.** Farmers at the security level do not need to focus exclusively on provision of basic necessities. There is the beginning of material accumulation and “progress.” Social networks are broader, and opportunities for socioeconomic advancement are more available. Individuals and households at this level often seek to ensure their “security” by diversifying their livelihood activities, both within agriculture and off-farm.

When she and her husband first started out, they were living in a house “made of zinc.” They planted bananas and had a really good crop, and from there have been “progressing.” They now have a lovely painted concrete house and yard filled with flowers. They have continued to farm, but her husband now also works a part-time government job. She recently started working three days a week in the hotels (Toco, Afro-Trinidadian farm couple).

**Profitability.** For farmers whose main objective is profitability, there is no longer a direct dependence on agriculture for immediate sustenance. These farmers have enough resources to selectively engage in activities that generate maximum profit. This may entail larger-scale or more input-intensive production, or may include working part-time off-farm. These farmers often have access to their own transportation and are able to

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25 Galvanized sheets of zinc are commonly used for roofing. Many poor people will recycle old sheets for use in building walls.
market wholesale. Such farmers do not so much need agriculture as choose agriculture for its profitability.

He is consciously trying to diversify his cash-income. He got a temporary government job a few months ago and is supposed to soon get a permanent position. He drives to work in the morning, before returning to work in his garden… I ask which is the most important to his livelihood; he says the garden is, because it is profitable year round (Toco, Afro-Trinidadian male farmer).

**Land access**

Land is an important indicator of socio-economic status in agricultural households, as it is the most basic resource required for production. Many variables determine the quality of a farmer’s land resource, including tenure, title, number of parcels, total acreage, land quality (soil type, slope, etc.), and accessibility. For my study, the main factors considered were land tenure and land title.

The type of land tenure affects the security of the agricultural operation, and is often hypothesized to influence choice of crop (long-term versus short-term) and investment in land improvement. In my study, three main types of tenure were reported: private, state lease, and squatting. Leased land was further subdivided into those who had a secure lease and those who were still “in process” of obtaining a lease. This distinction was important because the application process entailed a long series of bureaucratic decisions, so that, in reality, farmers who were “in process” had no more security of land access than squatters.

Analysis of surveyed farmers (n=123) revealed an important difference in land tenure by ethnicity, as would be expected given Trinidad’s history. Most

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26 Land tenure is a sensitive issue with farmers, especially squatters, who may be afraid of being removed from the land. Therefore, these statistics probably represent an under-reporting of the actual incidence of squatting.
Indo-Trinidadians (about 70%) farm private land while less than 20% of Afro-Trinidadians report having private land (Figure 5-4). Although arising from historical factors, this remains a major inequity in the basic agricultural resources of these two groups.

![Figure 5-4. Distribution of land tenure by ethnicity](image)

**Leased land.** The government’s attempt to redress the situation is indicated by the 40% of Afro-Trinidadians who are in some stage of securing a state lease. However, attempts at land redistribution have met with limited success. Only 15% of farmers report having a secure lease; the other 30% are still “in process” of securing a lease. In the specific case of Grande Riviere, this process has been dragging on for almost 20 years.

According to MA, when local people began to agitate for land access, the government decided to lease parcels of its former estates. However, despite grand promises and high hopes, little has changed. One hundred and ten people applied for the 38 available plots, which were assigned by lottery. Successful applicants were told to pay a fee to have the surveyor mark out their boundaries. They would then receive a “letter of intent” to lease from the state and, eventually, a lease. Many people wished to see which plot they were assigned before paying the fee,
and some refused to pay… However, *twenty-two farmers did pay the survey fee but have not received a lease, now almost 10 years later*. …Some people have cultivated their land without the lease, but there remains the possibility that it may be taken away from them (Toco, Afro-Trinidadian male farmer).

This has resulted in several negative consequences. Because farmers are not legally allowed to work their land without a lease, many of the plots have never been cultivated; others have been subsequently abandoned out of frustration. It general, it has created a negative perception in the mind of the farming community. Farmers believe that the government is not serious in its commitment to agriculture in general and to the region in particular.

As the years passed with no lease, MA and others had gone to the county Extension office several times to try to discover the status of their application. However, each time they came, they had to start at the beginning again, explaining the situation…As far as he could tell no action was ever taken to investigate the situation (Toco, Afro-Trinidadian male farmer).

The Ministry, for its part, provided scant and sometimes conflicting information regarding the case. In general, it appears that this case has suffered from poor management, perhaps reflective of bureaucratic miscommunication. A “State Lands Officer” told me that the farmers were at fault, as they had not followed proper procedures, and that the land would soon be made available to other people.

The State Lands Officer told me that most of that land would have to be resurveyed and redistributed, because very few of the farmers had ever collected their letter of offer or paid the necessary fees (Sangre Grande County Office).

**Squatting.** The lack of private land, combined with the difficulty of obtaining a lease, has forced many (45%) Afro-Trinidadian farmers to squat illegally on state or private land. However, this does not appear to be as much of a deterrent to agricultural

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27 State Lands Officers are the officials in charge of the distribution and oversight of public lands. They are employed through the Ministry of Agriculture.
production as the absent leases. In fact, the village with the highest percentage of squatters also has the most dynamic and profitable agricultural sector. The irony is that the farmers in Grande Riviere have been trying to get land titles for more than 10 years, but government bureaucracy has prevented the realization of this, severely depressing production. Meanwhile, squatters are farming illegally but profitably.

Many people are farming illegally on the state forest reserve. MA says that the government has “no idea” of the amount of cultivation…. Although this volume of production should justify increased government assistance, the farmers in that village do not want recognition, as that would bring attention to their illegal land use. To assist the farmers, the first issue would have to be the provision of land rights (Toco, Afro-Trinidadian male farmer).

Although the majority of Indo-Trinidadians have access to private land, there is still a significant percentage (25%) who squat. This is a growing trend, especially among younger male farmers (Table 5-1). Only 20% of male farmers over 50 years of age are squatters, while 50–60% of men under 50 are squatters. This is noteworthy because many people believe that young Indo-Trinidadian men are no longer interested in agriculture. However, the young men in my study are engaged in substantial agricultural production, even though they have an insecure resource base and must function with no formal recognition or assistance.

Table 5-1. Land tenure among male Indo-Trinidadian farmers, analyzed by age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>Type of land tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
</tr>
<tr>
<td>20-35</td>
<td>40</td>
</tr>
<tr>
<td>36-50</td>
<td>35</td>
</tr>
<tr>
<td>51-65</td>
<td>75</td>
</tr>
<tr>
<td>Over 65</td>
<td>75</td>
</tr>
</tbody>
</table>

Type of land tenure is expressed as a percentage of each age group
**Gender Implications.** While ethnicity is the most significant determinant of land tenure, there is also a noticeable difference by gender (Table 5-2). Afro-Trinidadian female farmers have the least access (5%) to private land, noticeably lower than Afro-Trinidadian male farmers or farm couples (25%)\(^{28}\). This gender distinction is not apparent among Indo-Trinidadians, who report similar high levels of access to private land (around 70%) regardless of farm gender. Afro-Trinidadian female farmers are thus doubly disenfranchised in terms of land access. They have neither the historical land resource of Indo-Trinidadians, nor the gender-based access of men.

Table 5-2. Land tenure analyzed by ethnicity and farm gender

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Type of land tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
</tr>
<tr>
<td>Afro-Trinidadian</td>
<td>Female farmer</td>
</tr>
<tr>
<td></td>
<td>Male farmer</td>
</tr>
<tr>
<td></td>
<td>Farm couple</td>
</tr>
<tr>
<td>Indo-Trinidadian</td>
<td>Female farmer</td>
</tr>
<tr>
<td></td>
<td>Male farmer</td>
</tr>
<tr>
<td></td>
<td>Farm couple</td>
</tr>
</tbody>
</table>

Type of land tenure is expressed as a percentage of each farmer group.

**Land title.** Land title (Table 5-3) was primarily related to gender and showed little differentiation by ethnic group. Most (50%) titles (n=73) were held by men, while women held only 10%. Another 10% of titles were registered in both partners name. Thirty percent of farmers worked land that was titled to a relative.

\(^{28}\) Although this may appear to be compensated by the greater number of female farmers who reported having a “state lease in process,” this is deceptive, as that category has no more security of tenure than squatters, as described earlier.
There was also a noticeable difference in land title by farm gender. Only one third of female farmers reported having land in their own name; most accessed land through their relatives. Interestingly, a fair number of Indo-Trinidadian female farmers reported land titles in both partners’ names (20%)\(^29\). In contrast, two thirds of male farmers had titles in their own name. The majority of farm couples had their land title in the man’s name, while a minority had a title in both partners name. No farm couples reported having their land in the woman’s name exclusively.

Table 5-3. Land title, analyzed by farm gender and ethnicity.

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Person holding land title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm gender</td>
</tr>
<tr>
<td>Female farmers</td>
<td>Afro-Trinidadian</td>
</tr>
<tr>
<td></td>
<td>Indo-Trinidadian</td>
</tr>
<tr>
<td>Male farmers</td>
<td>Afro-Trinidadian</td>
</tr>
<tr>
<td></td>
<td>Indo-Trinidadian</td>
</tr>
<tr>
<td>Farm couple</td>
<td>Afro-Trinidadian</td>
</tr>
<tr>
<td></td>
<td>Indo-Trinidadian</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>

Person holding land title is expressed as a percentage of each farmer group.

\(^29\) These tend to be married women whose husbands work off-farm (SRD 5).
**Abandoned land context.** All of this land insecurity exists within a national context of “abandoned30” land, which is immediately evident in both regions studied. Large tracts of arable land, much of it former agricultural estates, are no longer cultivated. In 2003, a state lands officer told me that 60% of the state lands in county St. Andrew / St. David is “abandoned.” In part, this reflects the collapse of the agricultural support system, so that many people no longer consider agriculture a viable industry.

MA tells me that most people in the area own a 5 or 10 acre plot of land, although many have gotten “discouraged” due to the fires and have “abandoned” their land, in the sense of no longer cultivating it… We follow the agricultural access road back into land that is now mostly uncultivated “bush.” He points all about, building in my mind a whole neighborhood where family and friends used to work the land (Cedros, Indo-Trinidadian farm couple).

The high incidence of abandoned land highlights the paradox of so many landless farmers. One third of all farmers interviewed were squatting, and another third were in the indefinite process of applying for a state lease. Thus, there would appear to be a natural solution to the twin issues of farmers without land and land without farmers. Yet the problem persists, hampered by bureaucratic inefficiency in the distribution of state land, and the lack of an effective system for the rental of private land. The fact that this has not been addressed reflects the overall marginalization of agriculture, and will continue to prevent farmers, especially small and limited resource farmers, from realizing their potential. The insecurity of land access is shaping not only their present livelihood, but also their future plans, as they fear that new laws will further limit their ability to access land.

MA is concerned about a recent change in national land policy. Previously, community members were given priority to purchase land in the area. Now, under

30 Abandoned land was once productive farmland but is no longer cultivated by the person with legal access rights, either lease or private title.
the new law, anybody can buy land in the area. MA is afraid that this will eventually force most farmers off the land (Toco, Afro-Trinidadian male farmer).

**Education**

Education is an important socio-economic factor, as it increases skill levels and improves employment opportunities, thus creating the possibility of movement to a higher resource level. For children, school can directly provide some agricultural training, as agriculture is still a common component of the primary and secondary curriculum. In addition, by improving literacy and analytical skills, education increases the ability of adult farmers to benefit from new technologies.

In rural Trinidad, educational opportunities are determined by the availability of government run schools as well as cultural norms. Many older farmers never had the opportunity to advance beyond primary education, as the establishment of secondary schools in rural areas has been relatively recent. Traditional social norms that once limited the education of girls are now rapidly changing. However, some inequities still persist, especially for Indo-Trinidadian women. The education of girls was not a part of traditional Indian culture and was first fostered by Christian churches in Trinidad (Mohamed, 1999).

Analysis of survey data (n=171) confirms that education is related primarily to age, with younger groups having successively higher levels of secondary education (Table 5-4). Despite these advances, it is noticeable that Indo-Trinidadian women of all age groups consistently report the lowest levels of education.
Table 5-4. Educational level, analyzed by age, ethnicity, and gender

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Indo-Trinidadian</th>
<th>Indo-Trinidadian</th>
<th>Afro-Trinidadian</th>
<th>Afro-Trinidadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>20–35</td>
<td>50</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>36–50</td>
<td>75</td>
<td>60</td>
<td>55</td>
<td>70</td>
</tr>
<tr>
<td>51–65</td>
<td>95</td>
<td>80</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>Over 65</td>
<td>100</td>
<td>95</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Education is expressed as a percentage of each farmer group. Primary education includes any amount of primary education, regardless of completion.

Virtually no farmers over 65 have a secondary education, due to the unavailability of secondary schools in their youth. The subsequent establishment of these schools in rural areas is evident in the 20% of men in the 50–65 age range who report secondary education. However, the gender biases of that time are indicated by the fact that only 5% of women in that age group were able to attend secondary school.

She herself had never been to “college” (high school). She tells me people back then didn’t find it necessary to educate their girl children once they knew how to care for a household. She says, “Boys had all the advantages” (Cedros, Indo-Trinidadian farm couple).

In addition, 10% of women had been unable to complete primary school, versus only 2% of men. Many girls were removed from school in order to help at home.

She said it was not common for girls to be in school back then. Her mother told her, “Once you can sign your name, you are OK, (so)...once I could do that, I was taken out of school” (Toco, Afro-Trinidadian female farmer).
Marked improvements for men and greater equality for women are noticeable in the 36–50 age group, as secondary education is reported by a third to a half of respondents. However, although Afro-Trinidadian women report equal or higher educational levels than men, fewer Indo-Trinidadian women have been able to reach that level. This trend is repeated, and even more evident, in the youngest group, the 20–35 year olds. Afro-Trinidadian women have an identical educational profile as men; a full 80% have completed secondary education. In comparison, only half of Indo-Trinidadian women in this age group have completed secondary schooling, with the other half remaining at the primary level.

Overall, educational access is improving, as reflected in the steady growth in the number of secondary school graduates in the last 40 years. The increasing participation of women reflects recent national trends, which report less than a 1% difference between male and female educational levels (CSO, 2001). However, it is troubling that young Indo-Trinidadian women in rural areas still lag behind their counterparts. As recently as 1980, Harry found that female farmers in Trinidad had significantly fewer years of schooling than men. To find this trend continuing in the younger generation today reveals the need for continued action to increase the opportunities available to this group.

**Life-Stage Factors**

Life-stage factors are those variables that define an individual as they pass from childhood to seniority, such as age, marital status, and household composition (number, age, and gender of dependents, total household size). These variables change in a fairly predictable manner as an individual matures. In my study, the most influential life stage factors were identified as age, marital status, and household size.
Before considering individual variables, it is important to recognize a basic difference in Afro- and Indo-Trinidadian life cycles. There is an important cultural distinction in the conceptualization of the natural and desirable flow of life. In Indo-Trinidadian culture, there is a definite progression of expected stages in life, inherited from “traditional Hindu ideals of fitting specific behaviors to specific periods of life” (Sampath, 1993). Marriage is supposed to occur at a relatively young age and precede the birth of children. The raising of children and material progression of the family unit then becomes the primary objective (Ramjohn, 1975).

In rural, working class Afro-Trinidadian society, life stages tend to be less defined. Marriage is not a prerequisite for a relationship or even the birth of children. Couples do not necessarily share a common home or objective. If marriage occurs, it is often at a later age, as the culmination of a successful relationship (Ramjohn, 1975). Regardless of conjugal status, the responsibility for dependents defines many life choices. This leads to some similarities in life stages, especially for women, regardless of ethnic and cultural differences.

**Marital status**

An individual’s marital status greatly influences their objectives, resources, constraints, and activities. An unmarried individual is centered on their own, or their birth family’s, needs and wants. The transition to husband or wife brings new responsibilities, which change not only the individual’s objectives but also their ability to meet those objectives. Whether marriage occurs, and at what stage in the life cycle (at what age, whether preceding children or not), is reflective of cultural norms. Social expectations

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31 Notable exceptions are the devout church-goers, who firmly adhere to the institution of marriage and exhibit similarities to Indo-Trinidadian life stages.
likewise influence the form that marriage takes: the specific roles and responsibilities of each partner, as well as the overall level of interdependence versus autonomy.

Differences in cultural norms are reflected by the fact that almost 80% of the surveyed Indo-Trinidadian farmers (n=88) are married, versus only 35% of Afro-Trinidadian farmers (n=77) (Figure 5-5). However, another 35% of Afro-Trinidadians report common law relationships, thus 70% of Afro-Trinidadians are in some form of conjugal relationship. In general, however, Afro-Trinidadian farmers are more likely than Indo-Trinidadians to be single.\(^{32}\)

![Figure 5-5. Marital status of farmers by ethnicity](image)

There are also cultural differences in the timing of marriage. For Indo-Trinidadians, marriage is embarked on at a fairly young age with the expectation

\(^{32}\) The “single” category includes divorced and separated farmers. The number of divorcees was so small (n=7, 5% of respondents) as to be statistically insignificant.
that it will last a lifetime. This is especially true for women, as evident in the fact that 100% of Indo-Trinidadian women in their 20s are married (Table 5-5). In contrast, it appears more acceptable for young men to remain single: only 20% of Indo-Trinidadian men in this age group are married. However, men’s natural progression to marriage is visible in each subsequent age group: 70% of the 35-50 year olds are married; 90% of the 51-65 year olds, and 100% of men over 65. Although the percentage of married women appears to decrease with age, this change reflects an increase in the percentage of widows. The 10% of women who report being single had been previously married and had left their husbands due to extreme abuse. However, divorce is not socially acceptable, so that most relationships, even unhappy ones, will persist. The unfortunate corollary is that women who do leave their husbands are often socially isolated. The importance of marriage as the socially sanctioned vehicle for relationships is reflected in the complete absence of common law relationships.

Table 5-5. Marital status of Indo-Trinidadian farmers, analyzed by gender and age

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Marital status</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Married</td>
<td>Common law</td>
<td>Widowed</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>A GE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–35</td>
<td>0</td>
<td>80</td>
<td>100</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>36–50</td>
<td>10</td>
<td>30</td>
<td>70</td>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>51–65</td>
<td>10</td>
<td>5</td>
<td>80</td>
<td>90</td>
<td>0</td>
</tr>
<tr>
<td>Over 65</td>
<td>0</td>
<td>0</td>
<td>50</td>
<td>90</td>
<td>0</td>
</tr>
</tbody>
</table>

Marital status is expressed as a percentage of each farmer group

Life stages are not as defined for Afro-Trinidadians. For most rural, working class Afro-Trinidadians, marriage is not a necessary precursor to a relationship and may not
occur at all. In all age groups, a quarter to a half of Afro-Trinidadians reports being single (Table 5-6). The largest observable trend by age is a decrease in common law relationships with increasing age. Common law relationships are most common in the 20–35 age group, perhaps indicating the initial stage of a relationship. The gradual decrease in common law relationships in each subsequent age group may be the result of separation or, conversely, the formalizing of the relationship in marriage.

Table 5-6. Marital status of Afro-Trinidadian farmers, analyzed by gender and age

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Marital status</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Married</td>
<td>Common law</td>
<td>Widowed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Female Male</td>
<td>Female Male</td>
<td>Female Male</td>
<td>Female Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–35</td>
<td>0 20</td>
<td>25 10</td>
<td>75 70</td>
<td>0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36–50</td>
<td>30 25</td>
<td>25 30</td>
<td>40 35</td>
<td>5 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51–65</td>
<td>20 55</td>
<td>25 40</td>
<td>20 20</td>
<td>35 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 65</td>
<td>30 30</td>
<td>65 100</td>
<td>0 0</td>
<td>0 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Marital status is expressed as a percentage of each farmer group.

Despite ethnic differences in the timing and definition of marital roles, there are certain commonalities in the resources, constraints, and objectives associated with the different marital states. In my study, this is perhaps most dramatically illustrated by the difference in land access (Figure 5-6). This and other trends associated with each marital state are discussed in greater detail below.

**Single.** Single farmers function as a discrete unit, with few formal responsibilities to other adults but also with limited adult support. Without a partner to provide an alternative source of cash-income or household support, they function with little security.
Figure 5-6. Distribution of land tenure by marital status

Their own cash-income is their sole livelihood, and they are responsible for both production and reproduction activities. If there are children in the household, the single adult bears sole responsibility for care of dependents.

To survive, a single individual requires access to some form of capital, either individual physical assets such as land and money or social capital. Many farmers in these regions have limited financial assets, so they are highly dependent on social capital, comprised of their unique network of friends and family. Networks assist directly in survival, through provision of food and support in times of hardship. They are also an important agricultural resource, through the provision of labor and information. However, being single may reduce the networks that are available to farmers.

Being single carries some unique constraints. On an agricultural level, there is an obvious labor constraint, which makes access to network labor crucial. Household
responsibilities also limit the labor available for agricultural activities. This is typically
more constraining for single women, who bear the entire burden for production and
reproduction activities, than for single men, who often get assistance from female
relatives for domestic chores and childcare. This is visible in the survey: single women
have responsibility for 1-2 children, while single men report having no dependents in
their household. Single farmers also have the least legal access to land. The vast majority
(75%) has no security of tenure: 40% are squatters and another 35% are seeking to obtain
a state lease. Many single farmers thus have a limited ability to plan for and invest in a
future in agriculture.

For women, being single carries some additional constraints related to autonomy,
mobility and visibility. While men function freely in the public domain regardless of
marital status, single women may be relatively invisible. Cultural norms define the social
status of the single woman. Single Indo-Trinidadian women are often doubly invisible, as
women in general are less active in public, and single women do not have husbands to
represent them. Conversely, the single Afro-Trinidadian woman is highly recognized (at
least as a social phenomenon) and enjoys a high level of autonomy and mobility outside
the household. However, in practice, few of these women are recognized by formal
agricultural institutions or have accessed their services. Overall, single women have the
least access to agricultural support services of any group. In addition, all women tend to
be constrained in their mobility when they have young and school-aged children.

While being single is often an indicator of poverty in women, in men it may be
associated with adequate resources to function as an independent unit. Single men often
hold off-farm jobs, which provides some security of cash-income. Accessing an outside
job is more difficult for women. Not only are women more bound to the household but they also have fewer job opportunities. This is evident in the survey: most single women report being entirely dependent on agriculture, while at least half of single men hold an off-farm job and derive half or less of their cash-income from agriculture. As a result, single women have fewer resources to invest in agriculture, even though agriculture is more critical to their household well-being.

**Common law.** Common law relationships bear similarities to both single and married relationships and may function as an intermediate type of arrangement. While individuals in common law relationships potentially have more support than single farmers, they do not have the security of a marital relationship. In its place, they retain greater autonomy and may maintain more individual resources.

Common law unions are predominantly found among Afro-Trinidadians. While most Indo-Trinidadians consider marriage an essential part of a relationship, many Afro-Trinidadians regard common law relationships as equally valid. Regardless of the associated social status, there are definite distinctions between common law and married households, particularly in resources and stability. In general, common law households (and the individuals within those households) have fewer resources than married households. Common law couples function not only outside of legal marital arrangements but also outside of most formal organizational structures, limiting their access to external resources.

Analysis of survey data shows common law households to have a distinct profile in comparison to married households. Common law households are typically larger, with more dependents (4-6 versus 2-3), sometimes from different parents. Common law
relationships are also more frequent among younger farmers. Almost all are younger than 50, while more than half of married farmers are older than 50.

These households have markedly fewer agricultural resources than married households. In this way, they are similar to single female farmers. About two thirds of common law households have no legal access to land and thus resort to squatting, as compared to one quarter of married households (Figure 4-6). This probably accounts for the fact that no common law farmer is registered, while one half of married farmers are. Common law farmers also report the lowest level of interaction and the least satisfaction with the services of the Ministry of Agriculture, either at the county or national level.

Common law relationships tend to be less beneficial for women than men. Women usually assume childcare and household responsibilities for themselves and their partner, thus limiting their time for agricultural activities. However, despite bearing primary responsibility for the household, they do not have secure access to their partner’s cash-income for household maintenance. Men, on the other hand, gain from their partner’s domestic labor without having to commit to household financial support.

**Marriage.** Marriage is the most formal type of relationship and provides the greatest resource security for both partners. At the same time, as a formally binding institution, it is accompanied by strong social expectations, which may limit individual autonomy. Husbands and wives have different roles and responsibilities, which are determined, in large part, by cultural norms. These, in turn, determine, individual and household resources, constraints, and objectives.

For both Afro- and Indo-Trinidadian women (perhaps women in most societies), marriage is at once a security and a constraint. On the one hand, a conjugal relationship
provides access to a much greater pool of resources (emotional and financial support, labor, information, economic alternatives). On the other hand, the expectations that accompany the role of “wife” often involve a loss of autonomy in all matters, social as well as financial. Kanhai illustrated this paradox in her description of Indo-Trinidadian society as a place where “family and community … protect and empower even as they inhibit, censor, and commit violence against women” (Kanhai, 1999, p. xiii). Women may find themselves disappearing from the public eye as they assume their role as wives within the household. Conversely, for women who have never ventured “outside” the household, marriage may indirectly increase their access to public resources through their husband.

On the whole, marriage is a beneficial institution for men. Although it increases their burden of support, this is compensated by their wife’s assumption of responsibility for household duties. Married men do not face the same loss of autonomy as women; in fact, their public standing and authority often increases as a result.

Survey analysis reveals that married couples have the highest level of access to both internal and external resources. Married couples have the highest access (60% of households) to private land. Although both partners may not have equal access to household labor and cash-income, the household as a whole enjoys increased security. Married households are frequently tied in to both community and external organizations. Married farmers are the most likely to be registered and report the highest level of interaction with the formal agricultural support service.

**Widows.** Widows and widowers (hereafter referred to simply as widows, regardless of gender) are distinct from single farmers in several ways. Widows are in
transition. They are newly single, often unexpectedly so, and thus must establish or re-establish their independent functioning. For this reason, they are typically more vulnerable than farmers who have never married. In addition, the majority of widows are in their senior years, which has its own profile of resources and constraints.

Widows must successfully make the transition from a cooperative entity to an independent, self-reliant unit. In many ways, this evolution is more difficult for women than men. Many married women have never worked outside the house and have relied heavily, if not entirely, on their partner’s cash-income. Upon their husbands’ death, these inexperienced women must, sometimes suddenly, find a way to earn a cash-income. Women who have previously worked outside the house usually did so out of strict economic necessity, and thus can ill afford the loss of their husband’s cash-income. For men, the shock is not normally as severe, as most already have an established livelihood. In addition, if their wives die, men often turn to female relatives to provide their household needs. Overall, women are more vulnerable than men at the death of their partner. Thus many appear to turn to agriculture as a livelihood of last resort.

The importance of agriculture as a survival strategy for widowed women is supported by survey results, which show that more than 10% of women in agriculture in both ethnic groups (25% of sole female farmers) are widows, while fewer than 5% of men report being widowed. This may reflect the fact that agriculture is one of the few available and acceptable livelihood activities for women. Some of these women may be engaging in agricultural production for the first time. These women have relatively little experience in agriculture, except what they may have learned from their husbands, and they are largely unrecognized by the formal agricultural support system.
Although loss of a partner can be devastating at any age, it may be particularly so for farmers who are widowed at a young age. In these situations, there are often young children at home, who are highly dependent on the remaining parent. This tends to be more problematic for widow women, as men will often place their children in the care of relatives.

When farmers are widowed in their senior years, they must contend with the natural constraints of age. Declining strength and health limits their ability to cultivate the land. Networks of friends are decreasing in numbers and vitality, limiting their assistance. Seniors without a cash-income from private retirement are limited to state pension funds, making it infeasible to hire labor. The primary remaining resource is the extended family, which may provide a crucial safety net. In these cases, widows may be absorbed into their children’s household and may not need to cultivate a garden. However, for the individual unwilling or unable to give up their independence, the garden provides a means of self-support.

Age

Farmers’ age is primarily important as an indicator of other factors. Analysis of farmers’ ages may reveal whether there are certain age groups with a higher participation in agriculture. An examination of the social variables associated with those age groups can then indicate why agriculture is more feasible and / or desirable at those life stages.

Analysis of survey data (n= 176) revealed that farmers’ age is related to ethnicity and gender. Most Indo-Trinidadian farmers (n= 89) are over 50 (67%) while the majority of Afro-Trinidadian farmers (n= 87) are under 50 (61%) (Figure 5-7).
While this appears to be an ethnic difference, it is probably a factor of region, which is visible as ethnicity because the two regions are so distinct ethnically. The Cedros region has more economic alternatives than the Toco region, especially in recent years, so that many young Indo-Trindadian men have left agriculture to pursue off-farm work. This is definitely not the case in Toco, where many people told me that “agriculture is all there is.”

“Up in this countryside, agriculture is the only thing to bring in money… that is what we live by, that is the only way out here” (Toco, Afro-Trinidadian farm couple).

Gender differences are similar in both ethnic groups. Both Afro- and Indo-Trinidadian women follow the same pattern of participation in agriculture, distinct from male participation (Figure 5-8). Below the age of 35, men have slightly higher rates of participation than women. Female participation peaks between the ages of 36 and 65,
after which participation drops off dramatically. This contrasts with the more even distribution of male farmers across all ages.

![Bar chart showing age distribution of farmers by gender](image)

**Figure 5-8. Age of farmers analyzed by gender**

Women’s participation in agriculture is affected by their responsibility for dependents. Mothers with very young children, corresponding to the 20-35 age range, are constrained in their ability to work outside the home. However, once children enter school, women have both the time and the motivation to garden, as they often assume responsibility for paying school fees and supplies. This period corresponds with the ages of 36-65. The sudden decrease in agricultural participation after the age of 65 is probably due to the movement of dependents outside of the house, so that there is no longer the necessity to support as many people.

When I arrive, I am told that the man is the sole farmer. However, during the course of the interview, his common law wife becomes interested and recounts her own past involvement with agriculture, “I used to grow plenty garden, that’s how I
put 5 children through school. But now (with) only one child in school…(it’s) too much pressure for me (to garden) alone” (Toco, Afro-Trinidadian farm couple).

**Household size**

The size of a household, specifically as it relates to the number of dependents, is a significant factor directly affecting resources and constraints, such as labor, cash, and consumption requirements. Household size is a dynamic variable, changing with age and marital status, as families are formed and expanded and, ultimately, move apart.

Analysis of survey data revealed little difference in household size by ethnicity, with Cedros having a mean of 3.63 and Toco a mean of 3.78. This is in accord with the regional statistics of the 2000 Population and Housing Census, which found an average household size of 3.65 people in the Regional Corporation of Siparia, the municipality that includes Cedros, and 3.86 in the Regional Corporation of Sangre Grande, which includes Toco.

As would be expected, household size is related to marital status. Single farmers have the smallest mean household size (2.4 people), followed closely by widows (2.6) (Table 5-7). Married farmers have significantly larger households, averaging 3.9. The largest group is common law households (all Afro-Trinidadian) with an average household size of 5.2. Interestingly, Indo-Trinidadian widows report being part of significantly larger households than Afro-Trinidadian widows. This may reflect a cultural difference, such that Indo-Trinidadian widows may be more likely than Afro-Trinidadians to move in with family members at the loss of a partner.
Table 5-7. Household size analyzed by ethnicity and marital status

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Marital status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
</tr>
<tr>
<td>Afro-Trinidadian</td>
<td>2.2</td>
</tr>
<tr>
<td>Indo-Trinidadian</td>
<td>2.6</td>
</tr>
<tr>
<td>Total</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Household size is also related to farm gender (Table 5-8). Male farmers have the smallest household size (3.1), while female farmers average 3.8 people per household. Couples farming together have the largest households, an average of 4.6 people. However, there was an important difference by ethnicity in this category, as Indo-Trinidadian couples tended to have smaller households, 3.6 people, versus 5.7 people for Afro-Trinidadians. This probably relates to the large common law household, which may include children from different parents.

Table 5-8. Household size analyzed by ethnicity and farm gender

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Farm gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female farmer</td>
</tr>
<tr>
<td>Afro-Trinidadian</td>
<td>3.3</td>
</tr>
<tr>
<td>Indo-Trinidadian</td>
<td>4.4</td>
</tr>
<tr>
<td>Total</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Summary

This chapter described the social factors that differentiate farmers in my study regions. These variables of social identity create vastly different realities for individual farmers.

Important socio-cultural variables in these two communities include ethnicity, religion, gender, and farm gender. Ethnicity has a strong influence on household structure and gender roles, creating vastly different expectations and opportunities for Afro- and Indo-Trinidadian women. While religion has a more subtle influence on individual roles, it is important in defining shared identity and social networks. Women’s lives are most shaped by their role as the primary caretaker of dependents. Farm gender creates important distinctions in resource levels, with female farmers typically at the lowest level. While male farmers are often from a higher resource household, farm couples enjoy the greatest access to agricultural resources.

The most influential socio-economic variables consist of economic objective, land and education. Most farmers function at the survival or security level, and focus on the provision of immediate needs, with limited ability to invest in agricultural improvements. Land access is highly linked to ethnicity; most Afro-Trinidadians are forced to squat or seek a government lease, while Indo-Trinidadian men historically have a higher incidence of private land ownership. Although women often access land through family, land titles remain primarily in men’s name. While access to education has dramatically improved in rural areas, erasing most ethnic and gender differences, Indo-Trinidadian women still report the lowest level of secondary education.

Life-stage, as indicated by marital status, age, and household size, are also important factors of social identity. While Indo-Trinidadians tend to follow a fairly
predictable path from marriage through childbirth with a stable family unit, Afro-Trinidadians have a less defined progression of life stages and may change relationships or households. Married farmers tend to have the greatest stability and resource access, while common law and single farmers have notably less security. Widows are especially vulnerable and engage in agriculture as a survival strategy. While the majority of Indo-Trinidadian farmers are older than 50, most Afro-Trinidadians are less than 50, probably due to greater economic alternatives in Cedros. Women’s participation in agriculture tends to follow their childbearing years. Common law and farm couples tend to have the largest households, which may create a high resource drain.

It is crucial to recognize farmers’ social identities in order to understand their different realities. At a given point in time, an individual farmer possesses a unique combination of social variables, which affects her/his objectives, resources, and constraints, and thus the ultimate selection of agricultural activities. However, the agricultural support system often does not consider social identity but responds instead to the composite “average” farmer, who bears little resemblance to any particular individual. In so doing, programs and policies are designed that may have little relevance to the majority of the farming population. It is hoped that the material presented above will increase awareness of social identity variables in these two communities.

The next chapter describes the wide range of farmers’ objectives, resources, and constraints, and relates these to their selection of activities.
CHAPTER 6
OBJECTIVES, RESOURCES, CONSTRAINTS, AND ACTIVITIES

Introduction

This chapter provides an in-depth description and analysis of farmers’ objectives, resources, constraints and activities. Although a sequential reading will provide the fullest appreciation for the range of farmers’ ORCA, this material can also be used as a reference tool by practitioners who wish to identify characteristics of specific target groups. In the next chapter, in Step 7, groups of farmers (social recommendation domains) are identified, along with the ORCA that tend to be associated with them (that are most characteristic of them). Therefore, a practitioner might first wish to identify their priority target groups as described in Chapter 7 and then refer back to this chapter for more information on specific ORCA.

To facilitate this use as a reference document, this material has been organized for ease of reference. The chapter is divided into four sections, to represent the main areas of investigation:

- Objectives
- Resources
- Constraints
- Activities

Each section is introduced by a code map\textsuperscript{33}, which shows the general families and their associated codes. Individual items of interest can be quickly located by referring to

\textsuperscript{33} Code maps visually summarize the results of the data analysis. Code families are listed across the top of the map, with each associated code linked to it below.
these maps and then cross-referencing the appropriate text. Each code is explained in the
text and illustrated with the field note or quotation that best represents that particular
concept. This approach presents farmers’ realities from their own perspective, allowing
readers to directly interact with the data and make their own interpretations. Readers
unfamiliar with ethnographic tradition are referred to the section “Telling the Story” in
Chapter 3 for an explanation of this presentation of results. Several sections also include
descriptive statistics summarizing relevant findings among the broader regional farming
community.

**Step 3: Identification of Objectives, Resources, Constraints, and Activities**

This material comprises the findings from Step 3 of the ORCA framework, as
described in Chapter 4. From interviews and participant observation, I compiled an
extensive database of farmers’ objectives, resources, constraints, and activities, recorded
as much as possible in farmers’ own words.

While this chapter presents all of the objectives, resources, constraints and
activities that were mentioned by farmers, a particular farmer will possess only some of
these. Social diversity leads each farmer to have different objectives and a distinct profile
of resources and constraints, which influences their selection of an agricultural strategy.
As their socio-economic and life-stage variables shift, their ORCA will also change, with
each assuming varying levels of importance.

**Objectives**

Socio-economic, socio-cultural, and life-stage factors have a strong influence on an
individual’s reason for participating in agriculture. These reasons, or agricultural
objectives, are dynamic, shifting over time as an individual moves through life stages or
changes socioeconomic level. These objectives offer a key insight into the decisions a
farmer makes as to type and level of activity, as well as their particular choice of
technologies and inputs. Therefore, identifying farmers’ objectives is crucial to matching
outside assistance with a farmer’s own priorities. “The goals and motivations of farmers,
which will affect the degree and type of effort they will be willing to devote to improving
the productivity of their farming systems, are essential inputs to the process of identifying
or designing potentially appropriate improved technologies” (Norman et al., 1982: 25).

Informal interviews with farmers in the two regions of Trinidad revealed a wide
array of objectives for participating in agricultural activities. These are presented in the
Objectives code map (Figure 6-1). Specific objectives are grouped into code “families,”
based on the type of social factor, namely:

- Ethnicity
- Gender
- Religion
- Socioeconomic
- Life stage
- Lifestyle

All of these factors exist in a particular combination in an individual farmer. However, at a given point in time, one or more of the objectives will be considered the
most important. The dominant influences often shift over time, as circumstances change.

**Ethnicity**

Social norms affect the perceived desirability of agriculture as a livelihood activity.
Agriculture has played a variety of roles for different ethnic groups and has assumed
varying degrees of importance. For some people, their desire to be involved in
agriculture stems from this value (conscious or unconscious) of agriculture as part of
their ethnic heritage. Agriculture is not used to fulfill some other objective; participation
in agriculture is the objective.
Figure 6-1. Objectives code map
Culture of agriculture. Trinidadians today predominantly associate Indo-Trinidadians with agriculture, often viewing it as a cultural birthright (Sampath, 1993). However, this affiliation arose from historical patterns of settlement. At the end of their indenture, many male Indians accepted land in lieu of a return passage to India. Many more purchased land in the years that followed, leading to the development of vibrant rural communities (Brereton, 1981). The majority of this land has been passed down through the generations, ensuring the continued cultural importance of agriculture to many rural Indo-Trinidadians.

“To my family and Indian people, agriculture is very, very important…from grassroots coming up, always have something to put on the table. Agriculture is something we grew up in, we believe it is the mainstay of the family” (Cedros, Indo-Trinadian farm couple).

Africans, on the other hand, were prevented from purchasing land at the cessation of slavery; so many migrated into the interior regions of Trinidad, where they squatted on undeveloped land. Although land was later made available for purchase, access to private land has remained problematic for many Afro-Trinidadians. However, the continuation of squatting as well as employment on large agricultural estates did provide a continued agricultural lifestyle in these areas.

“From small my mother used to work on the estate, and when she come home, she’d go in her garden. That lady used to like to make garden. I used to go alone and plant, and all my girl children know how to make garden, even if they only plant two peas by the house” (Toco, Afro-Trinidadian female farmer).

There is also a distinct cultural connection to agriculture among Afro-Trinidadians whose families came from St. Vincent and the other “small islands” of the Caribbean. Agriculture was the backbone of those countries’ economies, and immigrants brought with them a positive perception of agriculture’s potential, noticeably different than that of the average Trinidadian. This is especially evident in Sans Souci, which has the highest
percentage of Vincentians and a vibrant agricultural community, in marked contrast with other villages of the north coast.

She tells me that children in Sans Souci still perceive agriculture as a good livelihood, and many will start to work for farmers before eventually going into their own production. They do not perceive agriculture as a low status occupation, as has been the impression I have received elsewhere in Trinidad (Toco, Afro-Trinidadian female farmer).

**Family focus.** Participation in agriculture is often viewed as a way to help support the immediate and extended family. While much attention has been paid to the Indo-Trinidadian focus on the family, this sentiment was also echoed by Afro-Trinidadians, especially women, who seemed to constantly be sending small bunches of produce to extended family.

MA has planted numerous small patches of short crops for them to eat and “give away” to family. “Agriculture is food, and as long as I have food, I can take care of my family – and know the food they eat is healthy.” With 24 children and grandchildren, he has quite an appreciative audience (Cedros, Indo-Trinidadian male farmer).

**Gender**

Gender-related objectives are shaped by the distinct realities within which men and women function. They often are fulfilling different objectives through their participation in agriculture. For women, who assume primary responsibility for the well-being of the household, much of their involvement in agriculture is directly related to meeting family needs. In fact, the care of dependents, whether children or adults, is of such priority that it often obscures other cultural differences among women of different ethnic groups. In contrast, men may be more likely to pursue individual goals.

**Education of children.** In both ethnic groups, the support and especially the education of children is a primary concern for women. Many women become involved in
agriculture specifically to pay for educational needs, from school fees to books and uniforms to transportation.

Agriculture is …“very important, because I grew all my children on agriculture. That was my life. I used to go to the garden every day…that put the children through school” (Toco, Afro-Trinidadian female farmer).

Education is such a priority that sacrifices of other basic necessities are made without question. Even the tightest budget seemed able to stretch to accommodate school costs, without complaint.

Her son’s transportation to school requires more than $100TT (US$16) a week. However, she sees that as money well spent… despite the fact that she has had to turn her telephone off to afford it (Cedros, Indo-Trinidadian female farmer).

Children’s education is so important that women’s participation in agriculture tends to parallel the age of their family. Women with infants are necessarily limited in their mobility and often exhibit a temporary decrease in gardening. However, their involvement begins to climb as soon as their children enter school. Equally evident is the sharp decline in women’s involvement in agriculture in the later years, after their family is grown, while men’s participation stays much more constant.

She gives away a lot of what she produces. She tells me that her farming is more of a hobby now than before, when she had the children to support (Toco, Afro-Trinidadian female farmer).

**Care of dependents.** Many women continue or resume agricultural activity in order to provide for dependents other than their own children. It is fairly common for older women to assume responsibility, as de facto or de jure heads of household, for their grandchildren. This appears to be especially prevalent among Afro-Trinidadian women, perhaps due to the greater instability of parental relationships. These households often contain several dependent adults as well, who may draw partial or entire support from the senior woman.
She is raising her son’s two children, who she “took away” because of family problems. She is also at least partially supporting three adult men. Her husband is too infirm to help, and she tells me her older son is only trouble, he is “on drugs.” Therefore, she alone goes in her garden several mornings a week (Toco, Afro-Trinidadian female farmer).

**Household cash-income.** Regardless of other activities, women of both ethnic groups remain predominantly responsible for household upkeep and maintenance, both financially and emotionally. Thus, many women perceive agriculture primarily as a means of meeting their household objectives. Agriculture can provide a much needed source of cash for women, who often have fewer opportunities for off-farm employment. However, they do not enter into agriculture for personal gain. Any cash-income generated is funneled back into the household. Produce from the garden serves to stretch or replace limited household cash by reducing the need to purchase food.

“Agriculture is good…when I plant, I don’t hardly buy any vegetables, saves me an expense… helps ease up things. Then when I go to market, I make a very good income” (Cedros, Indo-Trinidadian female farmer).

**Household food.** Although women are predominantly involved in commercial agriculture, many also rely on the garden as a direct source of food for the family (Harry, 1980). “Caribbean women farm first and foremost to feed their families. Therein lies the unique potential of women’s agriculture” (Barrow, 1997, p. 303).

Her land provides a lot of food directly to the household. She tells me that once the rain comes, she only needs to buy flour and sugar and baking powder and such; the rest comes from her land (Cedros, Indo-Trinidadian farm couple).

This basic objective, to feed one’s family, is equally evident in both ethnic groups.

“That is the most important thing. Without food…(we) can’t survive. Plantain is food, cassava is food…I get about half (of household food) from the gardens; it helps ease up things” (Toco, Afro-Trinidadian farm couple).
Ethnicity and gender

Because of the distinct gender roles in Afro- and Indo-Trinidadian societies, agriculture fulfills different objectives for women of different ethnicities. These cultural distinctions are more evident in rural areas, where traditional values have not been challenged by exposure to other social norms.

Good wife. In traditional Indo-Trinidadian homes, women are expected to fulfill certain duties as the “keeper of the home.” “These women… remain steadfast…in their determination to feed their families and maintain their households” (Harry, 1980, p. 142). Part of being a “good wife” is providing the nutritional needs of the household. This includes not only the demanding daily task of cooking three full meals, but also the maintenance of a backyard garden, complete with small livestock. Women work hard to accomplish this and express pride in meeting their objective.

She rises at 4 am every day to cook breakfast for her children before they leave for work and school. She remarks that her children work hard, and need real food to sustain them… Proudly she shows me the ducks and chickens that are in back of the house and the assorted vegetables that dot her yard. The chickens are “common fowl” which are, she feels, healthier than the store bought “white fowl” (Cedros, Indo-Trinidadian farm couple).

Female home activity. Indo-Trinidadian women in traditional middle-class families may be physically secluded, as some husbands do not find it appropriate for their wives to participate in activities outside of the home. However, these women often have access to family land surrounding the house, so that gardening can be done within culturally appropriate boundaries. For these women, participation in agriculture gives them a sense of purpose and accomplishment, beyond their care of the household.

She is primarily involved in the maintenance, harvest, and sale of citrus and “fig\textsuperscript{34},” which grow on lands behind the house. She started working on the land once her

\textsuperscript{34} Fig is the local name for banana.
three children were old enough to attend school. She says that she had to find a way “to keep busy” so that she “didn’t stay home and look at the 4 walls.” Her husband doesn’t like her to “go out” without him, so the majority of her life is spent within the house (Cedros, Indo-Trinidadian female farmer).

This seclusion is most evident in middle class families, in which there is enough cash-income that the woman is not required to work. Women on the lower end of the socioeconomic scale often have to “go out” to work to ensure household survival, regardless of cultural norms.

**Female cash-income.** Because many rural Indo-Trinidadian women do not work outside the household after marriage, they do not have an independent cash-income stream. Although their husbands usually provide them with a budget for household expenses, this does not allow for much discretionary spending. Numerous women mentioned becoming involved in agriculture as a way of generating a separate cash-income, remarking that this was “mine” and could not be questioned by their husband.

Both of their mothers told them as young women to always save some money for themselves and not tell their husband. Otherwise, their only cash-income was what their husbands give them, which they had to budget to cover all the household needs. Agriculture is “important because I have a little income for myself and the children” (Cedros, Indo-Trinidadian female farmer).

Despite being the “woman’s” income, however, this money was generally not used to finance personal luxuries, but was funneled back into the family.

Her son is currently attending a tertiary school several hours away, a project which she alone had funded and supported through her poultry operation. Now that he is doing well, she has convinced her husband to help with his books (Cedros, Indo-Trinidadian farm couple).

Afro-Trinidadian women frequently work outside the household and thus have direct access to an independent cash-income. However, they are less likely to receive a secure cash-income from their male partner. Therefore, women may cultivate a separate
garden in order to maintain an independent cash-income stream. This was mentioned most frequently among women in common law relationships.

She tells me that “before, I only worked in the household” and had no cash-income. Then, when she broke up with her partner, she began working as an agricultural laborer, and learned about the garden. She presently has an extensive mixed garden that she cultivates separately from her current partner (Toco, Afro-Trinidadian female farmer).

**Religion**

Many farmers referenced religious objectives as reasons for their involvement in agriculture. In general, Trinidadians are a fairly religious people, and this extends to their perception of agriculture. Hindus, Christians (especially Seventh-Day Adventists) and Rastafarians all expressed a belief that they were “doing God’s work” and found a high level of personal satisfaction in this.

“I am proud to be a farmer. It’s the first thing God gave man to do. We are made from the dust of the earth. We are part and parcel of agriculture. A farmer is the most important person on the face of the earth” (Toco, Afro-Trinidadian male farmer).

**Socioeconomic**

A farmer’s socioeconomic level determines, in large part, what they hope to achieve through agriculture. For farmers with the least resources, their objective is primarily day-to-day survival, and they rely on agriculture for their most basic needs. As farmers gain economic resources, their objectives shift to providing security for their families, and agriculture usually becomes one of a diversity of strategies. The most affluent people are able to selectively invest in agricultural systems that ensure the greatest returns.

**Survival.** For a large percentage of the rural poor, agriculture is simply a means of survival. With limited education and few economic alternatives, many people turn to
agriculture as the only way to provide for their families. While few may own land, there are large tracts of abandoned land in Trinidad, and many people squat. However, these farmers start with limited resources, and, as squatters, do not benefit from formal recognition or assistance. Their production is therefore below potential, as they cannot invest in land improvement. This reinforces their insecurity and tends to keep them at a survival level.

He “grew up poor” and worked in the garden since he was small. All during school, he earned his book money from his garden. “In my education, don’t have big skill, so chose to do agriculture as a way to make a living…have no other choice” (Toco, Afro-Trinidadian male farmer).

For farmers at the survival level, one of their primary objectives is production of food for their own daily consumption. They reported feeling more secure producing their own food, rather than relying on a cash-income to purchase food.

“I am a woodcutter by trade, but I can’t eat wood. If I work government, depend on them, still have to take money and buy food. As a farmer, even if I don’t make money, I can still eat” (Toco, Afro-Trinidadian male farmer).

Although many people aspire to move out of agriculture, there is a perception that agriculture is a safety net. Some connection to agriculture is often maintained to ensure the ability to survive if all else fails.

None of her children or grandchildren was ever really interested in farming, but she says she wants to teach her granddaughter more about farming, because you never know when you will have to rely on the land. “If I die, she needs to know how to take care of herself” (Toco, Afro-Trinidadian female farmer).

**Local employment.** In these remote rural areas, there are limited job opportunities. For someone with minimal education, employment “outside” the village, such as a government job in town, is even less attainable. Therefore agriculture is one of the few sources of employment for many rural people. For those without transportation,
marketing can also be done locally, by selling door to door or setting up a small roadside stall.

“Agriculture is the main thing…if it wasn’t for that, (I’d) be 6 feet under already…Jobs outside are really hard (to get)” (Toco, Afro-Trinidadian farm couple).

Security. For farmers seeking security at a slightly higher economic level, agriculture is often undertaken as one of several activities, in a conscious attempt to diversify their livelihood. These farmers are trying to ensure that they do not fall back to the survival level.

He got a government job a few months ago, so now he works there in the morning, before returning to work on his land. …He has been pleased to get the work, and says that he feels more secure now… (Toco, Afro-Trinidadian male farmer).

However, after obtaining off-farm work, some find the work to be unreliable. Several farmers felt that they had more security of cash-income in farming, and returned full-time to their gardens.

Previously he worked part-time for Petrotin, but he tells me the work was unreliable. He might go in for 3 days and only get one day’s work. Finally he decided to switch to full-time farming (Cedros, Indo-Trinidadian male farmer).

Maximum profitability. While the majority of farmers are limited to a basic or substandard level of production, a few people have adequate resources to invest in their agricultural systems and realize a good return. For these farmers, agriculture is not the last and only option, but rather a desirable economic activity, consciously chosen for maximum profitability.

He stressed that farming can be a very profitable activity, certainly more profitable than the alternative of government work. He took me through a simple calculation to show that even in the worse case scenario a field of watermelon could generate three times as much cash-income. He is a hard-working entrepreneur and has learned how to make money in farming (Toco, Afro-Trinidadian male farmer).


**Life-stage**

In considering how life-stage affects an individual’s objectives, it is important to acknowledge how culture affects the perceived goals of life. Afro-Trinidadian society tends to be individualistic (Ramjohn, 1975), so that objectives are often based on personal goals. In Indo-Trinidian society, “achievement is that of the family and for the family, especially as it adds to their material security” (Green cited in Ramjohn, 1975, p. 15).

**Starting out.** Agriculture is an important option for many young people who are looking to establish themselves without many resources. These farmers invest primarily labor in their gardens, as they cannot afford other inputs.

When they were first married they lived in a little house and both worked all day in the cocoa. They tell me they “had to” as they had a mortgage to pay (Cedros, Indo-Trinidian farm couple).

**Progress.** Many farmers directly link their material progress in house and yard to their garden. Over the years, they invest their profits in their homes and express pride at this tangible evidence of their hard work.

“If it wasn’t for agriculture, I wouldn’t be where I am now. I built my house from my garden. Agriculture gave me everything I own. If I die and born again, I have to start with agriculture” (Cedros, Indo-Trinidian farm couple).

**Female head of household.** Agriculture is often of critical importance to women who are the sole supporters of a household. Women, especially Afro-Trinidian women, may pass in and out of this stage several times in their life, when they change or lose partners. These women are the enduring security for their families, and they, in turn, rely heavily on agriculture to provide food and cash-income. Although less common, single Indo-Trinidian women also use agriculture as a means of supporting their household.
She tells me that agriculture is everything, before it was her interest and now it is her survival, as she is raising three grandchildren by herself. She uses her crops for everything. She eats some, sells some, and gives some away… She works through sun and rain… she works the land all day every day except Saturday, which is her Sabbath day (Toco, Afro-Trinidadian female farmer).

Recovery. Agriculture provides a means of survival for individuals, especially women, who have gone through dramatic life changes and suddenly have to support themselves. Because agriculture does not require intensive inputs, people can start gardening immediately. Agriculture is especially important in these instances, because it provides a means of survival for individuals at their most vulnerable point, such as after a death, immigration, or catastrophic loss of property.

She returned to Trinidad a few years ago and has been rebuilding her farm since then. Her transition back to Trinidad has been difficult, as she has had to start over from scratch. Immediately she cleared some land and planted peppers and tomatoes to try to generate some quick cash. As she tells me, farming is about “survival” at this point; she relies on her sales to bring in money every month (Toco, Afro-Trinidadian female farmer).

For a woman, the loss of a spouse can be devastating, especially if there are still dependent children in the household. Divorce may be doubly difficult, as it bears social stigmas, especially in Indo-Trinidadian society. In these instances, agriculture is the sole security.

As she shows me around, she tells me, “If it wasn’t for the garden, I couldn’t have made it.” Twenty years ago, she was “seeing trouble” when she and her husband had a “falling out.” She had “four children to take care of” so she started planting a few dasheen bushes around the house. From that, she got the idea to grow and sell. She expanded into sweet pepper, cabbage, and string beans, which she sold retail in the market. “I was a single parent; my husband never gave me anything. Without the garden I don’t know what I would have done” (Cedros, Indo-Trinidadian female farmer).

Future easier. As individuals establish themselves in their homes and gardens, they begin to look towards an easier lifestyle, and their objectives for agriculture change.
They no longer want to work as hard as they did initially and begin to envision farming systems that will maintain their lifestyle without requiring as much effort.

When I ask her about the future, she says she “doesn’t love to work hard” so she eventually hopes to get more into tree crops that are less labor intensive (Toco, Afro-Trinidadian female farmer).

**Senior cash-income.** For seniors who leave the workforce, agriculture once again provides an important source of cash-income, especially if they are not receiving a private retirement. Instead of retiring to rest and easy living, these farmers actually increase their agricultural production to compensate for their decreased cash-income.

He used to work off-farm… Since he retired a few years ago, he has begun working on the land full time, and they have greatly expanded their production. He did not receive a retirement package, so they have to work the land to keep a cash-income coming in (Cedros, Indo-Trinidadian farm couple).

Although seniors receive a monthly pension, this cannot provide for all necessities. Especially for individuals with a low cash-income, agriculture remains a crucial way of ensuring their food security. This is of particular importance for older women, who often take in dependents and try to provide for a household on a single pension. For these individuals, agriculture remains as much a matter of survival as it did when they first started out.

She collects a monthly pension of $1000 TT (US $166) / month, that is available to anyone over 65. However, she tells me it is “not enough” to support her household, so she must also “do (her) own thing,” by selling produce from her garden (Toco, Afro-Trinidadian female farmer).

**Life-style**

For many farmers, agriculture satisfies personal objectives related to moral and ethical values. While some of these objectives relate to larger social factors, many reflect the experiences and life style of the individual farmer. This personal satisfaction is an integral part of their overall perception of agriculture as a desirable activity.
National value. Many farmers value agriculture as a way to make a contribution to the nation. While they realize that many people hold agriculture in low regard, they nonetheless express great pride in their role as producers of food.

(We are) “Very proud to have our own produce, help the economy and other people. Agriculture is very important for the country...if agriculture goes down, the country goes down” (Toco, Afro-Trinidadian farm couple).

Work ethic. In rural areas with limited economic alternatives, participation in agriculture is one of the few avenues open for survival and economic advancement. Farmers are proud people, and many speak of agriculture as the only alternative to going on public assistance35.

“That is how we live. We don’t wait for hand-out, (we’d) rather go and plant, cook and eat” (Cedros, Indo-Trinidadian farm couple).

Love of agriculture. Despite all the obstacles that farmers in Trinidad face, they often express a real love and appreciation for their work. More than financial necessity, their deep-rooted love of agriculture has kept them dedicated to their gardens and their livestock. This spirit and commitment offers the potential for tremendous expansion in agriculture, should some of the constraints be removed.

“Apart from financial benefits, (agriculture is) good for peace of mind and good exercise. We don’t do it just for money, we could do something else, (but) we just love agriculture. When you go in the field and start working, you feel good. When you see the crop bearing nice, you feel encouraged” (Toco, Afro-Trinidadian farm couple).

This love of agriculture probably accounts for the tremendous number of elderly people that remain active in their gardens. While businessmen and professional women gladly relinquish their desks at retirement, senior farmers seem loath to turn in their cutlass and tall boots.

35 Public assistance includes a variety of welfare programs for low-income families.
We spy her father-in-law in the garden, cutlass in hand. She tells me he is 81, but still insists on coming to the field. When his family tells him not to work so hard, he asks them “Do you want to kill me?” He tells me he prefers to be in the garden, it keeps him alive…(Cedros, Indo-Trinidadian farm couple).

**Share.** Many farmers routinely share their harvest with family and neighbors. This is not a special event but rather a normal part of daily life. I almost always left a farmer’s house with a gift of produce. Although small exchanges, they are a significant part of community relations and give pleasure to both parties.

Agriculture is “very good, because, besides selling, all my children inherit (receive food) from what I grow, even neighbors and friends. (I am) not always looking to sell, sell; (I) may give away more than (I) sell (Cedros, Indo-Trinidadian farm couple).

**Recreation.** For some farmers, agriculture is primarily a recreational activity. Limited by any of a number of constraints (age, health, land, time), they cannot pursue agriculture as a serious contributor to their livelihood. However, they derive enjoyment from their gardens and cultivate whatever small plot they can.

She tells me that she gardens “for fun” and “to keep busy and active.” She says that even if she wanted to go into agriculture in a big way, she does not have the resources or the help to do so (Toco, Afro-Trinidadian female farmer).

**Health.** The physical activity involved in tending crops and livestock provides the incentive for a number of farmers, who participate in agriculture for health reasons. Elderly farmers feel that gardening keeps them limber and strong, instead of remaining indoors and slowly losing mobility. For a number of young women, agriculture provides an important outlet for exercise. Bound to the household, many wives and mothers get only minimal aerobic exercise and contend with a variety of associated health problems. Gardening has become one way to increase their activity level.

She works alongside her husband in the cocoa patch. She says that she “didn’t love” the work at first, but she now appreciates it for the exercise (Cedros, Indo-Trinidadian farm couple).
**Own boss.** Farmers tend to be highly independent and value the freedom to work for themselves. Farmers who have previously worked off-farm frequently express a heightened appreciation for this independence.

She values being her own boss, on her own schedule. At one point she worked as a domestic and later at a roti[^36] shop, but, even though she had “good bosses,” she felt that she could never relax. Now, if she feels to rest or to just “go and watch the plants,” she can (Cedros, Indo-Trinidadian female farmer).

**Resources**

Farmers’ production decisions are in large part determined by their available resources. Resources enable farmers to better achieve their production objectives. Social variables such as ethnicity, socioeconomic level, gender and even age determine the “internal resources” available to a specific individual at a certain point in time. These variables interact with the “external resources” (markets, infrastructure, etc.) by determining an individual’s ability to benefit from those resources or compensate for missing resources.

Farmers in Trinidad have access to a wide range of internal resources, summarized in the resources code map (Figure 6-2). Resources are grouped into the following categories:

- Ethnicity
- Capital[^37]
- Land
- Labor
- Knowledge
- Attitude

[^36]: Roti is one of the most common Indian dishes, similar to a flatbread sandwich, and is widely available for sale at lunch and dinner.

[^37]: Capital refers here specifically to physical capital, primarily money and the services it can purchase. It does not include land and social capital, which are discussed separately.
Figure 6-2. Resources code map
Ethnicity

While there are no absolutes when discussing culture, there are observable differences between the two ethnic groups in their orientations towards family and the individual. In each case, these social norms can be both a resource and a constraint.

**Family network.** Indo-Trinidadian society is marked by a strong family orientation, which provides a constant support network as well as a safety net in times of hardship. If an individual is constrained by insufficient resources, other family members will often contribute their own resources to overcome those constraints. In this way, the individual has access to a much greater pool of resources, and the family advances together.

The daughter works part-time in the garden, but she is constrained by caring for one of her own children, who has a health problem. However, she still lives at home, and is helped by the rest of the family. The mother says, as a “poor” family, they have always had to pull together (Cedros, Indo-Trinidadian farm couple).

**Marital security.** Marriage, as an integral part of Indo-Trinidadian society, provides couples with secure access to a wider range of resources. This allows partners to invest in a higher level of agricultural activity or try new ventures with less risk.

She says, with pride and gratitude, that her husband will support her in everything; he will buy what she wants and bring it to her at home. When she decided to buy 100 chicks, her husband bought lumber for a pen, and various family members helped her construct it (Cedros, Indo-Trinidadian farm couple).

**Maternal support.** Although Afro-Trinidadian society is often noted for the instability of its conjugal relations, there are strong support networks that run along maternal lines. The primary allegiances tend to be those between mothers and children. In times of need, mothers provide the final, unwavering bastion of support for their children.
and grandchildren. Senior women will often use their own resources, however small, to provide for a child in need.

She is expecting a social worker to come to the house to examine their living conditions for suitability for the children. It is hard to imagine her being so scrutinized and perhaps penalized for her poverty, as she is the primary supporter for herself and her three grandchildren (Toco, Afro-Trinidadian female farmer).

Adult children, in turn, will tend to funnel resources to their mothers (sometimes more than to partners), helping them “build up” their dwelling place and material welfare.

**Autonomy.** Afro-Trinidadian society has an individualistic orientation, which has benefited women by giving them relatively high levels of autonomy in their decision-making. While they may be less secure of their partner’s support, they express confidence in their ability to help themselves. Although their overall production may be limited to their individual resources, they ultimately do not depend on anyone else. This independence is reflected in their freedom to move about with few restrictions.

Her ex-boyfriend wants to move back in, but she told him “NO!” She tells me, “Why would I want to give up my own space, my own freedom?” She says that she couldn’t come and go as she liked if he lived with her. She expresses her contentment at her present situation… she can “provide for myself” with the cash-income from her market and garden (Toco, Afro-Trinidadian female farmer).

**Capital**

Capital resources allow farmers to increase agricultural inputs and thus improve productivity and profit. However, most farmers in these regions function at a relatively low socioeconomic level and have limited access to the following resources.

**Off-farm cash-income.** Acquiring employment off farm increases a farmer’s overall financial welfare, as well as their ability to invest in their agricultural operation. Wage labor may not be highly lucrative in these areas, but it improves economic security by diversifying cash-income streams. However, there are limited employment
opportunities in these areas, especially Toco, due to their isolation. The situation is even more difficult for women, as many employers preferentially hire men. The one exception is the growing tourist industry in Grande Riviere, which has recently provided jobs for many local women.

The first hotel was established less than 10 years ago and now employs about 20 people, primarily women. A second hotel has also opened and hires 7 or 8 more. Quite a few young men have found work as “turtle guides.” The major drawback is the off-season, when there are no turtles to draw tourists. This is a period of hardship, and people must stretch and skimp to cover expenses (Toco).

**Spouse cash-income.** For married couples, a spouse’s earnings can provide a significant source of cash-income. This is especially beneficial for women, who are less likely to hold outside jobs. These earnings may be made available for provision of household necessities or investment in agriculture. However, such financial transfers are the product of ongoing negotiations between partners and may not be constant or equitable.

A few months ago she asked her husband to give her $600TT (US$100) so she could “invest in the land.” With that she has bought several kinds of seed and agricultural chemicals. She says that he makes $150TT (US$25) per day (at his off-farm job), whereas she might only make $300TT (US$50) per week from the garden (Cedros, Indo-Trinidadian female farmer).

**Transportation.** One of the most important capital resources is access to personal transportation for movement of agricultural goods. Both of these regions, especially Toco, are at a significant distance from retail or wholesale markets. Therefore, farmers must limit their production to what they can sell locally, or else pay the high cost of transportation, often expressed in the reduced price they receive from middlemen.

He says there is money in farming, but only if you sell your own produce. He gives me an example of the price they receive for bananas at the farm gate versus the price they receive when they carry their bananas to the retail market (Toco, Afro-Trinidadian male farmer).
This is such a significant resource that it is one of the first investments farmers make if they acquire a little cash-income.

She is hoping to buy a truck in the future. She finds it a burden to always struggle to find transport for her crops, and to time her harvesting around someone else’s schedule. If she had her own vehicle, she could also drive around and sell (Cedros, Indo-Trinidadian female farmer).

**Hired labor.** For those with sufficient capital, the ability to hire agricultural laborers allows for expanded production. However, in many regions of Trinidad it is difficult to get help, as agricultural labor is relatively low paying and therefore unattractive to most laborers. As a result, farmers must identify villages with few alternative employment opportunities in order to recruit willing workers.

He occasionally hires people to help clear the land and do other simple tasks. He mostly hires men from Matelot, as “nobody” in Grande Riviere wants to work in agriculture, they prefer to “do other things” (Toco, Afro-Trinidadian male farmer).

The ability to hire laborers is especially beneficial for women, as they typically will not clear land themselves. They often wait on a man’s assistance before they begin to cultivate a new piece of land.

She has done all different kinds of work in her garden, except for clearing the bush. She always hires a man to prepare the land. She normally pays a “mister” from the village to clear the land for her. However, she tells me recently she has been asking but she can’t get him “to give me another day of work” (Toco, Afro-Trinidadian female farmer).

**Remittances.** Although not as prevalent as in many Caribbean countries, remittances are an important capital resource, especially for older women whose children have traveled abroad for education and work. In most cases, this money is spent on fairly basic needs, such as building up their living quarters.

She has finished the foundation of her new house and is waiting for her daughter in England to send money to pay for the materials. She says she “depends” on her three daughters abroad, especially the one in England, because she is a nurse (Toco, Afro-Trinidadian female farmer).
**Pension.** A lot of elderly people in these rural areas have little or no cash-income and depend heavily on their pension check. Although it provides a crucial source of assistance, the pension was only intended to provide for the most basic necessities. When the situation is further stressed by the presence of other dependents in the household, even basic needs may not be met.

Her sister has recently moved in with her, so she is now supporting both of them. She worries, as she is living off her pension check, which is barely enough to provide for her alone...Now she has no money and no food until her pension check comes next week (Toco, Afro-Trinidadian female farmer).

**Retirement cash-income.** A few seniors, most commonly men, receive a cash-income when they retire from a private company or government office. Although this may not completely satisfy household needs, it provides more security than the pension and changes the nature and urgency of the agricultural enterprise.

She says they “do not have to do this” (make a garden), telling me they have adequate cash-income from her husband’s retirement income. They continue to garden to “stay busy and help ourselves,” and because, after all, “we have the land” (Cedros, Indo-Trinidadian farm couple).

**Land**

Land is the most basic requisite for agricultural production. Although there is a large amount of uncultivated farmland in Trinidad, relatively few people have secure access to it. Farmers with legal access to land have a secure foundation and are eligible for a variety of government subsidies.

**Private land.** Most access to private land is acquired through family inheritance. The majority of this is among Indo-Trinidadians, who acquired private landholdings at the end of indenture and have passed it down through the generations. Having secure access to private land can be, in itself, incentive to engage in agricultural production.
The 5 acres he is working is part of a larger estate that his father and grandfather had owned. He had grown up primarily in town...however when his father died, he decided to move up to the land and try farming. When others students had been obsessed with looking for work, he had just laughed, “Look for work?” because he knew he had access to all this land, needing work, so that in essence “work was looking for me” (Toco, Afro-Trinidadian male farmer).

Less frequently, land is actually purchased, usually as the result of years of saving in order to realize a dream of farming.

They bought the 2.5 acre plot surrounding their house several years ago. They already had a loan out, so it was difficult to get another. However, they persevered, and she shows me with pride the very official looking deed (Cedros, Indo-Trinidadian farm couple).

**Leased land.** For most Afro-Trinidadian farmers, the only secure way to access land is to apply for a lease of government owned “state land.” Only limited amounts of state land are available for distribution, and leases are highly sought after by area farmers. For some farmers, the acquisition of a lease provides sufficient incentive to begin agricultural production.

She decided to go into farming on her own primarily because of the land distribution. Once she had the land, she knew that she could make a living from that, as she received a really prime piece. Her 10 acres is bounded by an access road and a river and is mostly flat or gently rolling (Toco, Afro-Trinidadian female farmer).

**Accessible land.** The accessibility of the land is determined both by the distance from the farm household and the presence or absence of a viable “access road” for vehicular traffic. Accessibility often determines whether a particular parcel is cultivated or not. If the distance is deemed too great, private land is sometimes abandoned in favor of squatting on closer land. Women and the elderly benefit especially from easy land access.

She told me she was too old to climb the steep hill between her house and land, so she was having a new house built on the corner of her land. Mercifully, her piece of
land was flat and immediately adjoining the access road, making it easy for her to navigate (Toco, Afro-Trinidadian female farmer).

**Labor**

For the majority of farmers, labor availability places the ultimate limits on their scale of production. When all other inputs are scarce, labor is used as a substitute. If a farmer cannot afford herbicide or access a tractor, s/he weeds by hand. Therefore, labor is a critical resource. However, hired labor is difficult to find and often prohibitively expensive. Therefore, many farmers seek to access labor through a variety of social channels.

**Couple labor.** Couples that work the land together benefit greatly from having a stable, constant supply of labor. This not only increases their total production, but also allows for the differentiation of labor, such that one partner can sell in the market while the other works in the garden. This is especially common among older Indo-Trinidadians.

When I arrived, they were working on a piece of land near the road, clearing weeds with cutlasses. Both of them are around 70, yet they look vigorous, energetically attacking the bush. They have an extensive plantation of bananas and plantain. The trees look healthy, and they have managed to keep the weeds under control. I remark with wonder on the amount of land that the two of them are managing (Cedros, Indo-Trinidadian farm couple).

**Housewife labor.** Men with wives or partners at home benefit from their labor in the household. This frees the men to work at jobs outside of the home to generate a cash-income, while being assured of food and domestic comforts when they return home.

She is proud that in all their years of marriage, her husband has never been left waiting for a meal. She wakes at 3 to start cooking breakfast… “Sometimes I jump out of bed, I am so afraid that I will sleep away again!” She also cooks lunch and “packs his kit (lunchbox) and puts it in the car.” Her husband rises at 4 and leaves for work at 5:30. By mid-morning, she starts to tend to the house, washing clothes, “sweeping out,” or sewing (Cedros, Indo-Trinidadian female farmer).
**Network labor.** Because labor is such a crucial, yet constrained, resource at the individual and household level, farmers access labor through a variety of networks. These networks are a form of social capital and rely on shared identities and/or objectives. Such affiliations may be based on family ties, religious affiliations, gender, political party, or occupation.

She said they are friends and do everything “hand in hand.” They even go to the same church...She had been planning to help her friend plant cassava, but when the day came she was feeling too ill, so her friend went up to her land and planted the entire field for her (Toco, Afro-Trinidadian female farmer).

**Family network.** Although the family farm is declining, some farmers still have access to the labor of their nuclear family. The focus on education and the advent of increased economic opportunities has taken many children off-farm. However some rural families continue to work together on the land.

The father is the primary decision-maker, but the son makes a significant contribution as far as labor...He doesn’t get paid for working on his parents’ land, but he seems to view it as a natural contribution to the family (Toco, Afro-Trinidadian male farmer).

In periods of special need, members of the extended family may contribute their labor. This was the case for the female farmer mentioned below. She had been recently widowed and was trying her hand at the garden for the first time.

She is planning to plant a few hundred banana suckers with the help of her brother. They only recently finished clearing this area... Her brother has a job dredging offshore, but he has a month or so off from work and is helping her “set up.” After that she says she will be on her own, although she has a sister she can ask for help (Cedros, Indo-Trinidadian female farmer).

**Farmer network.** Many Afro-Trinidadians described a “guyap” system of labor exchange that used to be common among farmers in that region. No such formal arrangements were reported currently, although many farmers express a desire for the revival of such a system. Several farmers did mention having informal arrangements with
each other for the occasional exchange of labor. This usually occurs among farmers who share some other affiliation, such as church or family.

He has decided to exchange labor with another local farmer. They will both work one day on his land and then one day on the other. He says this is a good system because they keep each other motivated by seeing so much progress in one day, and actually get more than twice the amount of work done. Also, if there is a short-term bottleneck, eg for planting or harvesting, they will work together to accomplish that (Toco, Afro-Trinidadian male farmer).

**Female network.** Networks are an especially important source of labor for women, as they typically have less ability to hire labor workers and have less access to male farmer networks. Women tend to have parallel networks to men, with limited intersection.

“I would love that (to be part of a farmers’ group). There are things that we have to do, and be serious, because the majority of farmers in this area need help, especially women, because sometimes women are by themselves alone. (Right now)...it is just me and WA; if I need help, she helps me.”

Labor exchanges between women are more common among Afro-Trinidadian women, who often have a network of “friends” outside the family, than among Indo-Trinidadian women who are more directed inwards to the family and household and are less mobile.

I am amazed to see the changes in her land since my first visit. For a woman who is supposedly ill, she has cultivated an extended area, and a tall cassava field greets us as we enter her land. She tells me this is the patch that her friend ME planted for her when she was sick (Toco, Afro-Trinidadian female farmer).

**Religious network.** As in most other areas of life, the religious networks provide a significant labor resource. Many farmers who exchange labor, or otherwise just lend each other a hand, belong to the same church. This network is most frequently used by those who otherwise have very low resources, especially elderly Afro-Trinidadian women.

While I watch her 2 granddaughters, WA takes the chance to step outside with a church friend to help her cut down a bamboo patch (“stool”). I have noticed that
she doesn’t waste help of any kind; with all the demands on her time, the
opportunity to get a friend’s hand to help out is never overlooked. She had
constructed an arbor for her babadeen vine over the last several weeks with the help
of some friends in the church (Toco, Afro-Trinidadian female farmer).

Knowledge

Knowledge is a key resource for any entrepreneur, but is especially vital for
farmers due to the inherent risk of agriculture with its dependence on unpredictable
weather and markets.

He told me the greatest problem for farmers was the riskiness of the venture, in that
any pest or disease could greatly reduce or eliminate their profit. He perceived this
risk as primarily a problem of inadequate knowledge on the part of the farmer. If
they had more training they would know how to cope with problems and assure a
profitable harvest (Toco, Afro-Trinidadian male farmer).

There are many types of information that are important for a successful agricultural
enterprise, from knowledge of cultivation techniques to the latest trends in the global
marketplace. In the early stages of production, farmers’ knowledge influences their
selection of crops and cultivation techniques. Whether farmers subsequently flourish or
fail depends in large part on their continued access to current information that allows
them to adapt to changing conditions. Consciously or unconsciously, farmers continually
add to their knowledge base as they learn how to improve their management practices,
either through experience or through access to external sources of information. Whether
that knowledge then benefits other farmers depends in large part on the existence of
effective communication networks.

The sources of knowledge that are available to a specific individual are directly
related to their social identity. As discussed earlier, social variables determine, in large
part, an individual’s resources and constraints. These in turn affect their ability to access
information. For instance, a gender constraint on mobility limits exposure to knowledge
resources that are external to the community, such as agricultural organizations. If one source of information is less available, farmers attempt to compensate by accessing other resources. Many farmers in these areas rely primarily on individual experience and social networks because they have limited access to agricultural organizations.

During the qualitative portion of my research, farmers mentioned numerous sources of knowledge. Eight of these (family, spouse, other farmers, Extension, farm shops, other agricultural organizations, reading, and the radio) were selected for inclusion on the survey, to evaluate the importance of each source. For the purposes of this analysis, “importance” is defined as the relative percentage of farmers that make use of the knowledge sources. It does not refer to frequency of individual use or the value of the information provided. The data was analyzed for differences by farm gender and ethnicity. The findings (Table 6-1) are listed in order of importance to each farmer group.

This table clearly shows that social groups differ in their relative use of knowledge resources. While family is important for all farmers, there are noticeable differences in the use of other knowledge resources. Overall, farmer networks are more important for Afro-Trinidadian farmers (50%) than for Indo-Trinidadian farmers, while the reverse is true of Extension, with only 20% of Afro-Trinidadians accessing it, versus 50% of Indo-Trinidadians. Spouses are an extremely important source of knowledge for farm couples (95%), moderately important for female farmers (40%), but not at all for male farmers (10%). A third to a half of farmers use farm shops as a source of information, while mass media channels are used by less than 10% of farmers. Overall, Indo-Trinidadian female farmers have the least access to knowledge resources.
Table 6-1. Importance of knowledge resources, analyzed by ethnicity and farm gender (expressed as a percentage of each group’s use of that resource).

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<tr>
<th>Farmer group</th>
<th>Importance of knowledge resource</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ethnicity</td>
</tr>
<tr>
<td>Farm gender</td>
<td></td>
</tr>
<tr>
<td>Female farmer</td>
<td>Afro</td>
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<tr>
<td></td>
<td>Indo</td>
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<tr>
<td></td>
<td>Total</td>
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<tr>
<td>Male farmer</td>
<td>Afro</td>
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<td></td>
<td>Indo</td>
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<td></td>
<td>Total</td>
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<tr>
<td>Farm Couple</td>
<td>Afro</td>
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<td></td>
<td>Indo</td>
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<td>Total</td>
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<td></td>
<td>Indo</td>
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<td></td>
<td>Total</td>
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</tbody>
</table>
Network knowledge. Networks are the most important source of information in both of these communities. Farmers depend on a variety of networks, including family (80%), other farmers (40%), female networks, and religious networks. As with labor networks, knowledge networks are a form of social capital. Networks are usually based on a common affiliation that creates a shared identity among individuals. Knowledge does not diffuse evenly through a community, but follows communication channels created by these networks. Therefore, farmers on the outside do not have equal access to this knowledge.

Family networks. The family network is the most important source of agricultural knowledge for farmers in both communities, regardless of ethnicity and farm gender. This contrasts with Ramjohn’s finding that the “family reference group” is significantly more influential for Indo-Trinidadian farmers than for Afro-Trinidadian farmers (Ramjohn, 1975). On average, 80% of farmers use this resource as their primary source of information.

I asked how she had learned to farm, and she said from her aunt. When she was 2, her Mom left her with her aunt, who used to grow everything on her farm in Tobago. When she moved to Trinidad, she worked with her uncle, who also farmed, and then with her husband (Toco, Afro-Trinidadian female farmer).

However, only 65% of Indo-Trinidadian female farmers receive agricultural information through their family. This highlights an important trend: Indo-Trinidadian female farmers have, overall, the lowest access to knowledge resources, which may reflect their lower educational level as well as cultural limitations on mobility.
Farmer networks. Farmer networks are the second most important source of knowledge overall. Many farmers report learning how to farm from “old heads.” Farmer networks also help to disseminate current information between active farmers.

He says that just because he doesn’t attend the courses, it doesn’t mean that he can’t learn the information. He mentions carrying an infested branch to show MA, one of the farmers who had attended the course. MA diagnosed it as thrips and recommended a control measure. Thus, he felt that he did learn a lot informally from other farmers (Toco, Afro-Trinidadian male farmer).

There is a noticeable difference in access to farmer networks by farm gender. Farmers are an important network for male farmers (55%), and moderately important to farm couples (35%), however relatively unimportant to female farmers (20%) (Figure 6-3).

![Figure 6-3. Access to agricultural knowledge through other farmers, analyzed by farm gender.](image)

Access is expressed as a percentage of each farm gender group.
Ethnicity also influences the use of farmer networks; 50% of Afro-Trinidadians rely on other farmers for information, versus only 30% of Indo-Trinidadians. This supports Ramjohn’s finding that “neighbors” and “friends” had significantly more influence on Afro-Trinidadian farmers’ practices than on Indo-Trinidadians (Ramjohn, 1975). To explain this, he refers to Green’s thesis of different cultural socialization patterns. Green proposes that for Afro-Trinidadians “extra familial interactions and activities tend to be more important. All members of the family are typically independent, individualistic, and outwardly drawn toward interaction with extended matrilineal kin and many non-relatives” whereas “the East Indian works by himself and preferably for himself38. Group work exchanges are not characteristic” (Green in Ramjohn, 1975).

He had asked some farmers for advice (on a new crop), but he says they were reluctant to give him any information, perhaps perceiving him as competition (Cedros, Indo-Trinidadian male farmer).

**Female networks.** Women often have distinct networks and thus tend to share information primarily with other women. Women tend to be less active in external organizations but often predominate in local organizations such as the church and parent-teacher organizations. They may not be included in formal farmer networks and activities, which tend to be predominantly male. Therefore, they socialize and communicate in different channels than men. For women to attend public events, they often need the encouragement or assistance of another woman.

WA was finally able to go to another Extension course, pepper production, offered at the Young Farmers Center in Cumana. She took a friend, another female farmer, who actually grows peppers, and has been wanting to attend the courses since WA told her about them (Toco, Afro-Trinidadian female farmer).

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38 In this case, “for himself” refers to the family, not the individual.
For Indo-Trinidadian women, this network is both more important and less accessible, as many women are primarily focused on the household and have limited public interaction, therefore they have little exposure to new information.

She stays home while her husband works outside. She has lots of houseplants and flowers adorning her yard, and WA tells her she should start a little business for herself, propagating and selling flowers. She goes into great detail encouraging the younger woman, telling her that is how she started, and that it would give her some cash-income for herself. Later WA tells me that many women here stay home and need encouragement to do “something for themselves”(Cedros, Indo-Trinidadian female farmer).

**Religious networks.** Religious affiliation is a primary determinant of the movement of information throughout the community. In both regions, farmers introduced me primarily to other farmers in their religious network. These same networks dictate the dispersal of information from Extension and other agricultural organizations.

Cultural patterns of socialization interact with religious norms to create distinct networks. The Afro-Trinidadian tendency to socialize outside of the family easily meshes with Christianity’s tradition of group worship. “Religious activities are public events, which encourages extra-familial relationships” (Ramjohn, 1975, p. 15). The Afro-Trinidadian church network is expansive, facilitating the transmission of information.

The more inward, familial focus of Indo-Trinidadian society interacts in different ways with Hinduism and Christianity. “Most Hindu religious ceremonies are performed in the home rather than at the temple. This tends to further the ‘family-centered’ orientation of the East Indian” (Ramjohn, 1975, p. 16). Thus, while Hindus will meet at special events in the temple, there is not the constant interaction that characterizes church groups. This may limit the frequency of information flow within this network.
For the Christian Indo-Trinidadian, the church provides a strong network outside of the family, but also incorporates the cultural focus on the home. I was several times invited to worship services or “thanksgivings” that were offered in Indo-Trinidadian homes, in the same way a Hindu “prayers” would be. For those in the network, these occasions, along with weekly church services, create a strong primary network.

Like the Church groups, there is often an affiliation among Rastafarians that may include a sharing of information and labor. Because many Rastafarians tend to live away from the central village areas, they have limited contact with the church network, which may cause them to be overlooked by outside.

**Spouse’s knowledge.** A spouse’s knowledge is the third most important source of information overall, however it has the most noticeable difference by farm gender. For farm couples of both ethnicities, their spouse is their most important source (95%) of agricultural knowledge (Figure 6-4). Forty percent of female farmers use their spouses’ knowledge versus only 10% of male farmers, despite the fact that more male farmers than female farmers are in conjugal relationships. This may indicate a gender bias, or it may simply be that many of the women’s spouses had prior experience in farming, whereas the men’s spouses are often housewives, who have little agricultural experience.

This difference in knowledge sharing between farm couples and individual farmers highlights the farm gender phenomena. Individual farmers, even married farmers, have less access to agricultural resources than farm couples. The social relations between farming partners creates a shared agricultural resource that is distinct from the benefits derived from a spouse’s labor off-farm or in the household. In sharing the responsibility for the agricultural enterprise, farm couples enjoy the synergistic effect of their combined
efforts. Each partner has access to certain resources, and together they create a new resource through their cooperative enterprise.

Figure 6-4. Access to agricultural knowledge through a spouse, analyzed by farm gender. Access is expressed as a percentage of each farm gender.

It is noticeable that Indo-Trinidadian farm couples make the most use of their spouse’s knowledge (100%), while Indo-Trinidadian female farmers make the least (30%). This is probably a factor of the age difference between these two groups, which incorporates both cultural and economic changes. Indo-Trinidadian farm couples are senior farmers, who have shared a lifetime and cultural tradition of agricultural work. In contrast, Indo-Trinidadian female farmers are predominantly young wives, with husbands who work off-farm and thus have limited experience in agriculture.
Experience. Living in relatively remote areas, most farmers have always relied on themselves and have acquired a lot of knowledge from their own experience. Farmers are, by necessity, keen observers, and have acquired a working knowledge of the most common cultivation techniques and problems.

She has farmed “since she knew herself” and professes a real love for the work. She shows me her “seed bank” of bhaji (spinach). She has left the best plants to go to seed and dry on the stalk. When the rains come, she will scatter them. Later I see pigeon peas and okra drying in her shed. She says that most people around here save their own seeds (Cedros, Indo-Trinidadian female farmer).

While they may have a limited understanding of the science behind their practices, farmers’ observations reveal a keen understanding of the basic principles of agriculture.

She plants one of the banana suckers in the middle of the burned bamboo patch. She tells me it is “fat dirt,” meaning that it is high in nutrients (Toco, Afro-Trinidadian female farmer).

This practical experience is, in most cases, largely untapped by agricultural organizations. Farmers’ casual comments often reveal potential sources of new knowledge that could prove invaluable to the agricultural community, if researched and developed.

“If a plantain dies from moko disease, and you plant sikia fig (banana) in the same hole, the fig grows well. (They) need to research that” (Toco, Afro-Trinidadian female farmer).

Agricultural organizations. Agricultural organizations have the potential to be a highly significant resource for farmers. As a source of new information, organizations can help farmers stay abreast of the latest technologies and shifts in the global marketplace. In Trinidad, as in much of the developing world, there are a great variety of agricultural organizations, both national and international, with various mandates and

39 Moko disease is one of the most devastating diseases in plantains and presently has no control measures.
approaches. As the outreach arm of the Ministry of Agriculture, the Extension Division has the greatest impact on and interaction with farmers. Extension is very important as a knowledge resource in several ways:

- It directly provides agricultural knowledge for improved productivity
- It increases farmer awareness of other agricultural resources of the Ministry
- It links farmers with other organizations

**Agricultural knowledge.** Overall, Extension is the fourth most important source of agricultural knowledge, with 35% of farmers reporting use of their resources. However there is a noticeable difference by ethnicity (Figure 6-5).

![Agricultural information from extension](image)

Figure 6-5. Access to agricultural information through the Extension Division of the Ministry of Agriculture, analyzed by ethnicity.

Access is expressed as a percentage of each ethnic group.

In actuality, this is probably a regional difference that appears as ethnicity due to the ethnic homogeneity of each region. The Toco region, while nominally under the
auspices of the St. Andrew county office in Sangre Grande, has no Extension officer assigned to any of its districts. In contrast, the Cedros region has a dynamic and proactive county office in Pt. Fortin. The effect of this difference is highly visible in the statistics: for Indo-Trinidadians in Cedros, the Extension office is the second most important source of agricultural information, with 50% of farmers reporting use of this resource. Many of the farmers who do access the Extension office are very positive about their relationship with the county office.

“I feel confident that the guy in Pt. Fortin (the Extension officer) will visit if I have a problem…(they are) nice people in Pt. Fortin, very helpful. Most of the things I know now are through Extension. From family (I) knew traditional ways…Extension brings modern technology. Every week (I) see officers” (Cedros, Indo-Trinidadian female farmer).

In contrast, the absence of any district officers in Toco has resulted in only 20% of Afro-Trinidadians using the resources of the Extension division, making it only their fifth most important source of information.

“We in this area, not getting any justice…I would like) more visits from officers, have officers come up on a regular basis, talk to you, give advice, encourage. Everybody forget we…” (Toco, Afro-Trinidadian farm couple).

To compensate for this gap, in recent years the officers from the Farming Training Center (FTC) at the Central Experiment Station have periodically traveled to different villages in Toco and presented courses on a variety of topics. In this way, the FTC has become the most important resource for external agricultural knowledge in the region. However, these intermittent interactions cannot replace the long-term relationship that an outreach officer could cultivate.

All the attention they get has been through the FTC, so most farmers will directly call one of them, as opposed to a county officer, when they need assistance. MA says they have been really helpful to local farmers. “I got a lot of information, there were plenty of things I didn’t know” (Toco, Afro-Trinidadian male farmer).
The importance of the knowledge resources that Extension provides is evident in the impact they have on farmers’ own knowledge and ultimately their practices. The information that Extension provides may lead farmers to modify existing practices or attempt entirely new techniques.

She shows me several new flats of seedlings she has planted since taking the Extension course. She has very healthy looking cabbage, squash, cucumbers, and pigeon peas. She says the course was very helpful; for instance she “didn’t know” that she had to wet the promix before planting seeds, and she now uses fertilizer in the holes before planting out (Toco, Afro-Trinidadian female farmer).

Extension can also provide crucial information on what Not to do, as was the case of one longstanding female farmer who attended her first Extension course with me. The information she learned in one session went on to impact the other farmers in her network.

She had been shocked to discover at the Extension course that her three favorite “chemicals” (pesticides) were the three most deadly. Not only has she stopped using them, but she also has told other farmers, and they have stopped as well. She asked for less toxic sprays at the agri shop, and those have been working fine for her (Toco, Afro-Trinidadian female farmer).

The actual impact of outside knowledge on a farmer’s practice is determined by many factors. The method of presentation plays a large part in determining farmer interest and retention, as well as the actual appropriateness of the material presented. Increasingly, the trend is away from a lecture format and towards a more participatory style of extension. In Trinidad, this was attempted in recent years through a pilot Farmer Field School, which brought farmers and Extension officers together in co-discovery projects (Ganpat, 2002). This experience has influenced the general approach of participating officers, who were trained in participatory techniques. Their new teaching style has been well received by farmers.
The Extension course was presented over two days. The first day was done in the standard lecture format, but she really enjoyed the second day, which was taught by an officer fresh from the Farmer Field School. “At all the others (courses) he talked; this time he asked us more about our problems and observations. We could talk as much as we wanted, and ask questions…” (Toco, Afro-Trinidadian female farmer).

**Access to Ministry resources.** In addition to direct provision of agricultural information, Extension fulfills a very important function as the outreach arm of the Ministry of Agriculture. One of its objectives is to increase farmer awareness of and access to the many services available through the Ministry. This is accomplished through the county offices, and especially the work of the district officers, who are responsible for farmer outreach. The importance of having assigned officers is visible in Table 6-2, which highlights the different levels of awareness and access of farmers in Cedros, which has active district officers from the Pt. Fortin office, and Toco, which has no district officers.

All groups of farmers report being aware of the farmer registration program, as this is a long-standing program and one that has direct benefits for farmers. A third of farmers are registered, with little difference by region. However, there is a noticeable difference by farm gender, with many fewer female farmers registered (11%)\(^{40}\) versus 45% of male farmers and farm couples. This is probably due to the lower incidence of female land titles, as well as cultural gender norms and limited female mobility.

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\(^{40}\) My survey figures are comparable to the census as far as the percent of male farmers and total farmers registered in each region. However, I found a much smaller percentage of registered female farmers than the census. This may reflect: 1) the greater time I had to identify more of the truly marginal and “invisible” female farmers or 2) farmer reluctance to admit to the “official” census enumerators that they were not registered.
Table 6-2. Access to Ministry resources, analyzed by ethnicity and farm gender (expressed as a percentage of each group).

<table>
<thead>
<tr>
<th>Farmer group</th>
<th>Type of Ministry resource</th>
<th>Region</th>
<th>Aware of registration</th>
<th>Registered</th>
<th>Aware of subsidies</th>
<th>Received subsidies</th>
<th>Received farm visit</th>
<th>Ag training</th>
<th>Ever use county office</th>
<th>Frequent Use County</th>
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<tbody>
<tr>
<td>Female farmer</td>
<td>Toco</td>
<td>82</td>
<td>6</td>
<td>30</td>
<td>0</td>
<td>6</td>
<td>30</td>
<td>59</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cedros</td>
<td>91</td>
<td>14</td>
<td>86</td>
<td>29</td>
<td>71</td>
<td>30</td>
<td>66</td>
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<td></td>
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<tr>
<td></td>
<td>Total</td>
<td>87</td>
<td>11</td>
<td>61</td>
<td>16</td>
<td>42</td>
<td>30</td>
<td>63</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Male farmer</td>
<td>Toco</td>
<td>100</td>
<td>43</td>
<td>51</td>
<td>6</td>
<td>6</td>
<td>23</td>
<td>64</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cedros</td>
<td>95</td>
<td>46</td>
<td>86</td>
<td>40</td>
<td>76</td>
<td>61</td>
<td>94</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>97</td>
<td>44</td>
<td>69</td>
<td>23</td>
<td>40</td>
<td>41</td>
<td>78</td>
<td>25</td>
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</tr>
<tr>
<td>Farm Couple</td>
<td>Toco</td>
<td>100</td>
<td>35</td>
<td>30</td>
<td>0</td>
<td>6</td>
<td>24</td>
<td>82</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cedros</td>
<td>100</td>
<td>56</td>
<td>94</td>
<td>38</td>
<td>75</td>
<td>38</td>
<td>94</td>
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<tr>
<td></td>
<td>Total</td>
<td>100</td>
<td>45</td>
<td>61</td>
<td>18</td>
<td>39</td>
<td>30</td>
<td>88</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Toco</td>
<td>96</td>
<td>32</td>
<td>41</td>
<td>1</td>
<td>6</td>
<td>25</td>
<td>67</td>
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<tr>
<td></td>
<td>Cedros</td>
<td>94</td>
<td>39</td>
<td>88</td>
<td>36</td>
<td>74</td>
<td>46</td>
<td>86</td>
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<td>Total</td>
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<td>35</td>
<td>65</td>
<td>20</td>
<td>40</td>
<td>35</td>
<td>76</td>
<td>18</td>
<td></td>
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</tbody>
</table>
All the other services of the Ministry show a marked difference by region, highlighting the importance of outreach officers. Most of the farmers (88%) in Cedros are aware of the Agricultural Incentive Program, versus only 41% of farmers in Toco. The impact of this on farmers’ resources is illustrated by the fact that only 1% of Toco farmers have ever received subsidies, while more than a third (36%) of Cedros farmers have received subsidies.

This is related in large part to the lack of outreach in Toco, as only 6% of Toco farmers have ever received farm visits from an Extension officer, versus 74% in Cedros. To compensate for the lack of assigned county Extension officers, the Farmer Training Center periodically offers courses in the Toco region, accounting for the 25% of farmers who have attended agricultural training courses. However, this is still lower than the 46% of farmers in Cedros who have attended trainings, which county Extension officers offer in local homes and venues on a regular basis.

Unless farmers have an established relationship with the outreach officers, who encourage them to see the office as a knowledge resource, they tend to use the county office only for regulatory matters, (registration, land issues, subsidies). Thus, while 67% of Toco farmers and 86% of Cedros farmers have occasionally used the county office for regulatory matters, only 1% of Toco farmers report “frequent use” of the county office for all manner of assistance, versus a full third (36%) of Cedros farmers who access the county office on a regular basis, for everything from seeds to farm apprentices.

The difference in farmers’ access to Ministry resources in Toco and Cedros illustrates the importance of an active county Extension office and outreach officers.
Cedros farmers utilize much more organizational assistance because of the county Extension office in Pt. Fortin. Farmers in Cedros, through consultation with Extension, “discovered” a new disease in plantain and were formulating a response, while farmers in Toco had received no education about the disease six months after the “discovery,” despite the fact that they were much more reliant on plantain. Several farmers in Cedros had benefited from subsidies under the Ministry’s Cocoa Revitalization Project, while farmers in Toco were completely unaware of this program, despite the fact that cocoa is more prevalent in Toco. Farmers in Cedros also had access to seeds and seedlings through the county office, neither of which was available to Toco farmers.

This illustrates the potential gains for farmers in Toco, if a closer county office were established, or if the existing office in Sangre Grande assigned outreach officers to cover those districts.

**Linkages with other agricultural organizations.** The Extension Division, as the official liaison to farmers, plays an important role in linking farmers to other organizations. In Trinidad, there are a number of agricultural organizations with a wide array of resources. During the survey, I asked farmers whether they had ever used the services of 10 different agricultural organizations as sources of agricultural knowledge:

- Four governmental organizations: Ministry of Fisheries, Ministry of Forestry, National Agricultural Marketing and Development Corporation (NAMDEVCO), and Sugarcane Feed Center (SFC)
- Two academic organizations: Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) and the University of the West Indies41 (UWI)
- Four international organizations: Caribbean Agricultural Research and Development Institute (CARDI), Caribbean Network for Integrated Rural

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41 UWI has a Faculty of Agriculture and Life Sciences that is involved in agricultural research and teaching.
Development (CNIRD), the Food and Agriculture Organization (FAO) and the International Institute for Cooperation on Agriculture (IICA)

Currently, only 5% of farmers in my study areas have accessed any of these organizations. However, farmers lucky enough to link with these organizations, are often very enthusiastic about and appreciative of the knowledge they gained.

(The organizational program) “was one of the greatest things in my time, I learned all sorts of different things, anything you want. I did a lot of agriculture…(The program) helped encourage me in agriculture” (Toco, Afro-Trinidadian female farmer).

Given the lack of organizational outreach in these isolated areas, the Extension office is crucially important in helping farmers access those resources. Because most access is through the Extension office, resources tend to flow to farmers that are recognized by Extension.

She had taken a course that IICA had offered several years ago. I ask how she learned about the course; she says IICA collaborated with the Extension office, and the office called WA. She tells me that “WA gathered a group of women” to participate in the course (Cedros, Indo-Trinidadian female farmer).

Whether a community benefits from a particular resource is often due to the presence of an active Extension office. For instance, the Research Division of the Ministry of Agriculture had identified cassava farmers in Cedros through the Extension office when it was researching a specific disease. A community without such a liaison may be bypassed by organizations that do not have the time to establish linkages themselves.

Farm shops. Extension officers often lament the fact that farmers rely more on farm shops than they do on the Ministry of Agriculture. In fact, farmers report using the Extension Division slightly more than the farm shop for agricultural information (35% vs. 30%). Afro-Trinidadian farm couples report the highest use of the farm shop (50%)
probably due to the lack of a district officer in the region, as well as the greater ability of two active farmers to seek out information.

Farm shops offer direct advice from employees at the time of purchase, as well as information from agricultural chemical companies, such as courses on new products, farmers’ almanacs, and even visits to farmers’ fields (for a fee).

She brings out a tattered farmers’ almanac produced by Caribbean Chemicals. As she hands it to me for examination, she says, ”Anything I want to know, I start with this, get slight idea… (it) really helps” (Toco, Afro-Trinidadian female farmer).

Many farmers recognize that information from farm shops may be biased towards more expensive products or brands. However, some farmers do rely primarily on the farm shops for advice, as they felt the staff were “better trained scientists than the Extension officers” and were “really helpful.”

Indo-Trinidadian female farmers report the second highest use of farm shops (40%); indeed farm shops are tied with Extension as their second most important source of information. Perhaps in lieu of information from their spouses (who work off-farm), these young women are seeking public information, defying some of the stereotypes about them. This probably reflects a cultural change over time, as older women traditionally worked with their husbands on farm and relied primarily on them for advice. With young men now working off-farm, women have become more self-reliant and seek exposure to broader knowledge pools.

**Markets.** The market is a significant source of information for farmers, especially for those who sell in the retail market. Farmers ultimately depend on the market value of their crop and will glean whatever information they can about prices. Selling in the market helps a farmer determine not only a competitive price, but also what to grow, how to package it, and even when to sell.
Her stall boasts one of the more attractive displays. She has obviously paid more attention to the marketing aspect than some of the farmers who merely heap up their produce with little regard to appearance. She tells me it is important to examine prices and determine when is the best time to sell (Cedros, Indo-Trinidian female farmer).

**Formal education.** Agricultural science is taught in secondary schools in Trinidad, as well as at the tertiary level at the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) and the University of the West Indies (UWI). Only two farmers reported tertiary agricultural education, which is not surprising considering that only 6% of the total population of Trinidad receives a tertiary education (World Resources Institute, 2003). However, a small but significant number of the more successful young farmers mentioned secondary school as an important source of agricultural information. They urged the further promotion of agri-science as an important foundation for future farmers.

He believes that children at the primary-school level need to understand agri-science thoroughly, so they can apply the principles to their own practices. He himself attended the school here on the north coast, focusing on the science track, and believes that has improved his agricultural practices (Toco, Afro-Trinidian male farmer).

**Mass media.** Mass media channels are often an efficient way to reach a wide audience in rural areas, where resource constraints prevent more direct interaction. Traditionally, the agricultural support system has relied on printed material and the radio; more recently, the development of the Internet has facilitated the spread of information. However, in these two communities, mass media faces numerous obstacles that prevent it from being an effective resource for agricultural knowledge.

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42 This may in fact be an important source of information that was overlooked in the data collection, as I did not systematically ask about primary and secondary school training. It was the farmers themselves who made a point of mentioning this as an important contributor to their knowledge base.
**Reading.** Overall, only 10% of farmers use printed material for agricultural information. Female farmers and farm couples report reading less than male farmers (5% vs 15%). This probably reflects the remnants of gender biases in education, as well as the affect of age. Indo-Trinidadian farm couples are the oldest group of farmers and were raised when secondary schools were not common in rural areas. Not surprisingly, they report no use of reading as a source of agricultural knowledge.

The fact that reading remains unimportant may indicate a weakness in the public school system in these areas. Some young farmers, although technically literate, are not sufficiently comfortable with reading to use this as an information resource. This limits the benefit of the many informative fact sheets that are distributed by the Extension service.

**Radio.** Less than 5% of farmers report using the radio as a tool for gathering agricultural information. Although radios are fairly common in homes, no farmers mentioned the existence of regular agricultural programming. This is due both to limited programming and poor reception. Only one national station regularly broadcasts a half hour show, which is sponsored by an agricultural chemical company. The local radio station in Toco does periodically broadcast programs presented by the Extension Division of the Ministry, however reception is limited to a few surrounding villages.

**Internet.** At present, Internet access is confined to a few farmers at the mid to upper socioeconomic levels. However, the Internet is a significant source of information for those who do have access, especially in areas that are otherwise isolated.

When I comment on her usage of coconut husks as a media for her anthuriums, she brings out compressed coconut pellets, made in Thailand, that she uses in the place of peat moss. She had looked this up on the Internet, and we discuss the
possibilities for a Trinidadian entrepreneur to make and market a similar product (Cedros, Indo-Trinidadian female farmer).

**Attitude**

Although entirely unquantifiable in effect, certain attitudes appear to improve farmers’ quality of life as well as their agricultural production. They are worth noting, as they offer the potential for improving individual and community livelihoods. These resources may be the keys to facilitating linkages between farming communities and agricultural organizations.

**Positive attitude.** Although faced with an unending burden of work, many farmers exhibit an energy and positive attitude that lightens their load and keeps the future a hopeful place. Farmers do not trivialize their challenges, but neither do they dwell on them. In the vast majority of cases, they maintain a generosity of spirit that allows them to recognize and assist others in even greater need.

I ask which work, house or garden, she prefers. She says she likes them both, and, for all her comments about working two jobs, she is an energetic, cheerful woman and never complains (Toco, Afro-Trinidadian female farmer).

Given the many challenges of farming in Trinidad, most farmers who continue in agriculture do so out of a love for their work. They are committed to the land and often express a desire to improve their farming practices. As one perpetually busy single grandmother, the sole caretaker for three grandchildren, told me when I inquired if she would be attending an Extension course, “There are a few things I make time for, and agriculture is one of them” (Toco, Afro-Trinidadian female farmer).

**Leadership.** In each community, there are several individuals who exhibit informal leadership. Although they hold no formal title, other farmers recognize them as a source of assistance. In many cases they are also the liaison between local farmers and outside
organizations. Typically these are men, although one married woman served as a key figure for the women in her community.

He arranged for a series of agricultural courses to be taught in the village...Since the county Extension office did not have an officer covering their district, he went directly to the Farmers’ Training Center in Centeno to ask for assistance. He convinced them to teach a series of courses in the village over a period of several months. A lot of farmers attended, and those who didn’t still come to him for advice (Toco, Afro-Trinidadian male farmer).

Farmers often take the initiative for action, when they see a need and an opportunity. A group of farmers in one village had been persistently appealing to the Ministry for the settlement of land issues over several years. A farmer in Toco, upon hearing about my research project from other farmers, gave me an unsolicited letter appealing for assistance (Appendix F), in the hopes that I would bring it to the attention of the Ministry.

**Inventive.** A number of farmers are actively trying new methods of cultivation, often without the help of outside organizations. The tendency to experiment is not actually a personality trait, but arises in response to two distinct situations. In the first case, farmers who have relatively high levels of resources, such as information and socioeconomic security, are able to experiment with new techniques. Innovation is done in an attempt to maximize profit.

He has been experimenting with an ethylene spray to speed the fruiting of his pineapples. He shows me the successful and the not-so-successful results. One plant has bolted, producing an excess of tall leaves, but no fruit... He is an experimenter in all parts of his life. As he says, he “must have options.” This is definitely facilitated by his training and his family background (Toco, Afro-Trinidadian male farmer).

At the opposite end of the spectrum, farmers with the lowest levels of resources bear out the old adage that “necessity is the mother of invention.” These farmers use
unorthodox and often sub-optimal techniques in an attempt to maximize their return on a limited resource. For these farmers, experimentation is a matter of survival.

He lives in an isolated community, yet he is one of the most innovative farmers I have met. He is always exploring new markets, trying new crops, and developing his own tools to meet his special needs. He described himself as having “an open brain” and was constantly seeking out new sources of information. He aimed to work “smart, not hard” and was in the process of developing a double-headed nozzle for his backpack sprayer, spaced so that he could spray 2 rows of his crop at once (Toco, Afro-Trinidadian male farmer).

**Constraints**

Constraints limit a farmer’s ability to meet their agricultural objectives. Social factors, such as socioeconomic status, culture, and gender, form part of the “internal” constraints that affect farmers’ production decisions. In combination with “external” factors, such as infrastructure and government policies, these constraints place the ultimate limits on the production potential of farmers. Constraints not only decrease productivity but also discourage people from attempting a livelihood in agriculture.

Farmers in Trinidad face a diverse spectrum of internal constraints, as outlined in the constraints code map (Figure 6-6). Specific constraints are grouped into the following categories:

- Ethnicity
- Gender
- Capital
- Land
- Labor
- Knowledge

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Figure 6-6. Constraints code map

CONSTRAINTS

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Gender</th>
<th>Capital</th>
<th>Land</th>
<th>Labor</th>
<th>Knowledge</th>
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<td>education</td>
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<tr>
<td>Gender stereotypes</td>
<td>Female invisibility</td>
<td>Low cash-income</td>
<td>No legal tenure</td>
<td>Manual labor</td>
<td>Limited education</td>
</tr>
<tr>
<td>Female mobility</td>
<td>Household labor</td>
<td>Lack of transportation</td>
<td>Lease delayed</td>
<td>Gender roles</td>
<td>Outside network</td>
</tr>
<tr>
<td>HH instability</td>
<td>Female cash access</td>
<td>Social isolation</td>
<td>Limited accessibility</td>
<td>Female schedule</td>
<td>Low social capital</td>
</tr>
<tr>
<td></td>
<td>Dependents</td>
<td></td>
<td>Soil erosion</td>
<td>Sole farmer</td>
<td>Lack of org outreach</td>
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<td></td>
<td>Female head of HH</td>
<td></td>
<td>Low female tenure / title</td>
<td>Age / health</td>
<td>Inappropriate tech</td>
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<td></td>
<td>Male alcohol</td>
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<td>Favoritism</td>
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<td>Male violence</td>
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<td>Gender bias</td>
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<td>Female safety</td>
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</table>
Ethnicity

Ethnic norms can place constraints on individuals through expectations or restrictions on what is socially acceptable. Both Afro- and Indo-Trinidadian women face cultural norms that may constrain their productive ability in agriculture. Some women are able to ignore or overcome these constraints, but all women are somewhat affected by society’s perception of them.

**Gender stereotypes.** Women in both ethnic groups often confront negative stereotypes of their ability to be successful farmers. Like women worldwide, Trinidadian women are first defined by their connection to and responsibility for the household and family. Therefore, their agricultural ability is held somewhat suspect, and generally not taken as seriously as men’s. Indo-Trinidadian women are often considered incapable of the same agricultural labor as men. They are seen primarily as caretakers of small livestock and “fine crops” (vegetables).

MA remarks, “Women can’t farm like men.” He says women can’t do the same work as men, they only do the “softer” work, like planting or tending the “fine crops” (Cedros, Indo-Trinidadian, farm couple).

The continuation of this stereotype is evident in the negative attitudes of many farmers towards the involvement of young women in a national agricultural apprenticeship program, YAPA (Youth Agricultural Apprenticeship Program). Surprisingly, this opinion was also voiced by several female farmers, despite the fact that they themselves had worked alone in the garden for many years.

WA had two girls as YAPA trainees last year. She tells me there are “too many girls involved in the program. This type of work is designed for men. Girls cannot do heavy work. I believe they should get more boys” (Cedros, Indo-Trinidadian female farmer).
While it is generally more accepted that Afro-Trinidadian women are capable of cultivating “large” crops (bananas and plantains) and doing heavy tasks, the perception still remains that women are limited in their agricultural vision to fulfilling their household responsibilities. Women in agriculture are not taken seriously as competent businesswomen.

He said women were only home gardeners; they “wouldn’t just look at a piece of bush, and decide to clear it and plant crops.” He felt society in this area was very “traditional,” and women were bound to the household. Therefore most women in agriculture would be “very old, even geriatric” who planted as a way of life, not as an economic activity (Toco, Afro-Trinidadian male farmer).

**Female mobility.** Cultural norms may limit Indo-Trinidadian women’s ability to work or attend events away from the household. This decreases women’s access to many valuable resources, including off-farm cash-income and agricultural information. Although this is changing, it is still common in rural areas to find a whole block of women home alone in the middle of the day, while their husbands are off at work.

WA says that her husband didn’t like her to leave the house when they were first married. At that time, she was only able to attend classes by offering their home as a venue. Eventually, she started to go out to some functions, such as women’s excursions and courses, by herself. At first her husband was vexed, but she said she is “too strong to accept that” (Cedros, Indo-Trinidadian female farmer).

**Household instability.** Although Afro-Trinidadian women may not be as confined within the family unit, neither do they have the stability and security of that relationship. With the exception of some church households, many Afro-Trinidadian women change partners at least once during the course of their lifetime. If their work was absorbed into a joint garden or home, they may be left with little to show for it when the relationship ends.

WA was married twice, but both relationships ended in a bad way. Her second husband took up with another woman after WA had spent years farming by his side. Finally she could bear it no more and moved out. Although the house they had
been living in was hers, she moved out rather than confront him (Toco, Afro-Trinidadian female farmer).

**Gender**

Men and women face different constraints in their agricultural endeavors. Both are limited by external constraints, such as markets and infrastructure. However, women must also deal with the constraints that exist in a patriarchal society, which places women firmly within the household and does not acknowledge her equally within the public sphere.

**Female invisibility.** One of the most pervasive and persistent of constraints is the tendency for women to be overlooked in arenas outside of the household. Although women may be active and successful in any number of “outside” activities, they are often not recognized in those dimensions. Many times, when I was trying to locate a specific woman, villagers did not recognize her name when I told them I was looking for a farmer. Only after some discussion would they make the connection, saying “oh yes, so-and-so’s wife.” Likewise, many women are not recognized as farmers by Extension officers. This is true not only for women who farm alone but also for women whose husbands have contact with officers.

> “With me, personally, (I) have no relationship (with the Extension officers). They come to my husband, not me (Cedros, Indo-Trinidadian, farm couple).

This bias has in many cases been internalized by the women themselves, who often do not self identify as farmers.

As usual, she was diffident about her status as a “farmer”, telling me that she “wasn’t really gardening.” A few days later I see her in her garden and tease her about “not gardening” as she has a variety of short crops growing. She laughs at being caught red-handed (Cedros, Indo-Trinidadian female farmer).
One of the negative consequences of this invisibility is the tendency for women to register as farmers less frequently than men do. This perpetuates their invisibility, as they are not included in official lists of farmers and thus do not have access to many of the services that the Ministry facilitates, including linkages with outside organizations.

She says that all the paperwork is now arranged so that her husband can register. I ask whether she will also register; she replies no, only her husband would. I inquire why she doesn’t register; she laughs, saying, “He is more important (Cedros, Indo-Trinidadian, farm couple).

**Household labor.** Most of women’s activities, including their agricultural ones, are done with the objective of providing for the family. Women take their household responsibilities seriously, however it imposes a serious time constraint. In order to stretch limited budgets, many women substitute their labor to save the cost of buying an item.

This is a recurring theme in her conversation: the money that she can save by providing a household need herself – which in actuality translates into more work for her. For instance, she mentions that she can sew a dress and only pay $30TT (US$5) for material, versus buying an equivalent dress for $70TT (US$12). She says simply “Why should we pay?” discounting the effort it costs her (Cedros, Indo-Trinidadian female farmer).

Although women’s contributions to the household are usually taken for granted, husbands do notice if their wives leave the home to work outside, depriving them of that resource. Some husbands discourage their wives from working outside of the house if they cannot also provide all reproduction needs. Men do not compensate by assuming household duties; this remains the sole province of women.

Her husband was not crazy about her working outside, because they would both work from morning until mid-afternoon, so when he arrived home there would be no lunch cooked and waiting (Toco, Afro-Trinidadian farm couple).

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44 The farmers’ registration program is a service of the Ministry of Agriculture, which enables registered farmers to access certain government subsidy programs.
Female cash access. Married women are often constrained in their access to cash, either because they do not have a personal cash-income or because their husband controls family finances. The money that is allotted to them is usually sufficient only to cover household needs. Earnings from joint ventures, agricultural or otherwise, are often controlled by the man.

She alone is responsible for the post harvest preparation of the cocoa, including drying, sweating, dancing…However, she tells me, as a matter of fact, that as far at the money, she gets none of it for herself, it all has to go into the household (Cedros, Indo-Trinidadian, farm couple).

Dependents. Responsibility for dependents restricts the mobility of many women. Women with very young children may be completely housebound, unless they have assistance from the extended family. While some mothers resume work in their gardens once their children start school, others remain in the household for the rest of their lives.

When she was first married she had a garden, but she tells me “then I had children” and since then she has been primarily in the house. Nor has she taken any of the courses in domestic skills that so many other women attend; she says she “stays in the house” (Cedros, Indo-Trinidadian, farm couple).

This constraint often recurs later in life when women have grandchildren. Grandmothers may assume a large part of the childcare, and at times take full responsibility for their grandchildren.

She used to go on the land with him every day, but since her grandson’s birth, she has remained at home more, to help with the baby and the domestic chores (Toco, Afro-Trinidadian farm couple).

Female head of household. Women who are de facto or de jure heads of households face the greatest constraints, as they have to fulfill many roles and responsibilities, while being limited in their time and cash-income. Many of these women are the sole supporter of their households.
She learned everything on her own; she had no contact with outside information. “I am a woman, I never come out, never go nowhere, just work and work.” She started her garden by herself, through trial and error. “I don’t know if anybody (such as Extension) ever came…I am usually working.” Nor could she ever take courses, due to lack of time. When she came home from work, the children were home and needed her. “When you’re father and mother one time, always hustle. I always fight on my own” (Cedros, Indo-Trinidadian female farmer).

Some women are de facto heads of household, as their spouses may be ill or absent from the household for the majority of the time. Male contributions are limited to sporadic financial assistance, so women cannot depend on this cash-income.

She farmed more once she got married, but has worked mostly on the land herself, as her husband is a diabetic and has to be careful about getting cut. He used to work off-farm but his health has deteriorated, so she is currently the sole provider for the family. She says she is now “father, mother, sister, wife;” she has to take care of everything. (Toco, Afro-Trinidadian female farmer).

Even women with an able-bodied spouse may end up taking primary responsibility for the financial needs of the family. This becomes a double burden, as they have another adult to support but no assistance.

When WA was married, she began to work a piece of cocoa land…I ask whether she worked with her husband there, and she laughs, saying she worked there, but, although it is not “nice” to say, her “husband was a lazy man.” I have heard from others that she had worked very hard in her life, relying mostly on her own initiative to support the family (Cedros, Indo-Trinidadian female farmer).

Male alcohol. Drinking is a normal and expected part of male social activity in Trinidad. In both communities, men spend a significant amount of time outside of the household, “liming” with friends and drinking. “The (women) said that the man’s non-farming time is usually spent on his own recreational activities, like ‘drinking and having a good time.’” (Harry, 1980, p. 143).

She says that her husband “doesn’t like to work”…When I ask what he does, she laughs and says he “limes” all about (Cedros, Indo-Trinidadian female farmer).
This may have negative consequences for wives, as it decreases the family cash-income and may lead to problems of alcoholism. “Women are quite often more heavily in debt than men since they are responsible for feeding their families and the grocery bill accumulates rapidly. Adult males in the cane belt\textsuperscript{45} amass most of their family’s debts through constant abuse of alcohol” (Harry, 1980, p.134).

She tells me that her husband liked to drink; he used to “drink out all his paycheck.” That left her alone to pay the children’s school fees and put food on the table, so she began to “grow a garden”. At that time she farmed out of necessity (Toco, Afro-Trinidadian female farmer).

**Male violence.** An unfortunate corollary of alcohol abuse is a relatively high rate of male violence towards spouses and partners. In large part this is ignored by society, as it is seen as a “private” affair. Physical injury obviously constrains the immediate ability to perform agricultural labor. The emotional injury may limit women in more permanent ways.

Both of her arms are in slings, and the top and back of her head has a large gash, the stitches glaring raw from her shaved skull. Nobody asks her what happened… Only as we are leaving does WA say softly to her, “Don’t let your man get so angry” (Toco, Afro-Trinidadian female farmer).

With society’s quiet tolerance of physical violence, it is up to a woman herself to ensure her protection. In the end, the only solution may be to leave the situation, and start again in all ventures, personal and productive.

Her ex-husband was an alcoholic, and eventually it got to the point where he was abusive. He threatened her numerous times, saying that he would kill her. But she looks indignant, thumping her chest, “I am not a woman you can beat.” She says that if she had been less strong he would have done her “all kinds of wickedness.” Eventually she could bear it no longer and moved out (Toco, Afro-Trinidadian female farmer).

\textsuperscript{45} The region of central Trinidad that was predominantly cultivated in large sugarcane estates.
Female safety. Women in both communities mention safety concerns when they are working on the land alone, something no man ever mentioned. Most women are aware of safety issues and use some precautions.

She often comes on the land by herself, and she says it is good as a woman that her land is so close to the road for safety reasons (Toco, Afro-Trinidadian female farmer).

For some women this is an overriding concern and limits their solo activities to land close to the house.

WA works the land that is closest to the house, as she is scared to go too far back. She and her husband used to work cocoa land in the back together, until he got ill. She says she could “make money in that (cocoa),” but she does not feel safe going without him, as it is so distant if anything goes wrong. She says there are stray cattle, stray men, and hunters back there (Cedros, Indo-Trinidadian female farmer).

Capital

Limited access to capital constrains production by preventing the use of the optimal level of inputs. This keeps production at a low level, which reinforces the situation by minimizing farmers’ earnings. Farmers at this level are often forced to sell crops below market value, because of their inability to get crops to more profitable markets.

Low cash-income. For farmers at the survival level, their cash-income is barely sufficient to meet household consumption needs. Therefore, they are constrained from re-investing in their farm, which keeps production below potential. Lacking cash for inputs, they may attempt to compensate by working longer hours, but this cannot significantly increase production.

She describes “finances” as her biggest obstacle. She wants to buy another spray can ($50 US) but cannot afford it presently. She says she doesn’t get to spray herbicide often enough, so that the weeds grow thickly and compete with her crops, reducing production. Weeding is one of her most time consuming activities, but she cannot afford to hire help (Toco, Afro-Trinidadian female farmer).
Lack of transportation. Limited resource farmers are constrained by the lack of transportation. This affects them in several ways. Because most farmers live at some distance from their land, it requires a daily investment of time and/or money to reach their garden. Elderly people may depend on public transportation, which often requires a long wait. Most able-bodied farmers make the daily walk to and from their land. In many cases, this requires an hour or more each way, and thus limits not only productive time but also decreases the energy farmers can expend on their land.

She often has to walk the entire distance to her garden, first along the main road, and then back along the access road into the forest. She will catch a ride whenever possible, for whatever portion she can, because walking can take more than an hour. She says it is worse coming home because the sun is blazing hot… “See how hard my work is,” she laughs (Toco, Afro-Trinidadian female farmer).

Lack of transportation also constrains farmers’ profits, as it limits their ability to receive a good price for their product. The closest retail markets are at some distance from the villages. Pt. Fortin is a half hour from Cedros, and Sangre Grande is an hour and a half from Toco. Farmers must either invest their time and money in traveling to the market, or they must accept the much lower price offered by the middlemen who ply the area.

There is “only one vendor (middleman)…(I have) no choice but to sell out at whatever (price I) can get. Transport is difficult, so difficult to sell (at) good (price). The price (the middleman pays) is too low, discourages farmers” (Toco, Afro-Trinidadian female farmer).

In one instance a middleman in Toco arranged with a farmer to buy 200 avocados. However, after the farmer had picked them, the middleman was only willing to buy 27 of them for $1 each. So the farmer hired a taxi to carry the rest to the market in Sangre Grande and sold them for $4 apiece.

She sells both her peppers and her bananas to the same market van, which then takes the produce to town. She used to go to market herself, when her husband was
also working, and they had a vehicle. It was much more profitable. Now, without the truck, she doesn’t have time and energy to travel down (take public transportation) to town; she would rather take the lower price and sell it directly to someone here (Toco, Afro-Trinidadian female farmer).

Ultimately, lack of transportation constrains national production goals, as farmers are not able to deliver sufficient high quality produce to meet national demands. For instance, Trinidad has world grade cocoa, which fetches a continual high price on the global market. However, the quality is often decreased by improper fermentation. Therefore, the government has developed a central fermenting facility, which buys and processes wet cocoa. This not only ensures the quality of the bean, but also saves the farmer an extra week or so of labor. However, many farmers do not sell their cocoa wet because they lack a reliable and affordable source of transportation.

**Social isolation.** In addition to the actual lack of material wealth, low cash-income individuals often suffer from social isolation. Without the means to participate productively in the local economy, they may become virtually invisible. Although everybody “knows” them, they often have extremely limited social networks. This effectively cuts them off from the only resource – social capital - that may be available to them.

On the way to her garden, we turn onto a small dirt road with 4 or 5 small wooden houses, noticeably less affluent than the rather large, middle-class houses along the main road...When I ask about the houses, WA makes a disparaging comment about those people being “worthless and idle”, except for one boy who has a large farm. She says not to “waste my time” talking to them (Cedros, Indo-Trinidian, farm couple).

For women, especially single women, such poverty compounds their social invisibility. Thus, a district officer told me he “did not know” a certain low-income single female farmer, despite the fact that she sold in the market two days a week and lived next door to the most recognized farmer in the district.
Land

Land constraints in these two communities include issues of tenure, access, and soil erosion. Such factors limit current and future production potential.

No legal tenure / title. One of the most common constraints of small farmers throughout Trinidad is the lack of secure personal access to land. Oddly, this situation exists in a country that has thousands of acres of “abandoned” land. Potential farmers without legal access to land respond in two ways. A large percentage give up on an agricultural career and seek employment elsewhere. However, many rural people have no alternatives, and they respond as landless people do the world over: they squat.

Farmers who are forced to squat face a number of challenges, the largest being the ultimate insecurity of their production base. Although squatting enables immediate production capacity, it does not provide the important benefits that legal land title does, such as the ability to register as a landholder and receive subsidies or qualify for a loan. Without secure tenure, many farmers feel that it is pointless to invest in agriculture at all.

He believes the (farmer’s) group has potential to address a lot more than the land issue, but that has to be the first priority, as nothing else can happen until they have secure land access (Toco, Afro-Trinidadian male farmer).

Lease delayed. Although the State Lands’ office has attempted to remove this constraint through its land distribution programs, it has not always succeeded in its aim. In both regions, there are villages that have claims outstanding from ten or more years ago, and farmers are still waiting to receive their leases. In the interim, some people have grown frustrated and left “their” land.

He tells me they “really need help to get the lease.” He used to have a vibrant farm operation, and officers came by. Because of the delayed action on the lease, he has

46 In both these regions, more than half of all agricultural land is abandoned.
gotten out of agriculture commercially, and only keeps livestock out of tradition. He is frustrated because he can’t register or get incentives without the lease. He has tried to pursue the matter, but has seen no progress “I’m tired of going (to the state lands’ office), you know how many times I’ve gone?” (Cedros, Indo-Trinidadian male farmer).

Other farmers trust that the government has made a promise to them and have gone ahead and cultivated their land. However, even those farmers who are actively farming are hindered by their lack of formal status as leaseholders.

He has never received a loan. He tried through Agricultural Development Bank, but was denied, partially because the letter of intent (to lease the land) was not seen as sufficient collateral (Toco, Afro-Trinidadian male farmer).

**Soil erosion.** Many farmers, both owners and squatters, must contend with steeply sloping hillsides in their farming systems. Although this creates short-term difficulties for farmers as they navigate their land, they have learned to maneuver around the hillside with apparent ease. However, the more important constraint is the long-term loss of soil through erosion, which will ultimately limit the productivity of the land. No farmer expressed concern over erosion or appeared to be using soil conservation techniques. Although a soil conservation class was offered in the vicinity, turnout was much lower than for production courses.

Almost all of his land is very steep hillside; one part falls almost straight down to the sea and the rocks below. Even he laughs about cultivating that parcel of land, remembering a few times when he was carrying down banana suckers and almost slid into the sea (Toco, Afro-Trinidadian male farmer).

**Limited accessibility.** Many farmers work plots of land accessible only by footpath, at some distance in the forest, therefore any produce has to be carried out by hand. This is a serious constraint on productivity and prevents some people from cultivating land at all.

There is no vehicle access along this track, so she has to carry her produce, one bunch at a time, along the footpath. In one day she may walk the track back and
forth 20 times carrying out bunches. Each trip takes almost half an hour (Toco, Afro-Trinidadian female farmer).

Many farmers claim that government-maintained “access roads” to their parcels were promised but never built. In other cases, access roads do exist, but have fallen into such disrepair that they are completely impassable. Although farmers feel that improved access roads would be extremely beneficial, few express any expectation of change at this point.

“We have no access road, we use tracks (a one hour walk each way). Maybe twice for the year, the road is cutlassed; otherwise we have to fix it for ourselves. They talk about (the government promotes) working cocoa land, but how are we supposed to get our produce out?” (Toco, Afro-Trinidadian female farmer).

**Low female tenure / title.** In both regions, only 10% of land titles and leases are in the woman’s name. Although this limits women’s legal access to land and their recognition as farmers, few women remark on this as a primary production constraint. Most women work a relative’s (35%) or spouse’s (35%) land, or else squat (30%). However, in a few rare cases, younger women have made a point of getting their name on the title with their spouse.

She proudly shows me their land deed, made out in both of their names. I remark on this, and she laughs, saying that she made sure her name was on the deed. Her husband is quite a bit older, and she wants to make sure she would still have something to give the children (Cedros, Indo-Trinidadian, farm couple).

**Labor**

Labor availability is mentioned most often as the greatest limitation on production. Most farmers operate with no mechanization and few chemical inputs, so their manual labor is the primary determinant of crop growth. Without plowing, and with minimal herbicide use, farmers rely on manual weeding with a cutlass to protect their crops from competition. Therefore, any further constraint on labor is immensely influential.
**Manual labor.** Labor constraints include not only limitations on the number of people and hours available, but also reliance primarily on manual labor. The majority of farmers continue to rely entirely on manual labor for all stages of their production, from clearing the land to harvesting, as they do not have access to power tools or motorized farm equipment. The “cutlass” or machete is a ubiquitous tool that serves for all purposes. Few farmers go in their garden without a cutlass; they manage to do all tasks with it, including planting and weeding. Many farmers have a variety of simple hand tools, which require a fair amount of strength to wield. While these tools may be effective, they are largely labor inefficient and constrain farmers’ already limited labor resource47.

His sorrel plants are evenly spaced in precise lines. He says he “plants” even very small seeds individually instead of “sowing” them, because he would have had to “rotivate” (turn) the soil if he wanted to broadcast them, and he does not have access to a tractor (Cedros, Indo-Trinidadian farm couple).

With global competition decreasing market prices, farmers can no longer rely on manual labor and traditional technologies to make a profit. As a result, they may abandon traditional (and potentially profitable) crops, solely for want of efficient cultivation techniques.

She points out various trees that we pass, nutmeg and cocoa and coffee, remains of old estates, and I ask if anyone still harvests them. She laughs and says, “Cocoa has too much ‘it’ in it. You have to pick it, pile it, bust it, dance it, sweat it, carry it, and sell it.” In other words, it is labor intensive, and therefore not seen as a very desirable crop (Toco, Afro-Trinidadian female farmer).

**Gender roles.** Men and women report doing essentially the same tasks, with the one exception that men typically do the initial clearing and land preparation. Although a

47 One available innovation that has become vastly popular is the weed whacker, locally known as a “whacker” or “brush cutter” that farmers use to clear land.
few women said that they “could” do that, they prefer to have male assistance. This is somewhat surprising, as female farmers do all other tasks, many equally difficult, including carrying large bunches of plantain. Women even spray their own chemicals, a task assumed by men in many societies. Regardless, land preparation remains primarily a male job. Only one woman reported doing her own land preparation; she even helped some other women in that task.

The reliance on male labor for clearing forces women to wait for male assistance before they can start cultivation. As it is often difficult to get labor, women may have to delay planting.

Her husband does all the clearing with the “whacker” and a cutlass. Currently she is waiting on him to clear the land so that she can start to plant…(2 months later) She hasn’t started to plant yet, as she is still waiting to get the land cleared. She finally paid 2 men $500 ($80US) to clear “a good piece of bush.” When that is done, she will begin to plant (Toco, Afro-Trinidadian female farmer).

Female schedule. In order to fulfill their multiple responsibilities, women work long hours, typically more then men. Household tasks such as cooking, washing, and childcare are extremely time-consuming. This limits the time that a woman can devote to her garden, and must be scheduled around household activities, as meals must be prepared at certain times. Increasingly, women are also working off-farm to secure a cash-income for their family.

I have tried several times to interview WA, but she is never home. However, her large pack of children (8 in all) tell me to return early one morning…When I arrive, she has just returned home from an all night shift as security guard and is shepherding her kids into their school clothes and books. Her eyes are red with exhaustion. After the children leave, we are finally able to talk. She says she is going straight to the garden, and then will come home and clean and cook before the kids return from school. Her common law husband goes to the US frequently, so he only helps with kids and garden periodically (Toco, Afro-Trinidadian female farmer).
**Sole farmer.** Farmers who work on their own are limited to their own labor. Hired help is difficult to find in agriculture and is often prohibitively expensive for a lone farmer. Although they are occasionally able to get outside assistance, the problem remains how to maintain any expansion in production.

I ask about her tomatoes and peppers, but she says they were not cared for and got overgrown, so they yielded nothing. It is obvious that the labor requirements of maintaining all her crops have caught up with her (Toco, Afro-Trinidadian female farmer).

This is one of the major differences in resources between individual farmers and farm couples and affects not only the production potential but also the security of the operation. The greatest disadvantage of being a sole farmer becomes apparent in times of illness or crisis, when they have nobody to assume their responsibilities. The losses from these periods often have repercussions months in the future.

She had cut herself badly last year, and couldn’t work for two months. She had nobody to work her land during that period, although the market van did harvest the bunches as they ripened (Toco, Afro-Trinidadian female farmer).

**Age / Health.** Many farmers, especially Indo-Trinidadians, are of an advanced age and may be suffering from a variety of ailments. This is a huge constraint in an enterprise as physically demanding as agriculture.

She has been farming her whole life, but she had heart problems a year ago and is now much less active in farming. She makes a disparaging comment about how she can’t really work any more, since she has gotten old and sick, but says she used to plant “right round” the land (Toco, Afro-Trinidadian female farmer).

Reduced production often forces farmers to find new markets that will accommodate their smaller harvest. This usually entails a loss of profit, time, or both.

Last year both she and her father-in-law had back problems and could only cultivate a quarter of their normal field. Normally, she sells her crop wholesale, but, this year, with her reduced harvest, they would not come to collect her produce. Therefore, she now spends her days selling by the roadside (Cedros, Indo-Trinidadian female farmer).
Knowledge

Knowledge is a crucial agricultural resource, as it allows farmers to maximize production within the context of their existing constraints. In many cases, beneficial agricultural information exists, but never reaches the farmers. The flow of information can be constrained at various levels, including the source, the channel, and the recipient. Sometimes the message itself is the problem, as information is not based on scientific understanding or is inappropriate for local realities.

Limited education. Despite improvements in recent years, many farmers are limited by a low level of basic education, which constrains their ability to benefit from a wide range of knowledge sources. Many older farmers were unable to proceed beyond a primary education due to the unavailability of secondary education in their youth. Women’s education was further constrained by cultural norms and household responsibilities, and some never attended school at all.

Many women here can’t write; WA can’t even sign her name. She said she always had to stay home to “mind children,” and thus was never able to go to school (Cedros, Indo-Trinidian, farm couple).

Nowadays, most young farmers do receive a secondary education, however there are still deficiencies in these rural school systems. In both regions, students told me that many of their teachers failed to attend school several days each week. Although Trinidad boasts a high level of literacy (97.9% of women and 99% of men; United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2005), in actuality this is more formal than functional. Many rural people cannot read with sufficient ease and proficiency to make it a useful information gathering skill.

Several times she hands me things to read, telling me she “cannot see so well any more.” I believe the actual difficulty is her inability to read. All the course notes are
in her daughter’s hand, and she tells me she doesn’t take notes, but she can “do the practical” (Cedros, Indo-Trinidadian female farmer).

This has resulted in a farming population that has limited ability to benefit from scientific explanations of agricultural situations. Many farmers, especially women and the elderly, remarked to me that they simply “didn’t know” what to do about a certain problem in their crop. These farmers rely on traditional methods of cultivation, which are generally reliable but may be of little use when circumstances change.

She said the dasheen she harvests now is smaller than originally, when the land was first cleared; the land “got tired.” It could be “refreshed”, and some farmers did that, but she didn’t know how. In general, she felt that “If something doesn’t grow (on a certain piece of land), it is the wrong type of land” and she simply will not try to grow that crop there again. (Toco, Afro-Trinidadian female farmer).

Unable to scientifically evaluate a problem for themselves, many farmers rely on the recommendations of the farm shops. Therefore, for many farmers, the first response to a new problem is the application of chemicals, often the same chemicals for a vast array of problems.

Her peppers stopped bearing after about 2 months. The fruits got really small and then the trees just stopped fruiting. She says they “need some help” so she is planning to spray some gramazone and some nutrex, since that is all she has in her arsenal...However, she admits that she doesn’t know if this will help (Toco, Afro-Trinidadian female farmer).

**Outside network.** Membership in networks is beneficial for all people, as it enhances their available resource pool. However, networks are most crucial for individuals with limited resources, as it allows them to overcome constraints that might otherwise be prohibitive. In this sense, networks can be understood as an “alternative resource” that takes the place of “missing” resources. March, Smith, and Mukhopadhyay (1999, p 104) stated:

Poor people in general, and poor women in particular, are often excluded from formal allocations of resources, so they draw on other resources – determined by
their social relations – which play a critical part in their survival strategies. For example, poor women often rely on networks of family and friends to help them manage their workload. Resources of this kind, available through social relations, can be so important that some would say ‘poverty is being alone.’”

Or, in the words of a local Trinidadian farmer, people who do not have access to networks have “poor hopes.” Ironically, it is often the lowest resource farmers who are the most isolated.

Socially isolated farmers are constrained by their lack of access to network knowledge. This not only limits their access to local knowledge, but also prevents their recognition by outside organizations, which usually contact communities through one or two “recognized” farmers. Therefore, organizational resources tend to flow preferentially to farmers within those network. Women often mention this “outsider” status as a constraint to their access of agricultural knowledge.

“Maybe as a woman I wasn’t considered a farmer.” WA recounts how an Extension officer used to come by to visit male farmers in the village, but “nobody ever introduced me to him, or said ‘She’s a farmer’.” Also, when there were courses offered in the village, she wasn’t told about them. “I’d come from the garden and sees cars and boys (at the community center), but nobody ever told me, so I wasn’t involved” (Toco, Afro-Trinidadian female farmer).

This isolation may also occur because of racial or ethnic differences. This phenomenon was observed in both communities. While there are typically not overt racial hostilities, the few farmers of the minority ethnic group are usually not in the inner circle of farmers, and in some cases are completely isolated.

MA says there is an Indo-Trinidadian farmer that he must introduce me to…He says that I “wouldn’t have heard about him” because apparently he does not spend much time in the village (Toco, Afro-Trinidadian male farmer).

This social exclusion limits farmers’ knowledge resources and, ultimately, their potential productivity. The irony is that beneficial knowledge may exist nationally, or on the next farm, but an “outside” farmer has no way of accessing it. These farmers must
learn on their own, through trial and error, when attempting new ventures. Although they usually report some level of success, their progress is neither as fast nor as great as it could be.

MA operates independently of the other farmers; he “does his own thing” partly because they “never tell (him) what is going on.” He maintains that he doesn’t really care; he doesn’t feel he has much to gain from association with the other farmers (Toco, Afro-Trinidadian male farmer).

**Low social capital.** Social capital is formed by the associations between people, such as social networks and norms, which facilitate coordination and cooperation and ultimately effects community productivity and well-being (World Bank, 2002). An individual’s access to social capital is determined largely by their membership in social networks.

However, although networks are necessary for the transfer of social capital, their presence alone does not guarantee this process. In her study of a rural Jamaican village, Thomas-Hope concluded that despite the presence of family and church networks, it had led to little social capital, as she observed little exchange of labor and ideas (Thomas-Hope and Spence, 2006).

In Toco and Cedros, there is a noticeable difference in the level of social capital supplied by the various networks. Some networks seem primarily to facilitate social activities, while others appear to serve as important resources. Which networks are important varies in the two communities; while family networks are quite active in the Indo-Trinidadian community, the farmer network is less operative, even though many farmers belong to a formal farmers’ cooperative.

He says that most farmers in the area are afraid to share their good information, because if another farmer shares the same success as them, it might drive down the prices they receive. He says that in the first place farmers don’t really visit each
other’s fields, and if they did, he would never ask “What do you use, how did you do that?” (Cedros, Indo-Trinidadian farm couple).

**Lack of organizational outreach.** As the outreach arm of the Ministry of Agriculture, the Extension Division bears primary responsibility for facilitating communication and knowledge sharing with farmers. While Extension has succeeded in reaching a fair percentage of the farmers in Cedros through the county office in Point Fortin, farmers in Toco have a very limited relationship with Extension. Although nominally under the auspices of the county office in Sangre Grande, none of the villages in Toco have been assigned a district officer.

MA says they have no relationship with El Reposo, the county office. Since the former agricultural aide retired some years ago, no officer has been assigned to their district. He believes the office has a lot of technically trained specialists, and sees them as potentially a very important resource. However, he feels they need to come up to the community and work with farmers “starting where they are” (Toco, Afro-Trinidadian male farmer).

The absence of outreach officers leaves the burden on the farmer to travel to the county office in Sangre Grande, a 1.5 hour commute, if they desire assistance. This is a real constraint on many farmers, as it entails a cost in time and money that many can ill afford. Outreach is vital for many farmers in these communities, whose mobility may be constrained by capital, gender, or lack of transportation.

I ask whether either of them would be interested in attending another Extension course. They both agree that if it was locally, yes, but not if they had to travel to the county office, remarking, “It costs $7 (US$1.10) to travel one way, you know” (Cedros, Indo-Trinidadian farm couple).

The absence of a local officer is felt keenly by Toco farmers, who desire access to the knowledge resources of the Ministry. As one farmer expressed in an unsolicited letter to me (see Appendix F for the complete text of the letter):

“Information does not reach us. We do not or does not know what the government has for farmers or to assist us in farming. We need agriculture officers to visit us on
a regular basis and to give us information on soil, planting, seedlings, care of crops, harvesting and marketing, and to be taught in modern technology. If something is not being done to help the farmers in this area, it (agriculture) would be a thing of the past. Many farmers are turning to the illegal trade. They are planting acres of marijuana and saying that it is better for them” (Toco, Afro-Trinidadian male farmer).

The lack of outreach has alienated some farmers, who no longer seek assistance from the Ministry and are completely cut off from them as a source of agricultural knowledge.

(I) “Don’t believe (officers will come), so I don’t ask. We never got anything from the Ministry...Nobody ever come and talk to we about agriculture. The guy in the agri-shop gives advice (so) I don’t really need officers. I feel the officers could do a little more, come and visit the farmers, give us a little advice, instead of us having to come to them” (Toco, Afro-Trinidadian farm couple).

Despite the presence in Trinidad of a number of other agricultural organizations, with a wide range of resources, they also have not been effective in reaching into these isolated rural communities. Only 5% of farmers surveyed had used any of the ten primary organizations as a resource for agricultural knowledge. In fact, most farmers are totally unaware of the existence of these organizations.

MA complained about the “delinquent behavior (of organizations) … Farmers in this area have been segregated, abandoned. (I have) never seen anyone from any organization that came to this village and speak to me” (Toco, Afro-Trinidadian male farmer).

The unfortunate result of this disconnect is a farming community unnecessarily limited by knowledge constraints. Even though a diversity of resources exist at the national level, many farmers have little access to this knowledge and may never reach their potential productivity or may suffer unnecessary losses.

She points out a wilted plant and the one next to it, that is starting to brown. She does not know the cause...Standing with her, looking over the hills in which she has invested so much time and resources, I can understand her anxiety if the symptoms should start to spread. I am struck with her sense of helplessness, that
In some cases the constraint on knowledge is not so much the lack of access but the content, which may be inappropriate for the intended users. This is a common problem for small-scale, limited-resource farmers, who may have little ability to implement practices that require high levels of inputs.

MA says that he (and most of the other farmers) can’t grow the things the officers do at the station, as they don’t have the same conditions, specifically less fertilizer and machinery. The officers arranged a trip for area farmers to a cassava plantation in central Trinidad a few years back. However, he remarks that “we can’t do what they do” because they have tractors and irrigation and such (Cedros, Indo-Trinidadian farm couple).

This was frequently mentioned as a constraint by cocoa farmers, who felt that the Extension’s recommended cultivation strategies were ill-suited for their objectives or their constraints. Having less access to irrigation or labor, they found traditional practices more appropriate for their situation.

“The training we got was not from the Ministry but from our forefathers. We used to plant cocoa 14 feet apart, so the branches don’t (over)lap. The Ministry came and said plant 8 feet apart and we would have less weeds…Not so! It reduced the crop, and because branches (over)lapped, it (required) lots of work to prune so much.” MA also has continued to purchase cocoa seedlings, as opposed to the clones that the Ministry is now distributing. He says the clones produce more initially, however they are not as sturdy, and may not survive the dry season. Likewise, he says that the recommended 60 feet between shade trees is inadequate in Cedros. Granted the shade may reduce yield, but during periods of intense drought, the cocoa needs the greater protection (Cedros, Indo-Trinidadian farm couple).

In other cases, knowledge was more irrelevant or outdated than inappropriate. This was mentioned specifically regarding the Extension course material, which some farmers felt was redundant or too basic.

MA said that if the officers only continue to offer the same courses, it is not really an improvement over no extension at all. He laughs about Extension coming to an area like Sans Souci, which has extensive banana and plantain farming, to teach a course on basic production techniques, that farmers already know. He feels that
they should be bringing courses on advanced production techniques and new technologies (Toco, Afro-Trinidadian male farmer).

Favoritism. The information that farmers receive is limited by the amount and nature of contact they have with agricultural officers. In both regions, there are distinct differences in the amount of access that farmers have. There are definite inequities, with some farmers receiving regular and updated information, while others are almost completely excluded.

MA laughed remembering the time an Extension officer came up to advise him and other cocoa farmers. Apparently, the officer had only reached the end of the maintained access road, where a larger farmer had his estate (50 plus acres). The officer never made the trek down the small track to his land; MA said they “only had time for the big boys, not the small men like me” (Toco, Afro-Trinidadian male farmer).

Despite the good relations that many farmers in Cedros had with Extension, there are still 50% of farmers who report no or very limited contact with the county office. There is a definite feeling that all farmers are not served equally.

(We) “Don’t even know who they (the officers) are. Nobody ever come to us about the garden. (It is) really a friend to friend thing” in that officers only visit their “friends” (Cedros, Indo-Trinidadian farm couple).

Surprisingly, this sentiment is expressed not only by farmers on the “outside,” but also by those very farmers who enjoy the best relations. Indeed, one farmer on the “inside” recommended that at least 2 officers monitor the farmers in the same district, to prevent “corruption and favoritism.”

“Officers visit me very often; we are personal friends. I and all of them does do good, but they need to visit other farmers more regularly, with more assistance. They (the officers) are my friends, but I feel it’s a scheme, favoritism” (Cedros, Indo-Trinidadian farm couple).
In some cases, farmers believe this is due to racial biases, such that officers preferentially visit farmers of their same ethnicity. Whether this is true or not, it remains a problematic perception of farmers, and may reflect prejudices on both sides.

Several times, she and other farmers had remarked that the officers never visited them; they might see the officers in passing, but that was all. WA remarked that one of the officers only liked to come visit and socialize with one particular farmer...It just so happens that the officer in question is one of the few Afro-Trinidadian officers, and the farmer in question is one of the few Afro-Trinidadian farmers (Cedris, Indo-Trinidadian farm couple).

**Gender bias.** Knowledge often flows in distinct channels to men and women, whether through intention or bias. Many Indo-Trinidadian women do not attend Extension courses or meetings because of social pressures or household responsibilities. For women who are part of a farm couple, this may not be as much of a constraint, as their partner may pass on the knowledge. However, this is more problematic for female farmers, whose spouses are not involved in agriculture.

Her husband took a few courses that Extension offered in Coromandel, but she didn’t go. When I ask why, she says that it was mostly men who attended, adding “men are more important.” However, she remarks that “he came home and told me” what they said (Cedros, Indo-Trinidadian farm couple).

This tendency is also evident among Afro-Trinidadian women, especially older women who frequently do not know what “Extension” is. However, even younger women often function with less reference to the Ministry than their male counterparts.

Despite her apparent success as a farmer, WA does not appear to be tied in to any formal support systems. She is not registered as a farmer, and does not have contact with the Ministry of Agriculture, nor is she a member of a farmer’s organization or a women’s group (Toco, Afro-Trinidadian female farmer).

**Activities**

The agricultural activities that a farmer engages in reflect her/his unique combination of objectives, resources, and constraints, as discussed in the preceding three
sections. A farmer’s choice of activities is not random, but is a conscious strategy designed to meet their objectives, in light of their known resources and constraints\(^{48}\). This strategy includes the overall level of involvement in agriculture as well as the choice of specific activities.

In both Toco and Cedros, there is a great diversity in the level and type of agricultural activities that farmers choose. Some farmers rely on agriculture for the bulk of their livelihood, while others use agriculture only as a supplement to their off-farm cash-income. Some farmers focus on only one or two primary activities, while others incorporate a great diversity of activities into their farming system.

This section presents the results of qualitative and quantitative inquiry into farmers’ activities and the factors that influenced their selection. Informal discussions with farmers and field observations revealed a direct relationship between objectives, resources, and constraints and farmers’ selection of activities. These are presented below, in farmers’ own words, as

- Activities based on objectives
- Activities based on resources and constraints

Each section is preceded by an activities code map (Figures 6-7 and 6-8) which presents the activities with their associated objective, resource, or constraint. Every activity is labeled to show whether it is describing a type of activity (what) or a management strategy (how). This section does not refer to specific activities, such as “cassava cultivation” or “rearing of pigs,” but rather describes the type of activity, as defined by farmers’ selection criteria, such as “low labor activity” or “local market crop.”

\(^{48}\) Only relatively recently have economists acknowledged farm families to be efficient and rational users of resources, for example Schultz’s 1964 publication *Transforming traditional agriculture* (as cited in Hildebrand, 2000).
This method of presentation emphasizes the factors that make an activity attractive to and feasible for a certain group of farmers. This should assist agriculture development practitioners to:

- Gain a greater understanding of the rationale behind farmers’ activities.
- Use that knowledge to develop and extend technologies that will be appropriate for specific target groups.
- Recognize the most influential objectives, resources and constraints.
- Use that insight to create attractive programs that help farmers achieve their objectives and beneficial policies that remove constraints.

The third section presents quantitative data on the percentage of farmers who participate in various agricultural activities, analyzed by ethnicity and farm gender. This section refers to specific activities such as root crops, tree crops, livestock, cocoa, etc. Cultivation practices are related to the selection criteria discussed in the qualitative analysis, illustrating the relationship between social factors and agricultural activities.

The final section presents an analysis of agricultural cash-income as a percentage of total household cash-income, analyzed by location and farm gender. Surveyed farmers were assigned to one of four cash-income categories, reflecting their overall dependence on agriculture as a source of livelihood. This was then related to regional opportunities and gender constraints.

Agricultural activities included in my study include both the cultivation of crops and/or the rearing of livestock, for commercial sale or home consumption. For the most part, these pursuits are referred to in the text generically as “activities.” However, occasionally “crops” is used in place of “activities,” for linguistic reasons (such as “crop package” or “storage crops”) although still referring to both plant and animal based systems.
Objective-based activities

Farmers’ objectives have varying degrees of influence on their selection of agricultural activities. Religious and lifestyle objectives have a fairly general influence, in that they predispose individuals to choose an agricultural livelihood, but do not appear highly linked to selection of specific activities. In contrast, culture, gender, socioeconomic, and life-stage objectives affect farmers’ choice of activities and management strategies. Activities are most frequently influenced by the following objectives, presented in Figure 6-7:

- Culture of agriculture
- Household food
- Household cash-income
- Survival
- Security
- Maximum profit
- Senior cash-income

**Objective: Culture of agriculture.** The history of different ethnic groups in Trinidad created unique agricultural experiences that continue to be reflected in agricultural practices to this day. Culture also interacts with gender to create distinctive agricultural strategies for women of different ethnicities.

**What: Traditional activity.** Certain traditional activities have assumed their own importance, so that people continue to participate in them even when they are no longer profitable. This sentiment is frequently expressed by farmers who have grown up working cocoa estates. Although they freely admit, “Cocoa cannot pay,” they continue to harvest their trees because of their personal perception of its value. Many Indo-Trinidadians express a similar connection to their livestock.
Figure 6-7. Objective-based activities code map
Even when all other agricultural activity has ceased, it is not uncommon to find a small assortment of livestock in many yards.

Two young Muslim brothers are raising a variety of small livestock (goats and fowl), mostly, they tell me, for the love of the animals. Both work full-time at LNG, so agriculture is “not so important, because we don’t depend on it,” but they like to keep the animals as part of their lifestyle (Cedros, Indo-Trinidadian male farmer).

**Objective: Household food.** Many farmers use the garden as a direct source of food for the household. Because women often bear the most immediate responsibility for putting food on the table, their selection of crops is heavily influenced by this objective. The specific food crops that women select are frequently determined by cultural objectives.

**What: Diverse food gardens.** Many women choose to plant a diverse “food garden” with a wide variety of fruit crops, root crops and vegetables, in order to ensure the nutritional health of their family. This is especially common among women with young children.

Behind her house is a profusion of fruit trees, struggling for space in her small yard. She says it is important to have fruit trees when you have children so that they don’t have to steal from neighbors’ trees (Toco, Afro-Trinidadian female farmer).

Food gardens are planted as a way to stretch the limited budget that women have to provide food for the household, thus helping at the same time to meet objectives for household cash-income.

They started planting all sorts of food crops once they purchased the land. They currently grow dasheen, cassava, seasonings, pigeon peas, and okra as well as tending ducks. I ask whether it made a difference in their food bill. She replies with an emphatic “yes!” (Cedros, Indo-Trinidadian, farm couple).
While these small, diverse gardens usually provide an insufficient amount for market sales, they provide a greater security for home consumption needs, often the fundamental objective of women in agriculture.

She gave me a tour around her garden, happily gathering a diversity of tubers and fruits…. She told me of a local expression “Old garden never makes master go hungry” (Toco, Afro-Trinidadian female farmer).

What: Preferred foods. As the primary cooks in most families, women often select crops for their garden based on the foods they prefer to eat. Food choices are highly related to cultural traditions, and reflect the distinct cuisines of Afro and Indo-Trinidadians.

“I plant what I want to eat. Every day you have to eat rice, I can’t manage that. I have to look for my yam. When I’m fed up with rice, or when friends pass, I go out to the land” (to get fresh produce) (Toco, Afro-Trinidadian female farmer).

What: Small livestock. Many women rear a variety of small livestock, most frequently poultry, in the immediate vicinity of the house as part of their strategy to meet household food needs. This is especially common among Indo-Trinidadian women, as it serves to fulfill cultural objectives of being a “good wife” while being an acceptable “female home activity.”

Back at the house, she gives me the tour of the chicken shed and the duck coop. They are fattening 4 ducks to eat at Christmas, and they raise chickens for both eggs and meat. These are “yard fowl” – they have less fat and more muscle than the “white fowl” that you buy in the store. They are tougher but, she feels, healthier to eat (Cedros, Indo-Trinidadian, farm couple).

Objective: Household cash-income. In order to finance the myriad needs of the household, farmers select crops in order to generate cash-income. This cash-income helps them meet a variety of other gender related objectives such as “education of children,” “care of dependents,” and “household food.”
What: Cash crop. Women as well as men select activities specifically for their commercial value. Women often approach this by expanding a successful household activity to a commercial level.

When the children started school, they needed money, so she sought an additional cash-income. She decided to buy 100 chicks… The chicken rearing was very successful, and she operated the business as a “pluck shop” out of the house. She alone provided most of the labor, including killing and plucking the chickens herself. Some days, she remembers, her “hands would be in water all day.” She operated this as a business for about 10 years, and only stopped this last year, when her daughter got a job and told her to stop. She waited several months, until her daughter received her first paycheck, before she dared to close down (Cedros, Indo-Trinidadian female farmer).

What and how: Retail crop. Farmers who have convenient access to a retail outlet often select crops known to have a high demand in that market as opposed to the crops preferred by wholesalers or middlemen. Although retail sales have a labor cost, the higher sale price makes this a worthwhile activity for many female farmers who have few alternative cash-income sources. This also creates an avenue where they can sell small amounts of produce that a wholesaler would not bother with.

She has selected what to plant based on what she sees selling well in the market. Besides her three main crops (pigeon peas, corn, and bananas), she has smaller patches of bodhi and pumpkin Every Saturday she sells her crop in the Pt. Fortin market, waiting all day with her produce until she sells out. She dislikes spending all day in the market, but that is the source of her cash-income for the week. As she says, “Agriculture is everything” (Cedros, Indo-Trinidadian female farmer).

Women also choose to retail their products themselves in order to ensure that they retain control of that cash-income. Especially for Indo-Trinidadian women, this seems to be an important strategy for generating personal access to cash and thus meeting their objective of female cash-income.

On Saturdays she sells in the market, both milk products and whatever crops she has harvested. She enjoys her day out as a chance to socialize. Perhaps more importantly, she controls that income; whatever she earns in the market is hers.
alone. She says that her husband cannot ask her what she earns; she did all the work (Cedros, Indo-Trinidadian female farmer).

**How: Grow and sell crop “package.”** Astute market women take their observations one step further. These women will grow and sell a crop “package” as a way to encourage customers to buy multiple products and increase total sales. This helps them compete with other vendors in the market, especially wholesale vendors, who may sell crops at a cheaper price.

Her strategy is to offer a complementary group of produce. For instance, she sells all the ingredients for the ever popular Trinidadian dish of callaloo: dasheen bush, okra, coconuts, a few crabs, and pepper, so that buyers will be encouraged to buy all from her in one stop. In this way, she sells an average of 3,000 okra in 2 days (Cedros, Indo-Trinidadian female farmer).

**How: Buy and resell.** Given their other constraints, women often cannot cultivate enough of a particular crop to provide a consistent supply for the market. As a result, some women only sell periodically in the market. However, for women who rely on the market for their weekly cash-income, this is not a feasible option. They have learned that customers develop relationships with particular vendors and will patronize those who provide consistently high quality produce. To take advantage of this, some market women buy wholesale and resell at retail prices to supplement their own production.

She does not get to attend church very often because she sells in the market both Saturday and Sunday. She says she has no choice, as “It is just me; I have no husband and no other cash-income.” There is nothing from her garden right now, so she is buying from a wholesale vendor. She places her order with him the week before (Cedros, Indo-Trinidadian female farmer).

Women without easy access to a retail market adapt this strategy to take advantage of local conditions. In Toco, farmers have an hour and half commute to the nearest market (Sangre Grande). Therefore, one woman’s strategy is to buy from town and resell
from her house or by walking through the village. “The trick is to grow or buy what people don’t have in their yard” (Toco, Afro-Trinidian female farmer).

**How: Separate garden.** To maintain control over their agricultural cash-income, some women choose to cultivate a separate garden from their partner. Sometimes women cultivate different crops than their male partner, but more often these female gardens include the same cash crops. In Toco it is not uncommon to find women cultivating a separate plantain garden from their partners, even though they both sell them to the same market. In Cedros, one young woman, part of a large farming family, grew a separate plot of sorrel and peas (also the crops in the family garden) so that she would have her own money for Christmas.

**How: Female days.** In order to meet their many objectives and generate both food and cash-income for the household, women often work extremely long hours. Their agricultural activities are managed to fit around their household responsibilities. This affects their management strategy, as their domestic responsibilities take priority, so that their agricultural inputs, especially of labor, are often sub-optimal.

Now (that her husband is ill) she has to take care of home and garden… She leaves the garden by 11 so that she can be home to cook by 12. “He is always hungry when I get home” so she asks him “why don’t you cook?” But he never does. She takes a brief rest after lunch and then gets to work cleaning and washing (Toco, Afro-Trinidian female farmer).

This situation is compounded for women who also work off-farm to generate a cash-income. Responsibilities to their employer may limit their time in the garden to the barest minimum, as well as limiting their ability to access agricultural information.

In order to work her land she has to get up early, before she opens the shop. Almost every day she spends a few hours gardening, from daybreak until she opens the shop at 8:30 am. She then tends the shop until 7:30 at night (Cedros, Indo-Trinidian female farmer).
**Objective: Survival.** For farmers at the survival level, agriculture activities are primarily selected to minimize risk. These farmers cannot afford the margin of error that a more economically secure farmer can. Farmers at this level produce in expectation of a “count-on” yield (Hildebrand, 2000) and will select a lower priced but more reliable crop over a potentially more profitable but less predictable crop.

**What: Steady crops.** Many crops in Trinidad have a high monthly and yearly fluctuation in price (CSO, 2002; CSO, 2003). Although organizations such as the National Agriculture Marketing and Development Corporation (NAMDEVCO) provide information on past price trends, farmers at the survival level cannot afford to take those risks - and often do not have access to that information. These farmers tend to select crops that are known to have steady prices because of consistent demand.

Her primary cash crop is okra. She has about 200 plants, spread out in small bunches on the flatter areas of her land. She likes to grow okra because the price is good year-round (Cedros, Indo-Trinidadian female farmer).

This observation is supported by national statistics, which shows okra as having one of the most stable prices. Between 1998 and 2001, okra maintained an average price of $0.06 - $0.07 / piece, and in one year never varied more than six cents per month (CSO, 2003), as compared to other crops that rose and fell by several dollars.

**What: Keep cocoa.** Although farmers in both communities consider cocoa to be one of the most labor-intensive and least profitable crops, it remains an important fallback crop for farmers at the survival level. In both regions, cocoa was historically one of the primary estate (both public and private) crops. However, due to the low price of

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49 Farmers at the survival level cannot depend on “average” yields when planning for household consumption, as yields are often below average. “Count-on” yields are the lower levels of production that occur with much higher frequency (Hildebrand, 2000).
cocoa, many of these estates have been abandoned. This makes cocoa immediately accessible to farmers who lease or squat on former estate land, as nobody monitors their harvest. As one farmer said, he “met the cocoa there” when he started working the land and had only to harvest it.

Although cocoa trees benefit from pruning and proper management, they will produce a crop even in a semi-abandoned state. This makes it attractive to farmers at the survival level who have limited labor or cash for inputs. As a traditional crop, cocoa has the advantage of being familiar to most farmers, thus they are knowledgeable about its cultivation and post-harvest processing.

The land had cocoa trees on it when they bought it, however the trees were overgrown and the land had “gone to bush.” He grew up working cocoa on his family’s estate, so he knew how to care for the trees and taught her. Over time they pruned and cleared and started reaping a cocoa harvest (Cedros, Indo-Trinidadian farm couple).

The traditional post-harvest process, although labor-intensive, yields a dry crop that can be stored until it can be transported to a market outlet. As one of the few crops that is government regulated and subsidized, cocoa has a guaranteed market and a constant, albeit low, price. All of these factors make cocoa an attractive crop for farmers at the survival level, as it is feasible for them given their many resource constraints.

Like cocoa, coffee is also a “survival crop” harvested only by those farmers at the lowest resource level. Many estates have coffee trees planted throughout them, but most farmers do not even consider harvesting them, as coffee has higher labor demands and lower financial rewards than cocoa. The only farmers who reported harvesting their coffee were two single female farmers, both contending with severe resource constraints.

She is the first farmer I have met who is actually harvesting their coffee trees. To save time, she lets all the cherries blacken on the branch before harvesting. This way they are partly dried, and she can bring them to market more quickly. She also
leaves the cocoa on the tree as long as possible, so that she can harvest and process it all at once. Everything is done to save her time (Toco, Afro-Trinidadian female farmer).

**What: Eat and sell crops.** Many farmers at the survival level select crops specifically to meet food security objectives. They are not willing to rely on a cash-income to purchase food; they are more concerned to directly produce food for the table. These farmers choose crops that not only have a market value but are also staple foods. Although they desire a cash-income, they are unwilling to trust entirely in a crop that cannot be eaten, in case the market takes a down turn.

He has a wide variety of crops on the land, but he always grows cassava and plantain because he can eat and sell them. He says he would always recommend mixed farming; not that he is against peppers (the crop that GR had specialized in a few years ago), but when the market is low, “can you eat peppers?” (Toco, Afro-Trinidadian male farmer).

**How: Stagger planting.** Many farmers time their planting to ensure a continual harvest and thus spread their profits throughout the year. This management strategy is most crucial for farmers at the survival level, as they have no capital to tide them over lulls in production.

Since agriculture is her primary livelihood, she has staggered her planting, so that she always has something to sell. Otherwise she would get all at once, and “then have nothing in between.” She tries to have at least 3 crops; when one is half mature she will plant the next one (Toco, Afro-Trinidadian female farmer).

**How: Glean.** For farmers at the survival level, no harvest is considered too small. When the bulk of the harvest is over, and larger farmers would have abandoned their fields, small farmers will continue to glean any remaining crop, finding value in the smallest handful of produce, even if it requires a larger input of time. These farmers will travel great distances to harvest one or two isolated trees instead of wasting a crop.

Although the bulk of the cocoa harvest is in the early spring, there are always a few pods ripening, so she makes time to go through and collect them individually. She
may only get five pods one time, three the next, but as she tells me “one-one fills the basket,” and she cannot afford to overlook marketable produce (Toco, Afro-Trinidadian female farmer).

**Objective: Security.** Farmers at the security level select their agricultural activities to provide the maximum safety net. These farmers have more resources than farmers at the survival level, so they are able to invest in activities with higher requirements, but also higher returns.

**How: Diversify agriculture.** One of the most common security strategies is to diversify agricultural activities, so that farmers don’t rely on one crop exclusively. Spatially and temporally, diversification may take many forms, including separate plots or gardens, inter-planting, and crop rotation.

He intercrops bananas throughout his cocoa land. He says the banana is more profitable and definitely less work, but he won’t cut down the cocoa since he can interplant them and thus harvest both. He is also planning to plant short crops this year to bring in some cash-income during the off-season for cocoa (Toco, Afro-Trinidadian male farmer).

Farmers may also diversify by planting a mixture of food crops and cash crops, or a variety of different cash crops.

She tells me they are planting this garden of crops to eat, and “give away.” This is distinct from their cocoa, which is a cash crop (Cedros, Indo-Trinidadian farm couple).

Another common diversification strategy is to plant a mixture of long-term and short-term crops. Some farmers get the bulk of their cash-income from their long-term crops, and only use short-term crops to tide them through the off-season. Other farmers prefer short crops, but like the security of the more sturdy and reliable long-term crops.

Cocoa is her biggest crop, but her other crops provide significant cash-income throughout the remainder of the year. She harvests citrus mostly from November through February, and cocoa and coffee in February and March. She then plants short crops in the rainy season, April through October. She plants bananas and plantains to harvest year round (Toco, Afro-Trinidadian female farmer).
**How: Bank crop.** Farmers who cultivate only or two primary cash crops will select high value crops and grow enough to “bank” their extra cash-income during harvest periods. This surplus is then used to ensure their food security during the off-season.

With the pineapple crop finished, there has been no cash-income from the garden in the last month or so. In the meantime, she is living off the bank, but she is not worried because she anticipated this slow time. When the harvest is coming in, she can make a lot of money at once. Her record is $10,000 TT ($1600 US) in one month. (Cedros, Indo-Trinidadian, farm couple).

**How: Diversify cash-income.** For those who can access off-farm employment, a common strategy is to seek part-time external work in addition to their agricultural activities. This approach provides greater security by diversifying cash-income sources. Whether drought threatens the garden or whether layoffs threaten employment, these farmers are assured of at least one source of cash-income.

“If I’m not working (LNG), I work in the garden right through. Even if I have money, I still want to work in the garden. The most sure means of income is farming. I get a very good income from the animals and crops, so I can assist my family. I cannot depend on the outside salary” (Cedros, Indo-Trinidadian male farmer).

**How: Couple diversify.** Couples often ensure their financial security by diversifying each partner’s primary source of cash-income, in case either experiences a setback. This is a great advantage for farmers with steady partners, as it enables them to keep the garden as a security while also engaging in riskier but more profitable ventures. Often the man engages in off-farm employment, while the woman remains as the primary farmer. In case of layoffs, the garden can absorb the extra labor and translate it into increased earnings.

WA’s husband works on the land with her for a couple of hours every day. He says he “loves this (agricultural) work.” He enjoys the exercise and finds it a nice change from his off-farm job. However, that job provides a better and more secure cash-income than the garden (Cedros, Indo-Trinidadian farm couple).
Although less common, occasionally it is the woman who has the opportunity to work off-farm. Some jobs preferentially sought female employees, so women would transfer the majority of their labor off-farm, while the men maintained the bulk of the agricultural enterprise.

Although WA works part-time at LNG, she still works with her husband in the garden on weekends and whenever her job is slow. They make their financial and management decisions “hand in hand” (Cedros, Indo-Trinidadian farm couple).

**Objective: Maximum profit.** Farmers at the profit maximization level are able to undertake a very different set of activities than farmers at the survival or security level. Having more resources and fewer constraints, they can select activities based purely on their expectation of the highest returns. Agriculture is no longer regarded as a source of food or stability but is purely business. Farmers’ primary objective is maximizing profits. And, given their ability to invest more highly in their management practices, they often can realize a large part of the potential yield.

**What: High-value activity.** Farmers who are focusing on profits evaluate the market value of various activities and select those that promise the most returns. Having access to up-to-date information and greater financial security, they are not confined to tradition and the “safe” activities. They are willing and able to try different activities in their search for more profits. For many farmers, the initial change is from cocoa into banana and plantain. As one farmer said, “The price you get for cocoa is not economical; what you get you put back in.” Still later, those same farmers often report switching to short crops such as pimento peppers that have an even higher market value.

He points out his “experimental” section, a hillside with about 400 papaya trees. Originally he had just a few papaya, but when he carried the fruits to market, they sold rapidly, faster than the plantain. He decided to try a whole field. If the crop does well, he plans to further expand his production next year (Toco, Afro-Trinidadian male farmer).
Although this adaptability is often the hallmark of younger farmers, senior farmers do change activities given adequate information and support. One senior farmer had worked in cocoa for 35 years, and only recently started planting bananas and plantains. Finally, the old man said, he is making money.

**What: Short crops.** One of the main differences in activities is a tendency for higher resource farmers to focus on short crops instead of the more traditional tree crops or long-term root crops. Short crops require a lot more inputs, including labor, transport, knowledge, and capital, all of which are more available to these farmers. In return, short crops generate a higher level of profits and a more constant cash-income stream.

When MA moved up here, the first thing he did was cut down the cocoa trees, as he does not think cocoa production makes any kind of economic sense. He laughs about the once a year harvest, saying you need to have “real plenty cocoa to live off that.” He has gone almost entirely into short crops because he sees them as faster money, which provides a cash-income year-round (Toco, Afro-Trinidadian male farmer).

Because one of the main requirements of short–term crops is a much higher labor input, this activity is also more available to farm couples, who have the benefit of both partners’ labor.

They have plots of sorrel, bhaji (“spinach,” actually in the amaranth family), okra, and dasheen…. Bhaji requires weekly picking, however the plants yield for several months, and fetch a high price in the market (Cedros, Indo-Trinidadian farm couple).

**What: Seasonal market crop.** Farmers with access to current market information often time their planting of certain crops to capture high seasonal prices, while cultivating other crops the rest of the year. Seasonal market crops have a large price fluctuation, especially around holidays such as Christmas, Easter, and Carnival. In 2000, for example, pigeon peas went from a fairly steady price (TT$) of $4.30 / kg during most of
the year to $12.30 / kg in December, while sorrel went from $3.30 / kg to $6.00 / kg\(^{50}\) (CSO, 2002). However, there is a risk in anticipating such seasonal markets, as other farmers also respond to these price signals and may oversupply the market in subsequent years. This was evident in 2001, as pigeon peas rose less than a dollar at Christmas, and sorrel actually decreased by a dollar (CSO, 2003).

MA planted sorrel and pigeon peas in anticipation of a good Christmas market. He tells me the only trick with sorrel is to sell it before Christmas because afterwards it has no value again (Cedros, Indo-Trinidadian male farmer).

**What: Export crops.** The search for the highest value crop may eventually lead farmers to the export market. This activity is primarily available to farmers who have achieved a relatively high level of production and have developed good connections with external sources of information, as they are better able to ensure the standards of the international market.

MA grows several varieties of hot peppers, some a clear waxy color, while others are a deep green, turning orange and red as they mature. The preferred peppers are the “full-ripe” green peppers: they are for the export market, and fetch the highest price. The ripe colored peppers fetch a lower price, and must be sold and consumed locally (Toco, Afro-Trinidadian male farmer).

**What: Processing crops.** A few farmers periodically market to the food processing industry in Trinidad. Although a relatively small industry by world standards, Trinidadian brands are sold throughout the Caribbean and can absorb a limited amount of production. Because most of the processing plants are located in central Trinidad, this strategy is only feasible for farmers who have secure transportation. A few of the larger plantain farmers sell their crop to plantain chip processors, and a hot pepper farmer sells his ripe fruit to Matouks for its hot sauce. One farmer had briefly supplied babadeen to Willys and Flava

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\(^{50}\) Most crops appear to vary ten cents or less a month.
Rite, two national ice cream companies. Another farmer was exploring the possibility of marketing orange peel to Angostura for production of bitters. Farmers who are connected to the market are quite creative in their search for outlets; the main difficulty is the lack of market information.

**Objective: Senior cash-income.** Agriculture is a demanding physical activity, with no retirement plan for old age. For this reason, many farmers select crops based on their expectations of their future abilities and needs, to ensure their ability to practice agriculture at an advanced age. This allows them to meet senior life stage objectives, such as “future easier” and “senior cash-income.”

**What: Low labor activity.** For many farmers, the primary concern with increasing age is decreasing strength, combined with the desire to not perpetually work so hard. Towards this end, farmers select profitable activities that demand less labor on a daily basis. Thus a senior woman told me that she had previously switched from plantain to “fig” (banana) because she could no longer carry the heavier bunches of plantain. Then she realized there was a local market for peppers and is now focusing entirely on them, as they are much less physically demanding to cultivate and harvest. Many farmers plan for this time in their life by planting a long-term timber crop that will provide substantial financial benefit in the future.

In the future, he plans to switch more to long-term tree crops such as coconuts and citrus, because “when I get older, I won’t be able to work like this again” (Cedros, Indo-Trinidadian male farmer).

**What: Time intensive activity.** Although physical strength declines with age, seniors may have more time available for agriculture. After retirement, farmers can visit their gardens more frequently, which allows them to select crops that require more
attention. This expands their options, and often enables them to select a higher value crop as well.

Since he retired a few years ago, he has begun working on the land full time, and they have greatly expanded their production of bananas and plantains. Before, they planted a lot more cassava, because it could be left untended for longer periods (Cedros, Indo-Trinidadian farm couple).

**How: Expand production.** Part-time farmers often expand agricultural production once they retire from outside employment, to compensate for lost cash-income. Many jobs do not provide a secure or adequate retirement salary, and the government pension program cannot sustain their way of life. Therefore, it is fairly common for seniors to begin more extensive cultivation.

MA retired in December, so he has more time to get back into gardening. Before, their garden was limited to what WA could manage, but with both of them on the land, they are slowly expanding their cultivated area (Cedros, Indo-Trinidadian farm couple).

**Resource and constraint - based activities**

Resources and constraints have a large influence on farmers’ agricultural strategies, as farmers select new activities based on their resource requirements and manage existing activities to minimize the effect of constraints. The following categories of resources and constraints had the greatest influence on the selection of agricultural activities:

- Mobility
- Capital
- Transportation
- Land
- Labor
- Knowledge

For comparison, each factor is discussed first as a resource, then as constraint (Figures 6-8.1 and 6-8.2).
Figure 6-8.1. Resource- and constraint–based activities code map
Figure 6-8.2. Resource- and constraint-based activities code map


**Mobility constraint.** Limitations on mobility have a large impact on agricultural strategies, especially for women, caretakers, and seniors. Women’s mobility can be constrained by either the requirements of motherhood or by cultural norms. The constraints of childcare are relatively short-term and can usually be accommodated for several years. The greatest limitations are faced during the early years, before children attend school. Cultural constraints, on the other hand, are more enduring, and must be integrated into the long-term agricultural strategy. Many Indo-Trinidadian women mention limitations on mobility as an important factor that shapes their agricultural strategies. Mobility can also be a constraint for male and female farmers with increasing age and decreasing strength and health.

**How: Home production.** A common response to mobility constraints is to exclusively cultivate land adjacent to the house. The amount of land and the type of tenure will dictate the specific choice of production. Whereas a woman with access to extensive private land may cultivate long-term, high-value crops for commercial sale, women who squat on small parcels will often cultivate a backyard garden.

WA is involved in the maintenance, harvest, and sale of citrus and fig, which grow on lands behind the house. WA says that her husband doesn’t like her to “go out” without him, so that basically her whole life is spent within the house. However, because the garden is on their property, she can work there (Cedros, Indo-Trinidadian female farmer).

Although care of dependents is primarily the province of women, when it is assumed by men it creates the same limitations on mobility. When possible, farmers with caretaking roles will preferentially cultivate land close to the house, where they can fulfill both responsibilities at once.
From almost any point in his garden MA can see back to the house, an important concern now with his wife so sick. He has a more distant garden as well, but he doesn’t go there very often because he doesn’t like to go so far from the house (Cedros, Indo-Trinidadian farm couple).

Senior farmers also contend with reduced mobility by preferentially cultivating land close to their home. In some cases senior farmers will abandon the security of their private land, if it is too far away, in favor of squatting on land that is more easily accessible.

They own 7 acres of land, however, it is more than a mile away, and their lack of transportation as well as their advancing age has made that increasingly less desirable. They are currently cultivating only the acre of land immediately behind their house. MA admits they are squatting there, but asks “Why should I go far away (ie walk to the other land) to harass myself (work in the garden), when I can harass myself right at home?” (Cedros, Indo-Trinidadian farm couple).

**How: Garden near spouse.** Although many Indo-Trinidadian women will not work a distant piece of land by themselves, they will do so when accompanied by a spouse or male partner. In this way, they gain access to a broader land resource. Married women in farm couples have the greatest advantage, as they have their husband’s company on most days. For other women, whose husbands work off-farm, they are restricted to weekends, holidays, and retirement. Some women will work the same crop as their husband, while others will create their own garden, but within seeing or shouting distance of each other.

She plants “short crops” every year at Corpus Christi, so that she can accompany him to their land. While he works on the cocoa and plantain, she works in her adjacent vegetable garden on a hilltop, from which she can see down to him (Cedros, Indo-Trinidadian farm couple).

Although these women may be constrained by mobility, once they have the opportunity to cultivate more, they will often work with an unrestrained vigor and enthusiasm.
She wouldn’t work on the land by herself, but now that he is on the land more, she works alongside him. He remarks that he is “her company,” saying that she is the “farmer.” Apparently she is the one to carry the bunches of banana and plantain out to the road once they are cut. Considering her small size and the distance of the farther plots, that is an impressive feat (Cedros, Indo-Trinidadian farm couple).

**How: Near and far gardens.** Even if women don’t face cultural limitations, almost all women have constraints on their time because of their multiple responsibilities to household and family. This limits the time they have available for travel to distant gardens. To accommodate this, some women make several gardens, some near and some far away from the household, and strategically select crops for each based on their cultivation requirements.

She is growing sorrel and pigeon peas on another, more distant, piece of land. She chose to grow those crops there because they do not need constant attention, and she can only visit them once every few weeks. On the other hand, her fine crops (peppers, etc) need to be weeded more frequently, so she keeps those close to the house (Cedros, Indo-Trinidadian female farmer).

**How: Sell from home.** Women with limited mobility may also market their products from home. If a woman lives on a main road, she may post a small sign advising passer-bys of her products. This allows women to sell occasional small amounts of produce, without the cost of transporting to market or renting a stall.

She is slowly transforming her horticultural system into a commercial operation. Previously it was just a hobby for her, as her time was limited. Now, since her daughter is grown, she has more free time to develop the business. Most of her sales are done at her house. People who know about her operation will drive out. Otherwise she will send her plants with someone else to sell at the market (Cedros, Indo-Trinidadian female farmer).

Some women sell processed goods as well, which increases storage, value, and market desirability. A few women still make and sell “dahee,” a traditional cows’ milk yogurt. Although this was once common to most Indo-Trinidadian homes, it is a dying art, and has an appreciative market.
How: Sell at market. Although mobility constraints may exclude attendance at the retail market, for some women the market is an acceptable venue for participation. Given other limitations on their public activities, these women relish their weekly market day as a chance to socialize and hear about the latest news.

She feels like she is missing out when she does not make Saturday market. Just this last weekend she harvested a bunch of pewa51, “just for fun,” and took it in to sell (Cedros, Indo-Trinidadian female farmer).

Capital resource. Capital is probably the most versatile resource, as it translates, in any number of ways, into the ability to increase inputs into the agricultural system. Used wisely, capital can help an activity reach its potential.

How: Hired labor. One of the main uses and benefits of capital is the ability to hire labor. For most farmers, their production is ultimately limited by their own labor capacity. With the accumulation of capital, most farmers will seek to hire labor and expand their production potential.

MA’s cultivated area is extensive, stretching up and across the hills, with bananas and plantains intermingled with the pepper trees. An older worker waves at us from the far side, while a younger man is working near us. They space out to systematically pick through the bushes, piling the peppers into woven plastic sacks, which mark their progress across the hills (Toco, Afro-Trinidadian male farmer).

How: High inputs. Farmers with profitable businesses reinvest a large amount of their capital in their agricultural operations. They recognize that higher inputs usually lead to higher outputs. As one farmer said, “You have to be willing to spend money to make money.” For her, this translated into buying chemicals. The ability to invest capital in inputs may lead to a traditional crop being cultivated more intensively, or it may lead

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51 Pewa is the local name for the fruit of the pejibaye palm, Bactris gasipaes.
to the selection of an entirely different crop, that requires a high level of inputs to begin with.

She shows me her shade houses. Everything has been done very attractively. The attention to aesthetics bespeaks a different type of lifestyle than the majority of farmers I have visited. The walls are made of intertwined palm fronds and anthuriums are growing in a bed of coconut husks. The benches are filled with a variety of ornamentals, and baskets of orchids hang in neat rows (Cedros, Indo-Trinididian female farmer).

**Capital constraint.** For the vast majority of farmers, activities are dictated by capital constraints, as opposed to capital resources. Many farmers accommodate this by selecting activities that require low levels of inputs. Others simply add fewer inputs than optimal. Even though they have lower yields, this is preferable to no production at all.

**What: “Easy” crops.** Farmers who face capital constraints often select crops that are less demanding and thrive (or at least survive) with minimal inputs, such as cassava or pigeon peas. In this way, although farmers might appear to be choosing a lower value activity, they are actually making a rational decision given their resources.

WA only grows the small local banana. She knows there is “plenty more money in Grand Michelle” (a larger variety) but says it is also more difficult to grow. It will “only grow certain places” and requires lots of care and chemicals, whereas the local “green fig (banana) grows everywhere” (Toco, Afro-Trinididian female farmer).

One of the most limiting inputs is water, as few farmers can afford irrigation systems. The rainy season is limited to December through May, and droughts are frequent and can have devastating effects. Therefore, many farmers choose to grow crops that are tolerant of dry conditions.

He is increasingly converting his land from plantain to pineapple, as the pineapple has flourished in rain or sun and has given him a more reliable yield than the plantain, which “breaks its neck” in the dry periods. He has had “no problems” with his pineapple. He is also planting cassava, as it can establish itself under dry conditions, until the expected rains fall (Cedros, Indo-Trinididian male farmer).
How: Low inputs. Farmers who select crops based on market demand may choose to grow a more demanding crop, but simply add fewer inputs such as fertilizers or pesticides. Although this may decrease production levels, many farmers do not recognize the direct relationship between soil fertility and plant growth. Others are willing to accept a reduced harvest as preferable to cultivation of an easier but lower value crop.

She grows a variety of short crops, melangene (eggplant), hot peppers, and pimentos, which she sells at the market. She remarks that she does not know why the fruits have matured so small this year. I notice she has used very generous spacing between her crops, perhaps in an effort to compensate for her low levels of inputs (Cedros, Indo-Trinididian female farmer).

Capital constraints prevent from farmers from adding technological inputs to their management practices. Many farmers are not able to afford simple irrigation systems and must wait for the rainy season to plant their gardens.

He waits on the rains to plant, although he has a nice piece of flat land, right by the river. He says that he could grow throughout the year if he only could afford a pump. “It is not like in the US, it is not so easy for poor people here to even save a little money” (Toco, Afro-Trinidadian male farmer).

How: Adapt technologies. Many of the “technologies” and cultivation techniques that are recommended to farmers are designed for high input systems. Because this is far from the reality of most farmers, they often adapt the recommendations to meet their constraints. Although this may decrease the advantage of the technology, it allows the farmer to integrate it into their farming system and capture some portion of the benefits.

She shows me her adaptation of the growbox. She couldn’t afford the bagasse\textsuperscript{52} or other special materials that the Extension officers had recommended, so she made it with the materials available to her. The box is built of an assortment of wooden planks and filled with soil from her yard, topped by a neat arrangement of cabbage seedlings. She waters the plants directly from the pipe, although she mentions their recommendation to use water that has sat in a tank (Toco, Afro-Trinidadian female farmer).

\textsuperscript{52} Bagasse is the fibrous stems of the sugarcane plant, left as a byproduct after processing.
**How: Off-farm cash-income.** Farmers who do not generate enough cash from their agricultural activities may use other sources of income to purchase agricultural inputs. Often the cash-income from an off-farm job is used to subsidize their agricultural enterprise. The most economically constrained farmers use government welfare programs to support their agricultural activities. As one single female farmer said, she was “putting public assistance\(^{53}\) into the garden.”

**Transport resource.** Having access to personal transportation is one of the most valuable capital resources in these remote rural areas. Transportation increases farmers’ profit margins in several ways. It eliminates the need to pay for transportation of goods to market and allows farmers to capture the higher retail prices, as opposed to farm gate prices. Farmers can also move large amounts of produce easily for sale at wholesale markets. Some farmers with private transportation go beyond personal sales and create an agricultural activity around this resource.

**How: Buy and sell.** Having access to a truck (locally referred to as a “van”) enables farmers to augment their own production by buying directly from other local farmers who produce the same crop. In this way, they can bring a larger amount to market for wholesale or control a larger portion of the retail market.

Besides growing plantain and bananas themselves, they also buy from 7 or 8 area farmers and sell in the Pt. Fortin market on Saturday. Every Friday, they drive to the farmers’ fields and collect bunches for sale the next day (Cedros, Indo-Trinidadian farm couple).

**How: Truck sales.** In situations where the retail market is relatively distant, or a better market exists elsewhere, produce can be sold directly from the truck bed, which

\(^{53}\) Public assistance is the local term for a variety of welfare programs.
becomes a mobile market of its own. This allows farmers to increase the volume of sales as well as the price they receive.

His son has taken a load of pineapple into Pt. Fortin, to sell outside LNG, the natural gas plant. This is a popular spot to vend because of the large number of workers who pass in and out morning and evening (Cedros, Indo-Trinidadian male farmer).

Some farmers, realizing the benefits of this approach, extend the mobile shop to include items besides agricultural produce. This is especially successful in remote areas, which have few or no local shops.

WA is a half-time farmer, half-time vendor. She sells her own produce, as well as that of other local farmers, out of the back of her truck. She usually carries 8-10 different things in her van, including clothes and coconut water. She feels this is a good livelihood, as “Selling profit is high, more than 100%” (Toco, Afro-Trinidadian farm couple).

Transport constraint. The majority of farmers in these regions contend with transportation constraints. Public transportation is infrequent and entails a high cost in time and money. Farmers are constrained to the often-unpredictable schedules of market vans, which may result in a loss of quality and ultimately a decrease in the quantity of marketable produce.

What: Local market crops. Because of the transportation constraint, some farmers select crops based on local demand. Although external markets may pay higher prices, this is offset by the cost of transportation. Therefore, farmers selectively cultivate crops that can be sold locally. One female farmer in Toco grows a variety of short crops that she sells entirely in the village, by walking door to door.

Since he doesn’t have a truck, he chooses crops that he can sell locally. He supplies the local hotels and the school-feeding program, which buys produce from local farmers for the area schools. He is hoping to get a truck this fall because he would like to sell his crops in the market (Toco, Afro-Trinidadian male farmer).
Most farmers prefer to sell their crops at the retail market in order to receive the higher price, even if it means paying for transportation. However, if their harvest decreases below a certain level, the cost of transportation becomes prohibitive, and they must seek out a local market. Some farmers are able to identify small local outlets, such as hotels and dry goods shops.

When WA has small amounts, she sells at the Cumana Consumer Cooperative. She packages her tomatoes in plastic bags, putting in several ripe and several half-ripe fruits, so that the consumer “doesn’t have to eat them all at once” (Toco, Afro-Trinidadian female farmer).

**What: Storage crops.** The lack of transportation leads some farmers to select crops based on their storability. Most crops produce an abundant harvest for a brief period of time, but farmers in these areas have limited refrigeration. Therefore, perishable crops must be moved to market before they spoil. To address this, some farmers select crops based on their storage ability. For instance, pineapple can last a few weeks at room temperature before its quality decreases, while properly harvested cassava can last a month.

He chose to grow pumpkin and squash because they can be stored a long time, so that the schools and hotels can buy it throughout the year (Toco, Afro-Trinidadian male farmer).

**What and how: Middleman crops.** The transportation constraint leads many farmers to produce the crops that local middlemen deal in. Middlemen collect produce from farmers’ land, removing the need for private transportation. Although middlemen pay less than the retail market price, for many farmers this is the only option. The smallest farmers often rely on specific middlemen, known to pay the lowest prices, because they will pick up even the smallest amounts of produce.

We bring up two small bunches of banana, and leave them by the side of the road for the middleman to collect. She knows the retail price in the market is higher than
the price she receives, but she says going to the market is hard work, and not worth it unless you have plenty to sell (Toco, Afro-Trinidadian female farmer).

Although convenient, the lower profit margin ultimately forces some farmers to consider other crops or an alternative marketing strategy.

Her plantain crop has been a disappointment. She had planted a lot of trees, but she is reconsidering her choice of crop now. Although plantain has been expensive in the market recently, she has not been able to secure a “good” price, despite using several different middlemen. She says she has to find a better way to make a profit, because it is “small money,” no matter how hard she tries (Toco, Afro-Trinidadian female farmer).

**How: Sell roadside.** The effort to sell produce without an available means of transportation requires ingenuity on the part of the farmer. Even local sales may be prohibitively time-consuming if it requires walking door-to-door. Therefore, some farmers set up roadside stalls. This usually does not produce high volumes of sales on a back road, so farmers may eventually move to a more heavily trafficked road.

Further down the road we come to a quite extensive field, laid out in neat rows of pineapple plants. A table on the side of the road is stacked with about 20 fruits for sale. I am amazed to find someone selling on such a back road, especially given the quantity of fruit in the field (Cedros, Indo-Trinidadian male farmer).

Although selling high volumes of one crop may prove difficult, this approach has greater potential for farmers with a diverse array of products for sale. They can profitably sell a small amount of a wide variety of produce, exactly the amount desired by consumers in remote areas, who are glad not to have to travel to market for produce.

She selectively harvests some cucumbers, as she had gotten a phone call that morning from a customer requesting some. In the future, she hopes to put up a roadside stand. Ever since she started planting, people have been asking her for produce. She is trying to establish a reputation, so that eventually she can sell the majority of her harvest there (Toco, Afro-Trinidadian female farmer).

**How: Process crops.** Farmers lacking transportation may choose to undertake the additional labor of post harvest preparation to increase the longevity of their crop. This is
especially common among cocoa farmers, who have the option of selling their crop wet or dry. The standard government cocoa price is adjusted to compensate for water loss with drying, so the final profit is comparable for wet or dry cocoa. The main advantage of selling wet is the reduction in labor, as the post-harvest preparation of cocoa (drying, “sweating” and “dancing”) requires a substantial investment of time and labor. However farmers without transportation cannot take advantage of this labor savings, as they must ensure the longevity of their produce.

I mention to 2 female cocoa farmers that MA sells his cocoa wet. They agree that it is a better return for the labor, but they say they can’t do it because they don’t have personal transportation, unlike MA. Therefore they have to dry their cocoa so that it doesn’t mildew before they send it down to the buyer by taxi (Toco, Afro-Trinidadian female farmer).

Land resource. Farmers with secure land access often base their crop selection on the characteristics of their parcel. Some farmers inherit previous agricultural systems, especially tree crops, while others are affected primarily by accessibility, slope, or availability of water.

What: Existing crops. Farmers that gain control of land, either through private inheritance or lease, may choose to continue cultivation of existing crops. The decision whether to retain the original crop depends on the crop’s current profitability as well as the farmer’s other resources and constraints, that permit or constrain the conversion of the land to a new agricultural activity. Lower resource farmers often retain the existing system, as it requires fewer inputs than conversion. This is particularly common in the case of tree crops, which take some years to mature and produce a harvestable crop.

She received a prime plot in the land distribution. The real wealth lies in the mature trees that are on it: primarily cocoa, but also a significant amount of coffee and citrus. She had to open up and rejuvenate a lot of the trees when she acquired the land…Cocoa is her biggest crop, but her other crops provide significant cash-income (Toco, Afro-Trinidadian female farmer).
Land constraint. As discussed earlier, land is most commonly a constraint, as there is limited access to arable land, especially for Afro-Trinidadian farmers. Farmers adopt a number of strategies to deal with land constraints.

How: Squatting. For many farmers in Trinidad, squatting is seen as the only avenue for land access. They do not have adequate capital or information to purchase private land, nor do they believe they will receive land if they apply for a lease through the state lands office. Squatting is a natural response, especially in light of the vast amount of land that is currently abandoned. Many squatters contend that the absent landowners do not care about their land.

She is squatting on abandoned private land. She tells me that most of the landowners do not live here and so “do not mind” if she farms the land, since nobody is using it (Cedros, Indo-Trinidadian female farmer).

Some farmers have squatted on a piece of land for so long that they feel a claim to the land. The fact that the state has made no attempt to use that land in all that time enhances their sense of entitlement and security.

They are currently cultivating 7 acres. It is actually state land, so they are technically squatting on it, but he tells me that he has been working that land “since he was a boy” which is more than 30 years (Cedros, Indo-Trinidadian, farm couple).

Other farmers only turn to squatting when all attempts to legally secure land are exhausted. They express justification is squatting because they tried all alternatives without success and feel the system of land distribution is flawed. However, they are uncomfortable without secure tenure and try to establish some sort of legal claim to the land.

He applied for land when the estate was being divided but did not end up getting a piece. Shortly after that, he started squatting on 5 acres. He has heard that this will be the next section to be distributed and is starting to plant hardwoods and fruit trees to prove he has been working the land for a while. He believes this will give
him “first preference” if the land comes up for lease or sale (Toco, Afro-Trinidadian male farmer).

**How: State forest.** The inability to secure legal access to land has driven many farmers to squat on the state forest reserve. Although this land is supposed to be protected from all agricultural activity, it remains one of the few options for farmers without land.

She points out where the state forest reserve begins. She estimates that more than 50% of local farmers grow in the forest. She says the farmers are of mixed ages, but mostly male, as “those trees are really big” and more difficult to clear. Wardens only come out when two farmers have an argument, and one blows the whistle on the other. Otherwise the government doesn’t “pressure” the farmers much (Toco, Afro-Trinidadian female farmer).

**How: Farm without lease.** Many farmers attempt to address land constraints by applying for a lease to a parcel of state land. However, in numerous cases these applications have been delayed for ten or more years, with no expected date of resolution.

While frustration has driven some farmers off the land, others have decided to cultivate state land anyway and feel justified because of the bureaucratic delay.

She notes that she is not legally supposed to be working the land yet, since she does not have formal title. However, she discounts that due to the long lapse in government action (Toco, Afro-Trinidadian female farmer).

**How: Relatives’ land.** Farmers without personal title frequently access land through relatives, especially if only one family member is interested in agriculture.

Women farmers frequently use this strategy, as they are least likely to have land title in their own name (only 10%). Most women work a relative’s (35%) or spouse’s (35%) land, or else squat (30%).

She farms several acres of land that belongs to her brother. He was awarded the land in the government land distribution, but she is the only one of her brothers and sisters who “likes to make garden” (Toco, Afro-Trinidadian female farmer).

**What: Hillside crops.** The scarcity of land has driven many farmers to plant on every inch of land they can access, including nearly vertical hillsides. While only a few
farmers mentioned any concern with soil erosion or used soil conservation techniques, some did select crops based on their ability to thrive under such conditions.

Once the rains start, he will plant pigeon peas and sorrel on the steeply sloping land around the house, as he says they are suitable for cultivation on the hillside (Cedros, Indo-Trinidadian male farmer).

**How:** Squat by road. Land accessibility, as defined by walking distance and motor vehicle access, has a huge impact on farmers’ strategies. Farmers preferentially cultivate easily accessible land, even if it means squatting, in order to decrease travel time and facilitate collection of ripe produce. This is especially important for farmers who grow heavy or perishable crops or have a prolific short-term harvest.

They are squatting on several different pieces of land, on which they grow a variety of short crops. Their bananas are on a parcel that borders an access road, from which they can transport their produce. The small dirt road is impassable right now because of mud, but in the dry season a truck can come in (Cedros, Indo-Trinidadian female farmer).

**What and how:** Larceny crops close. Inaccessibility of land, combined with a lack of transportation, has led to an epidemic of agricultural larceny, as farmers cannot oversee their crops. The problem is so prevalent that it affects farmers’ selection of crops and their planting strategy. Many farmers only grow valuable or easily transportable crops near their dwelling, away from the road. Although the government has attempted to redress the problem though a farmer identification system and periodic roadblocks, this has not been sufficient to staunch the situation. One female farmer had plantain stolen from the front of her yard, within sight of the house. The thieves had taken advantage of nightfall and the road that borders her land to swiftly remove her most valuable produce.

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54 This is often referred to as praedial larceny, from Latin, stealing from the “hearth,” or home garden.
Labor resource. Because many small farmers can afford only limited capital inputs, labor is the crucial factor in determining farmers’ production potential. Farmers plan their management strategy to maximize their returns from this resource. Farmers with available labor, either hired labor or network labor, can engage in agricultural activities not feasible for the labor constrained individual.

What: Labor intensive crops. Farmers with a secure labor force have the option of planting more intensive crops, which demand frequent cultivation. These crops often fetch higher prices and mature more quickly, providing a larger and steadier cash-income.

MA has focused primarily on vine crops: christophene, babadeen, passion fruit, and a long gourd like vegetable called gouge. He has an extensive and impressive system of trellises running up and down several hills. He currently hires 3 people full-time, so at any one time there are usually two working. He would like to hire more, as he feels the bush is catching up with them, but says it is hard to get workers (Toco, Indo-Trinidadian male farmer).

How: Extensive cultivation. The other strategy of the labor-rich farmer is to expand into more extensive cultivation. This allows farmers to plant and maintain a greater land area, likewise increasing yield and thus profit.

They have banana, plantain and coffee inter-planted throughout their 7 acres. That amounts to a fairly substantial harvest, so I ask about hired labor, but they point to each other and laugh. They are both retired now and thus have been able to expand and cultivate a truly impressive amount of land (Cedros, Indo-Trinidadian farm couple).

Labor constraint. The more typical scenario is for farmers to be limited to their own productive capacity, and thus be constrained to the fruits of their own labor. With labor being a primary constraining resource, farmers employ a number of strategies to maximize their return on their efforts.

What: Low labor activity. One of the most frequently mentioned strategies is the selection of activities that do not require high amounts of labor. This includes not only
the total amount of labor, but also the frequency of care required. For farmers with distant
land and limited mobility, this is often the primary criterion for selection of a crop.

She chose to grow cassava “Because it is easy.” Even though she visits her garden
only once a week, the cassava still flourishes, unlike peppers or short crops that
require daily visits to “talk to them” (Toco, Afro-Trinidadian female farmer).

This rationale is frequently mentioned by female farmers, in both regions,
illustrating the similarity of the constraints they face by virtue of their gender and sole
responsibility for the garden.

She selects crops that can “take care of themselves” and don’t need the constant
attention that “fine crops” (short season vegetables like tomatoes and spinach)
require. Only her father in law plants fine crops, as he is able to go on their land
every day (Cedros, Indo-Trinidadian female farmer).

**What: Variety selection.** The influence of labor constraints extends beyond crop
selection to include the choice of a specific cultivar. Farmers evaluate the demands of a
certain variety and their available labor, and often make quite a sophisticated selection to
maximize the returns to their labor. This was best illustrated by a female farmer who had
2 pieces of land, one close to an access road which was traveled by local buyers and one
a half hour walk from the access road, along a narrow dirt track and traversing some
rather steep hills. As the lone farmer in her household, she has to carry out every piece of
produce on her back to meet the middlemen on the road.

She points out the different varieties of plantain. Her selection has been influenced
by the distance she has to carry her load. The “horse” plantain has the highest
demand, but she only has a few, because she says it makes a smaller bunch, only 30
or 40 pounds, and to make a whole trip carrying only that is not worth it. The
French plantain is the ideal size for her, as most bunches weigh about 60 pounds,
which is a good load. She has occasionally planted Giant plantain, but then has to
ask her brother for help, as the bunches can weight up to 150 lbs. Size is not an
issue on the land close to the road, so she plants other varieties (Toco,
Afro-Trinidadian female farmer).
**What: Light harvesters.** The labor demands of a crop are usually highest at harvest time and can be extremely difficult for labor-constrained farmers to handle. Therefore, farmers may choose crops that mature more sporadically, over a longer time period, or those that can be left on the plant without spoiling. For instance, as a male farmer explained, ripe cocoa can last on the tree for up to 3 months. This is extremely beneficial to him, since he alone does all the harvesting.

She chose to grow pumpkins because she can manage them alone. She says bodhi, okra and cucumbers are more difficult because they have to be harvested every 3 days. She will try to hire help as needed at harvest time, but it is difficult to get workers (Toco, Afro-Trinidadian female farmer).

If a crop proves to be too labor intensive at harvest time, and a farmer cannot access any other labor resources, much of the harvest may spoil. To avoid this, farmers will plant minimal amounts of heavy producers.

The previous year, she had planted some sorrel on a whim from the seeds she saved from a drink. The plants had grown well, but it was a lot of work to harvest the fruit. Therefore, this year she decided to plant just enough for her own home use (Cedros, Indo-Trinidadian female farmer).

**What: Existing tree crops.** One of the main crops that is feasible for labor constrained farmers are the mature tree crops that dot much of the landscape, namely cocoa, coffee, nutmeg, coconut and citrus. Farmers choose to harvest these crops because they do not require a yearly investment for seed and will produce for years with minimal maintenance work. Because of these characteristics, tree crops often serve as a fallback. During periods of stress, farmers may harvest tree crops that had been previously neglected. When other resources are depleted, tree crops provide a lifeline by enabling farmers to acquire a harvestable crop with minimal inputs. This cash-income, although limited, may be the difference between survival and failure, and in some cases enables farmers to recover from a setback.
She lost everything in the fire, including, most importantly, her tools to work the land: spray cans, a weed whacker, and a power saw. Without her tools, it has been very hard for her to start earning money again, as all the work she does is now by hand. Without the whacker, the weeds have grown up quickly, and she has not been able to plant short crops. She is waiting for her next harvest of tree crops (cocoa, coffee, citrus) to bring in some cash, to start re-investing in equipment and building back up (Toco, Afro-Trinidadian female farmer).

**How: Plant together.** Farmers attempt to save labor by strategically planting different crops together, in an attempt to double the return on their labor input. Farmers are aware of plants’ spatial requirements and select crops that mature at different times, however they do not indicate concern about competition for water or nutrients.

She has inter-planted cucumbers and okra with her bananas and plantain. She plants the cucumber “in the same hole” with the okra, so when she needs to mold (hill), fertilize, or spray, she can treat both crops at the same time. The cucumbers have finished fruiting, just as the okra is getting ready to bear (Toco, Afro-Trinidadian female farmer).

**How: Less cultivation.** Farmers with limited labor may respond simply by doing less cultivation. As a male farmer told me, he decides how much to plant based on the labor requirement, as he relies primarily on family labor. With his children moving away, he can cultivate less. By decreasing their level of inputs, farmers can still participate in activities that would otherwise be prohibitive.

Her cattle herd grew to almost 20. She didn’t pen her animals and “do all that” so she found it relatively simple to care for cattle… she would just “tie it out and give it water” (Cedros, Indo-Trinidadian female farmer).

Farmers can also decrease their labor input by doing less post-harvest processing than recommended. Although this may result in a sub-optimal product, farmers will see this as advantageous unless there is a sharp decrease in profit.

She has around 100 cocoa trees on her land. She picks and “breaks” all the cocoa herself, in about 4 days, because she can’t get any help. She dries it at home, but she does not bother to “sweat” it, as that adds 3-4 extra days to the process, and doesn’t result in a higher price (Toco, Afro-Trinidadian female farmer).
How: Male land prep. Many women, although physically able to clear their land, will hire men just for land preparation. This gendered labor constraint is apparent in both cultures, and appears to be internalized by women as well as men. Even in Afro-Trinidadian communities, in which women are expected to perform other physically demanding tasks, this is the one gender division of labor that remains highly apparent. Only one woman reported clearing her own land. All the others overcame this constraint by hiring male laborers or asking male relatives for assistance.

She currently has about 500 plantain trees and 200 banana trees that she is solely responsible for. She tells me the other villagers are amazed that she can do all that herself. She plants, sprays, weeds, and “totes” (carries out) the bunches to the road. She only hires a man to clear the “big bush” after she has left the land fallow for a while. She tells me that she “could do that” herself, but she is willing to pay a man to do it (Toco, Afro-Trinidian female farmer).

How: Female substitution. Women’s multiple responsibilities create a time constraint that is evident in their long workdays and the typical female schedule. Because this limits the amount of time available for agricultural activities, some women strategically substitute the labor of other female family members for their own. Often a younger or more senior woman will assume some of the household responsibilities.

Her daughter-in-law is a major contributor to the maintenance of the household, and this allows WA more freedom to work the land. Currently she goes on the land every day for a few hours in the morning, while her daughter-in-law does most of the cooking and cleaning (Cedros, Indo-Trinidadian female farmer).

Knowledge resource. Farmers’ selection of crops and management techniques are highly influenced by their knowledge of various activities. Many farmers actively seek out information on “new and improved” techniques. Having access to this information makes these farmers more willing and able to plant “difficult” crops successfully.

What and how: Traditional. Many farmers rely primarily on what they learned growing up in agriculturally based households and communities. These farmers have
extensive knowledge of specific crops and are experienced with traditional methods of cultivation. Therefore, it is logical for them to cultivate primarily traditional crops, using the techniques they observed firsthand.

WA grows “only” plantain and bananas on two separate plots of land. She chose to grow those crops because that is what she “knows,” so it is “easy” for her. Likewise, her elderly father used to work cocoa on the estate and is one of the few farmers who still keeps his land in cocoa, mostly because “that is what he knows” (Toco, Afro-Trinidadian female farmer).

At times this may stymie the efforts of governments and organizations to introduce new crops or techniques, as farmers are secure in their traditional activities. Several older cocoa farmers said they “do not like the idea” of selling their cocoa wet, plus they have all the necessary infrastructure for drying, such as the cocoa houses and tools.

These traditional technologies typically make use of abundant natural resources and do not demand large investments of limited resources. Traditional methods are especially valuable for limited resource farmers, as they provide practical and feasible cultivation methods.

She points out where the bodhi (long green bean) is germinating and shows me how she constructs trellises from pieces of bamboo. The dried stalks, with branches spreading on each side, make a perfect natural trellis, which require only being stuck in the ground. Bamboo is both a pest and a resource for farmers here…The stalks are used for a variety of purposes, most often as a support for banana trees as they get heavy with fruit and start to lean (Toco, Afro-Trinidadian female farmer).

**How: Saves seeds.** Many farmers have learned how to select and save their own seed. Not only do they save themselves a recurrent expense, but also they have selectively bred for locally adapted cultivars and maintained a living genebank.

She saves a lot of her own seeds. She selects the best fruits of the harvest, and will dry them for next year. Melon, squash, pepper, and pumpkin are all easy to save; other seeds she will buy from the farm shops. She points out the dried spinach seeds and shadon beni seeds still on the stalk in the field (Cedros, Indo-Trinidadian female farmer).
What and how: Network recommendations. An active network of farmers not only provides knowledge on traditional activities but can quickly and effectively disseminate information on new techniques. Many farmers report trying a new crop because it was recommended by a farmer in their network.

He decided to start cultivating pineapple because his father-in-law had a nice crop and encouraged him to try his luck. He got the starter plants from him, and since then has been expanding every year (Cedros, Indo-Trinidadian male farmer).

With the facilitation of a recognized farmer who is tied into outside organizations, a functioning local network can also spread information on new cultivation techniques, market fluctuations, and the onset of disease. Although outside information may enter farmer networks infrequently, information can move with amazing speed and high impact when it does.

The farmers in Sans Souci only switched to the string method55 about a year ago. One of the “big” farmers was in St. Vincent and saw that method being used. When he returned to Trinidad, he actively went about teaching farmers how to properly use the string for support, and it caught on like wildfire. She points about the hills, indicating the absence of bamboo, and says otherwise she would have to travel far to cut and carry bamboo props, or would have to pay somebody. Now she can quickly tie the string and later reuse it. Her work is now easier and quicker, so she can cultivate more area. I remark that the man who introduced the new method must be a hero. She laughs, agreeing. She says that farmers in SS work together quite well (Toco, Afro-Trinidadian female farmer).

What and how: Class recommendations. Where available, many farmers attend courses offered by agricultural organizations (primarily the Extension Division of the Ministry of Agriculture) and use that knowledge, to a greater or lesser degree, in their selection of activities and overall management strategy. At its best, these classes provide

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55 This is an alternative method for supporting banana and plantain trees. Traditionally farmers use bamboo poles to support the weight of the tree as it grows heavy with fruit.
direct access to new knowledge coupled with practical skills that allow farmers to successfully implement the recommended techniques.

She has taken many courses over the years. Her favorite course was on budding and grafting. After finishing that course, she used the skills she learned to start a nursery and sold from a shop in front of her house for 3 years (Cedros, Indo-Trinidadian female farmer).

**Knowledge constraint.** Knowledge constraints occur at points where there are no bridging networks to allow flow of information. Sometimes these gaps cut off an entire community from an external source of information. More frequently however, these gaps occur within the community, allowing flow of information within a specific network, but restricting access to outsiders. When knowledge is constrained, farmers outside the network remain unaware of potentially beneficial techniques.

**How: Experimentation.** Farmers who face a knowledge constraint must learn by trial and error when attempting new ventures. In some cases they are able to access external information and research other sources on their own.

MA decided to start growing tomatoes based on high price. Initially he got information from Caribbean chemical brochures and reading other material. His crop failed, but he kept studying, and the tomatoes are “going good” now. “Part of my study is what time tomatoes have a good price. I only plant for that” (Toco, Afro-Trinidadian male farmer).

For other farmers, literacy or mobility constraints limit their ability to access or benefit from printed material. These farmers “just try” and fail or succeed, often without truly understanding why. Although they may report some level of success, their progress is neither as fast nor as great as it could be.

She has never gone to the Extension office for assistance or taken any courses. She has figured out how to plant by “using her brain.” She says she would ask other farmers for help, but there are hardly any farmers in Granville any more (Cedros, Indo-Trinidadian female farmer).
Some farmers attempt to develop more efficient technologies on their own. However, in trying to “reinvent the wheel” without proper direction, they are limited in their success. Yet their determination to do so highlights the need for more efficient technologies. Such improved systems would benefit many other area farmers.

To lessen the labor involved in banana production, MA tried to develop a pulley system similar to one he had observed in a neighboring village. He hoped “to ease the labor of toting (carrying) and keep from disturbing the soil.” It “did work” to a limited degree but he did not have the “proper tools” for best performance. Also the “soil type and vegetation were different enough” that the technology would require some adapting (Toco, Afro-Trinidadian male farmer).

**How: Low fertility.** Without a scientific understanding of agriculture, many farmers quickly deplete their soil fertility. They have an inherent faith in the land to produce, without a scientific understanding of the need for nutrient renewal. Unlike the highly visible weeds and pests that directly deplete their harvest, soil nutrients act in invisible ways. In consequence, farmers frequently use pesticides or herbicides, but view fertilizer as a profit-making scheme by the farm supply stores, and only apply it as a last resort. A few farmers reported trying fertilizer but saw no immediate increase in crop production and concluded it was a “waste of money.” They are mostly unaware of organic methods of fertilization, that they might supply themselves at a lower cost.

Inspecting the corn that has germinated since her last visit, she pronounces them “too thin.” She says they should still be “fat from the seed,” so perhaps she will have to buy fertilizer for them. She never used to “add” anything to the land, but now there is “all sorts of trouble” (Toco, Afro-Trinidadian female farmer).

Some farmers have occasional exposure to scientific explanations of agricultural systems. However, this is often not adequately explained and thus does not influence the many practical decisions farmers make on a daily basis.

She says that she doesn’t use fertilizers, only some Nutrex, but not all that #--# stuff. If something isn’t growing, she feels it is not on the correct type of land, so she will plant it somewhere else (Toco, Afro-Trinidadian female farmer).
For squatters, who are less tied to a specific parcel of land, the decrease in fertility often is addressed by moving to a new piece of land every few years to maintain a high yield.

**How: Unsafe chemical use.** Although farmers seek inputs from farm shops to cope with the multitude of pests, they often receive insufficient knowledge regarding the safe manner and level of application. As one male farmer told me, “You yourself have to experiment, try mixing different chemicals.” This results in the liberal and unprotected application of pesticides and herbicides. The most frightening manifestation of this is the infamous Trinidadian “cocktail” which follows the logic that if some is good, more is better.

She liberally poured a Malathion mix over various plants that she deemed “sick.” I asked her how she knew what to apply. She looked at me blankly, then, when I clarified, she said, “Oh, well, it replaced (the chemical she used to use).” Although she did not wear any protective gear, she is aware that some of the chemicals are “real poisonous,” recounting stories of workers inhaling the spray and falling, foaming at the mouth. Her son used to plant peppers, which he sprayed heavily. However, the chemicals affected him so much that he had to stop working in the garden. She also got ill and recently had a heart attack. Her doctor has told her not to spray any more… (Toco, Afro-Trinidadian female farmer).

This heavy reliance on chemicals is epidemic among farmers in Trinidad. It occurs among all groups of farmers, apparently regardless of age or educational level, in testimony to the many powerful chemical companies here.

He admits that he is too lax about safety and doesn’t really wear any protective gear. He had previously told me that he sprayed less than most farmers, but today he mentions using Vydatel, one of the most dangerous pesticides currently available in Trinidad and illegal in several other countries (Toco, Afro-Trinidadian male farmer).

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56 This same farmer tried to combat an infestation of thrips and mites by applying a strong mix of nutrex, a common fertilizer. He succeeded in defoliating his plants.
Frequency of agricultural activities by ethnicity and farm gender

While the preceding two sections focused on the rationale behind selection of activities, this section presents statistics on the actual activities that farmers participate in. Activities are analyzed by farm gender and ethnicity to identify differences in agricultural strategies by social group. Activities are then related to selection factors, to demonstrate how the chosen activities are appropriate given the objectives, resources, and constraints of each group.

Crop categories. Surveyed farmers (n = 142) were asked to identify their primary and secondary activities. Due to the tremendous diversity in farmers’ activities, this yielded too many categories to be useful for analysis. Therefore, only activities that were done by 10% or more of farmers, such as cocoa and floriculture, were retained for individual analysis. All other activities were grouped based on 1) growth pattern and 2) input / output factors.

Growth pattern categories follow local terminology, which groups crop based on their spatial and temporal growth habits, namely tree crops, root crops, and vegetable crops, locally known as “short” or “fine” crops. Input / output factors are the inputs necessary for crop growth and the type of output. These factors determine the suitability of a particular crop for a specific group of farmers based on their objectives, resources, and constraints.

The input factors used for grouping crops are:

- Capital requirements: the amount of capital required for purchasing inputs such as seeds or fertilizers;
- Labor requirements: the amount and frequency of labor required;
- Mobility requirements: whether the activity is suitable for household cultivation.

The output factors are:
• Frequency of harvest (and thus frequency of cash-income);
• Type of product: whether a food crop or a cash crop.

The majority of crops were easily classified by growth pattern. The few crops that did not fit in any of these categories were assigned to the group that had the most similar input / output factors. For instance, dasheen bush\(^{57}\) and vine crops such as babadeen and christophene were included in short crops because they require frequent cultivation and harvest. Pigeon pea is also classified as a short crop since it is mostly grown as an annual, for one short harvest period around Christmas. Pineapple is counted as a tree crop because it is a relatively long-term crop with only one or two intense harvest periods a year.

Using these definitions, the crop categories are:

• Bananas and plantains
  a. Growth pattern: Annual crop; regrows from suckers.
  b. Inputs: Best growth with medium to high capital inputs. High labor requirements. Usually separate from home.
  c. Outputs: Harvest once a year but can be staggered for continual cash-income. Cash crop, high –average value by variety. Use limited amount as food.

• Cocoa
  d. Growth pattern: Perennial trees. Marketable portion is fruits.
  e. Inputs: High labor during harvest season; otherwise survives with limited cultivation. Usually separate from home.
  f. Outputs: Harvest for three months. Cash only.

• Floriculture: potted plants and cut flowers

\(^{57}\) The Central Statistical Office also counts dasheen bush as a green vegetable in its Food Crop Bulletin (CSO, 2002).
g. Growth pattern: Flowering parts of plants, both annuals and perennials.

h. Inputs: Frequent watering, if available. Otherwise low labor for potted plants, more for cut flowers. Very suitable for home production.

i. Outputs: Depends on nature of sales, from daily to occasional. Cash crop.

- Livestock: cattle, sheep, goats, pigs, poultry

j. Growth pattern: Mobile.

k. Inputs: Fairly frequent tending necessary. Smaller livestock and limited numbers of large livestock can be reared at home, but larger stock require ability to travel for forage.

l. Outputs: Products (eggs, milk) daily, meat as desired. Provides daily food as well as occasionally large sums of cash.

- Root crops: primarily cassava, but also bitter cassava, tania, and mixed provisions.

m. Growth pattern: Perennial crops that bear the edible portion below ground. Long growing season (6 months or more).

n. Inputs: Minimal cultivation required, mainly planting and harvesting. A few can be grown around the home, but requires space so typically larger gardens are at some distance.

o. Outputs: Harvest once a year, but stores well in soil, so harvest can be done sporadically. Edible and cash crop.

- Short crops: pak choy, lettuce, tomatoes, pumpkin, salad bean, okra, melon, hot pepper, pimento, scallion, thyme, pigeon peas, sorrel, dasheen bush, passion fruit, christophene, babadeen, and mixed home garden

p. Growth pattern: Annual vegetable crops, also perennial crops that are planted and harvested as annuals.

q. Inputs: Requires frequent cultivation throughout the growing season. Not heavy but time intensive. Suitable for home cultivation.

r. Outputs: Produces an edible crop that has food and cash value. Can be managed to produce frequent harvests and thus provide cash-income year-round, with the limitation that many farmers are dependent on rainfall and thus can grow short crops only in the rainy season.

- Tree crops: mango, citrus, coconut, nutmeg, breadfruit, pineapple and assorted fruit trees, excluding cocoa, banana and plantain.
s. Growth pattern: The harvestable portion is grown on a tree

t. Inputs: Low labor requirements during most of the year. Ability to cultivate at home depends on the location and extent of existing trees.

u. Outputs: Produce an edible crop that has a food and cash value. Produces one or two concentrated harvests per year, therefore cash-income is seasonal.

Primary and secondary crops were analyzed together, to determine the percentage of farmers in each region that cultivate a particular category of crop\(^58\). These were then analyzed by farm gender. The findings are presented below, in table 6-3 (Toco) and table 6-4 (Cedros). The tables are organized to highlight the difference in agricultural activities by farm gender. Thus, for each farm gender group, the crops are listed by frequency of cultivation by that group.

**Farm gender analysis.** At first glance, the two regions look deceptively similar. Comparing the regional averages (the final row in each table), Toco farmers and Cedros farmers appear to rely on much the same crops, with the main difference being a wider diversity of activities in Cedros. In both regions, bananas and plantain and short crops are the most frequently cultivated crops, while cocoa, tree crops, and root crops are cultivated by 20–30\% of farmers. The main observable differences are a higher cultivation of bananas and plantain in Toco\(^59\), and the additional minor cultivation of livestock and floriculture in Cedros.

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\(^{58}\) Most farmers also grew small amounts of many other crops for household use. These are not included in this statistic, as this number is intended to reflect only the main agricultural activities of area farmers.

\(^{59}\) This number is heavily influenced by the village of Sans Souci, in which bananas and plantain are almost the only crops cultivated. The other villages in the Toco region have more even crop distribution.
Table 6-3. Crops cultivated by Afro-Trinidadians, analyzed by farm gender

<table>
<thead>
<tr>
<th>Farm gender</th>
<th>Frequency of cultivation (percentage of each group that cultivates that crop)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>Female farmer</td>
<td>Cocoa (50)</td>
</tr>
<tr>
<td>Male farmer</td>
<td>B &amp; P(^a) (75)</td>
</tr>
<tr>
<td>Farm couple</td>
<td>B &amp; P (75)</td>
</tr>
<tr>
<td>Toco farmers</td>
<td>B &amp; P (70)</td>
</tr>
</tbody>
</table>

\(^a\) B & P are bananas and plantains.

Table 6-4. Crops cultivated by Indo-Trinidadians, analyzed by farm gender

<table>
<thead>
<tr>
<th>Farm gender</th>
<th>Frequency of cultivation (percentage of each group that cultivates that crop)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>Female farmer</td>
<td>Short crops (45)</td>
</tr>
<tr>
<td>Male farmer</td>
<td>B &amp; P (50)</td>
</tr>
<tr>
<td>Farm couple</td>
<td>Short crops (50)</td>
</tr>
<tr>
<td>Cedros farmers</td>
<td>B &amp; P (40)</td>
</tr>
</tbody>
</table>
However, the “average” picture obscures the distinctions in farming systems by farm gender, illustrating how female farming systems are often overlooked. Only by taking farm gender into consideration does the dissimilarity in farming systems become apparent. Female farmers participate in a substantially different set of activities than male farmers or farm couples. This divergence is further compounded by cultural differences, evident in the dissimilar agricultural strategies of female farmers in Toco and Cedros. This cultural distinction is not observed between male farmers or farm couples in the two regions, as men lead more independent lives in the public sphere and can somewhat escape cultural definitions. In contrast, women’s lives are still highly influenced by cultural norms and their attendant resources and constraints.

Female farmers. Female farmers rely on a different assortment of agricultural activities than male farmers and farm couples. They have the most distinctive farming systems, because women tend to be more influenced than men by household responsibilities and cultural norms. While women in farm couples may have some access to gender-linked agricultural resources through their male partner, female farmers are limited to their own resources and can only cultivate crops that are feasible given those constraints. Their selection of crops thus reflects these constraints as well as gender-based objectives.

Almost half of female farmers (45%) in both regions grow short crops as a way to meet objectives for “household food” and “household cash-income.” Short crops are feasible, even given constraints on “female mobility,” as they are suitable for “home production.” These may be part of a “diverse food garden” or may be “eat and sell crops” that ensure food security. They are often “cash crops” specifically grown as a “retail
market crop” and sold as part of a “crop package.” Because female farmers often have limited access to capital, they may select “easy crops” that flourish with limited inputs, or else cultivate a more demanding but preferred crop with “low inputs.” Many women “save seeds” to decrease their input costs. Given the multiple demands on their time, women also may tend to “plant together” different short crops or simply do “less cultivation,” accepting a certain amount of loss to weeds.

Female farmers are slightly less involved in banana and plantain cultivation than other farmers in their ethnic group. However, a third or more of female farmers in both regions do cultivate bananas and plantains, a significant finding given the common perception that this is a “man’s crop” and too heavy for women to cultivate alone. The main difference is in female farmers’ management strategy. They typically depend on “male land preparation” and may have to do “less cultivation” then optimal in order to meet the multiple demands of their “female days.” If weeds flourish as a result, they may attempt to combat this with “unsafe chemical use” because of inadequate safety information due to “lack of organizational outreach.” They are also likely to select a “variety” based on their physical abilities instead of profitability, or choose to “squat by a road” to decrease the labor burden. They usually accept the lower prices offered by “middlemen” since few have the necessary transportation to bring the crop to market.

Female farmers’ agricultural strategies are also highly affected by cultural resources and constraints, leading Indo-Trinidadian and Afro-Trinidadian women to engage in substantially different activities. Afro-Trinidadian female farmers have the highest (50%) involvement of any group in cocoa cultivation, while Indo-Trinidadian female farmers have the lowest involvement (15%). This reflects the unique cultural
constraints that each group faces, as well as the different “gender stereotypes” of what women can and should do. Afro-Trinidadian female farmers choose to “keep cocoa” because it is an “easy crop” with minimal input requirements. These women are predominantly single (75%), either unmarried (50%) or widows (25%). Although they have relatively high levels of “autonomy” they are limited to their own resources and thus tend to live at the survival level. Because cocoa is an “existing tree crop” on many abandoned estates, it is easy for them to access, even with “no legal tenure.” However, cocoa is one of the least profitable crops, and the decision to cultivate cocoa marks these female farmers as a low resource group. Cocoa is truly a “survival crop” cultivated as a last resort, as many of these women face “household instability” and have to function as a “female head of household.” In contrast, most Indo-Trinidadian female farmers are married and have more “marital security” and access to “spouse’s cash-income,” making reliance on cocoa less necessary. Perhaps more importantly, they face cultural limitations on “female mobility” that make it undesirable for them to work on remote cocoa estates alone. Therefore, only those women with the greatest need or with cocoa surrounding their house tend to cultivate this crop (15%).

More Afro-Trinidadian female farmers cultivate tree crops (40%) than any other farmers (15–25%), again reflecting their low resource level. They harvest “existing tree crops” even if they provide little cash-income, because they are “low labor crops” that will produce a harvest even with limited inputs. Although many farmers have mature trees on their land, the majority of farmers have abandoned these crops, as the price is too low to provide adequate reward for the labor of harvesting. However, for female farmers with a limited cash-income, this is an opportunity, as these abandoned trees are thus
available for them to harvest. They can manage the produce, as most are good “storage crops” which do not require immediate transportation to market. Other tree crops such as citrus and nutmeg are “middlemen crops,” which generate a lower profit but guarantee sales. Among Afro-Trinidadians, female farmers have the highest involvement in these “survival” activities that require fewer inputs but also generate lower profits, perpetuating their marginal status. The majority of these women face too many constraints to select more profitable activities, therefore they must engage in activities that others do not consider worthwhile.

For some Indo-Trinidadian female farmers, constraints on “female mobility” are the major determinants of their agricultural strategy, as evident by their unique involvement in floriculture. In this group, 20% of women are engaged in floriculture and produce either potted plants or cut flowers. Often this starts as a hobby, part of being a “good wife” and keeping an attractive home, while providing women a satisfying “female home activity.” With increasing time and resources, their operations grow to a small commercial level, providing a modest “female cash-income.” Most women “sell from home,” although a few women with more resources and mobility do the “retail herself.” No other farmers reported involvement in this activity, illustrating the unique and influential social constraints that these women face.

Indo-Trinidadian female farmers also cultivate livestock (15%), particularly “small livestock,” as a part of “home production.” Because rearing and processing can be done around the house, it is not constrained by limited “female mobility” and provides an acceptable “female home activity.” This is a “traditional activity” for Indo-Trinidadians, and is practiced by male farmers and farm couples as well. For women, it serves multiple
objectives, being a way to provide “household food” and “household cash-income” which can be used for “care of dependents” including “education of children.” Small livestock are a viable “cash crop” for these women as there is a continual high demand for poultry as a “preferred food.” Women are able to make substantial “sales at home” which helps to ensure that they retain control of a separate “female cash-income.”

**Male farmers.** Male farmers’ agricultural strategies do not show the same ethnic differentiation as female farmers, reflecting men’s greater independence of culturally prescribed boundaries. Men in both regions are most involved in the cultivation of bananas and plantains. Not constrained by “mobility” men tend to select this as a “high value activity,” basically a “steady crop” with a strong “seasonal market.” This is a “traditional activity” for the farmers in Sans Souci, who almost exclusively cultivate these crops. They have access to both “traditional” and “network” knowledge regarding cultivation techniques. Quite a few farmers in this village have managed to earn some capital from this activity, and reinvest it by using “hired labor” and “high inputs” thus maximizing their yield. Farmers who succeed will continue to “hire labor” allowing ever more “extensive cultivation.” This crop is also suited to the primary constraint of men in this region: land. Although few farmers in this area have secure land tenure, they are surrounded by vast tracts of “state forest” on which most men grow this crop illegally. To avoid detection, they frequently change plots, which ensures a continual supply of nutrients and prevents crops from growing under “low fertility” conditions. Although smaller farmers are forced to sell to “middlemen,” many mid-size farmers have access to private transportation and will bring their crops to market. Others use this resource to
capture some of their neighbor’s profit and will “buy and sell” local crops in the retail market.

All other crops are cultivated equally by male farmers. Interestingly, although short crops are considered a high value crop, only 25% of male farmers in both regions cultivate short crops versus 50% of other farmers, perhaps because they perceive bananas and plantain as equally profitable and less demanding of time and information. Nor are male farmers limited to short crops by constraints of mobility and strength. Male farmers who do cultivate short crops tend to have a different management strategy than other farmers. They are often younger farmers who have access to market knowledge through their connections with “agriculture organizations.” These farmers strategically select “export crops” or “process crops” for specific, pre-arranged markets and practice “extensive cultivation” of individual crops using “high inputs.”

Farm couples. In both regions, farm couples exhibit the most balanced participation in agricultural activities, relying on a broader spectrum of activities. Farm couples try to achieve economic security through a diversity of activities and cash-income sources. By having access to both male and female resources, farm couples are able to overcome many gender specific constraints. Women in farm couples have increased mobility, as they are able to work in distant gardens in company with their male partner. As a consequence, these households are able to cultivate the same crops as male farmers, while at the same time having a higher involvement in short crops (50%), similar to that of female farmers (45%).

The ability of farm couples to cultivate short crops is enabled by their access to the added resources of the “couple’s labor” which allows them to cultivate crops that demand
more frequent attention. In addition, many Indo-Trinidadian farm couples are retired, which further increases their ability to manage this more “time intensive activity.” The frequent cultivation of short crops may specifically reflect female participation in these farming systems, as women often plant short crops in a “garden near spouse,” while her partner plants “heavier” crops such as cocoa or plantains.

The main ethnic difference in cultivation strategies is the higher cultivation of root crops, primarily cassava, by Indo-Trinidadian farm couples (30%) as compared to Afro-Trinidadian farm couples (5%). This probably reflects the age difference between the two groups and their associated labor resources. Indo-Trinidadian farm couples are by far the oldest group of farmers, and probably select root crops because they are a “low labor activity.” Although cassava does not have the highest market value, it is attractive to these farmers as an “eat and sell crop,” as many of these farmers have a limited access to capital and are concerned to directly ensure their food security as well as provide some form of “senior cash-income.” Mature cassava can be left in the ground for a long time, which essentially makes this a “storage crop” which can be transformed to food or cash as needed.

Despite being a traditional activity, farm couples are less involved than other Indo-Trinidadians in the rearing of livestock, probably due to constraints of “age and health.” Many of these farmers previously kept cattle and goats, but got rid of them as the labor requirements became too demanding with age, switching to less physically demanding activities that would make their “future easier.”

**Implications.** Both women and men are involved in the whole range of agricultural activities, including those typically considered to be uniquely “male” such as bananas and
plantain and livestock. However, male farmers, female farmers and farm couples are characterized by distinct resources and constraints. As a result, they tend to select a different mix of activities and/or use different management strategies in doing the same activity, often resulting in differing levels of productivity.

If Extension only focuses on the overall trends in these regions, they may dismiss crops that are crucial for specific target groups. In Toco, cocoa and tree crops are cultivated by a third or less of farmers overall, yet for female farmers these are vitally important survival crops. Considered altogether, floriculture appears relatively unimportant to farmers in Cedros, yet for 20% of female farmers this is one of the few agricultural activities available to them. Farmers can only benefit from information that relevant to their farming systems. In a similar vein, if policy-makers and change agents can identify and address the constraints (knowledge, land, capital, labor) that most limit specific target groups, farmers have a greater chance of meeting their objectives.

**Agricultural cash-income.**

A farmer’s livelihood strategy includes not only their selection of specific activities but also their level of dependence on agriculture, as indicated by agriculture’s share of household cash-income. Household cash-income sources are determined by available economic alternatives, the presence or absence of a contributing spouse or partner, and cultural norms that determine appropriate gender activities. Thus agriculture’s relative contribution to household cash-income reflects both choice and circumstance, as farmers attempt to meet their objectives, in light of their resources and constraints.

**Cash-income categories.** Surveyed farmers (n=142) were asked to estimate the percentage of their household cash-income that was derived from agriculture. Only 5 farmers, 4% of the total, were producing solely for household consumption and reported
no cash-income. The remaining 137 farmers were grouped into the following four cash-income categories:

- Minor agriculture: 1–25% of household cash-income from agriculture
- Low mixed income: 26–50% of household cash-income from agriculture
- High mixed income: 51–75% of household cash-income from agriculture
- Agriculturally dependent: 76–100% of household cash-income from agriculture

Overall, the vast majority of households (80%) fall into the two extreme categories (Table 6-5), with very few households reporting mixed cash-incomes. “Minor agriculture households” (40%) rely primarily on off-farm cash-income and only supplement household income through agricultural activities. At the other extreme, an equal percentage (40%) are “agriculturally dependent households” who rely on agriculture for the majority of household cash-income.
Table 6-5. Household cash-income derived from agriculture, analyzed by region and farm gender.

<table>
<thead>
<tr>
<th>Region</th>
<th>Farmer group</th>
<th>Percentage of cash-income derived from agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm gender</td>
<td>1–25</td>
</tr>
<tr>
<td>Toco</td>
<td>Female farmer</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Male Farmer</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Farm couple</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Toco farmers</td>
<td>25</td>
</tr>
<tr>
<td>Cedros</td>
<td>Female farmer</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Male Farmer</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Farm couple</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Cedros farmers</td>
<td>55</td>
</tr>
<tr>
<td>Combined</td>
<td>Female farmer</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Male Farmer</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Farm couple</td>
<td>40</td>
</tr>
<tr>
<td>All farmers</td>
<td></td>
<td>40</td>
</tr>
</tbody>
</table>

Income is expressed as a percentage of each group.

**Regional analysis.** There is a distinct difference in the relative importance of agriculture as a livelihood source in Toco and Cedros, reflecting regional differences in economic alternatives. Toco is relatively isolated, with few economic alternatives, while Cedros is much closer to a market town and has more off-farm job opportunities, particularly in the oil and gas industry. The majority (55%) of Toco farmers are from

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60 Region was used in place of ethnicity as the unit of analysis, as it is believed that the difference in income sources is due to regional differences in the availability of alternative employment as opposed to ethnic norms. Numerically, ethnicity and region are 95% equivalent and thus interchangeable.
agriculturally dependent households, versus only 20% of Cedros farmers. Most (55%) Cedros farmers rely on off-farm cash-income and are from minor agriculture households, as opposed to only 25% of Toco farmers (Figure 6-9).

![Figure 6-9. Household cash-income derived from agriculture, analyzed by region][1]

**Farm gender analysis.** While the observed regional differences are evident among male farmers and farm couples, they are not equally apparent among female farmers, highlighting the different constraints and opportunities that men and women face. In fact, female farmers have very similar cash-income profiles, as visible in Figure 6-10. In both Toco and Cedros, half of female farmers come from minor agriculture households and approximately one third from agriculturally dependent households. Although this arises for different reasons in each region, as discussed below, it is interesting to note this similarity in agricultural participation, regardless of economic alternatives.
Female farmers. Like other farmers, the majority of female farmers belong to either minor agriculture (50%) or agriculturally reliant (35%) households. However, in contrast to other farmers, female farmers show little or no regional difference in agricultural cash-income, as women are less affected than men by external economic opportunities. For female farmers, the primary determinants of household cash-income are internal social factors, specifically marital status and cultural norms.

Despite Cedros’s greater economic opportunities, few Indo-Trinidadians women are employed off-farm, due to cultural norms and workplace biases. Therefore agriculture’s share of household cash-income is determined primarily by the presence or absence of a contributing partner. The 50% of Indo-Trinidadian female farmers from minor agriculture households are mostly married women, with spouses working off-farm. Therefore, their
contribution to the household cash-income represents only a quarter of total cash-income. The 30% of female farmers who derive the majority of their livelihood from agriculture are primarily widows, who rely solely on their own cash-income.

For Afro-Trinidadian women, agriculture’s share of household cash-income is determined primarily by marital status as well as female off-farm employment, as they are not culturally constrained from working outside the house\(^{61}\). In contrast to their Indo-Trinidadian counterparts, Afro-Trinidadian female farmers are predominantly (75%) single (unmarried or widowed) and do not have the support of a male partner. These single women primarily come from agriculturally dependent households. Female farmers from minor agriculture households either work off-farm or are in a conjugal relationship (25%) and receive financial support from their male partner. The stability of their partner’s support is directly reflected in their reliance on agricultural cash-income. Married women contribute only a quarter or less to the household cash-income from agriculture, while common law women rely on agriculture for half of their household cash-income. Common law women are also more likely to work off-farm as a security strategy.

Male farmers. The regional difference in male farmers’ agricultural cash-income is primarily related to economic opportunities, although cultural norms and marital status do affect household cash-income through their effect on the spouse’s income. In both areas, the majority of men are in a conjugal relationship. However, the wives of married Indo-Trinidadian men are less likely to work outside the home, therefore the men provide the sole source of cash-income. Because Cedros has economic alternatives, the majority

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\(^{61}\) In fact some regional employers (schools, the tourism industry) preferentially hire women.
(65%) of Indo-Trinidadian male farmers depends on their off-farm job to provide the majority of household cash-income and are only minor agriculture households. The 15% of male farmers who are agriculturally dependent are mostly young single farmers who can survive on a lower cash-income.

In sharp contrast, 55% of Afro-Trinidadian male farmers derive the majority of household cash-income from the garden, reflecting the limited off-farm opportunities in Toco. These agriculturally dependent households are composed of both single men and married men, primarily churchgoers, whose wives do not work off-farm. Male farmers from minor agriculture households are either employed part-time off-farm or have wives / partners who work off-farm and rely primarily on this non-farm cash-income. What little work is available is primarily government work, which in itself is part-time, and not highly lucrative.

Farm couples. As with male farmers, farm couples in Toco are more heavily dependent on agriculture for their cash-income than farm couples from Cedros. This is attributable to both economic opportunities as well as the average age of these couples.

Among Indo-Trinidadians, the majority of farm couples are from minor agriculture households and rely primarily on off-farm cash-income: either off-farm work, if still employed, or retirement income. These couples are in general older farmers, many in their senior years, who receive cash-income from their pension checks and /or a retirement fund. Only a quarter of Indo-Trinidadian farm couples derive the majority of their cash-income from agriculture. In these cases both partners work full-time in the garden, often to provide adequate cash-income for their senior years.
Afro-Trinidadian farm couples, in contrast, are a much younger group and rely more heavily on agriculture, given few economic alternatives. A full 60% of farmers derive the majority of their livelihood from agriculture. This is particularly true of common law couples that are almost entirely dependent on agriculture. Married couples are more likely to supplement farm cash-income with off-farm employment of one or both partners, accounting for the 20% of farm couples from minor agriculture households.

**Implications.** Farmers’ decisions regarding their level of agricultural involvement is a product of their objectives, resources and constraints. As actors in the public sphere, men are more affected by external opportunities such as the possibilities for off-farm employment. Women are more affected by cultural constraints, as well as their marital relations and security.

If the agricultural support system is to maximize its impact, it makes sense to focus on those farmers who are most dependent on agriculture for their household cash-income. Given few economic alternatives, most farmers in Toco are still heavily dependent on agriculture. Therefore, any intervention that can improve agricultural yields has the possibility to greatly improve the livelihoods of farmers in this region. Farmers in Cedros have, to a large degree, switched to non-farm activities, reflecting their assessment of agriculture as a less profitable activity. However, improvements in production systems and increased economic returns might prompt a return to more vibrant agricultural communities.

Although female farmers appear to have slightly lower reliance than other farmer groups on agriculture, there are still a third who are almost completely dependent on
agriculture. The most vulnerable of these are widows and single Afro-Trinidadian women who are highly reliant on agriculture and have no support from a partner, on-farm or off-farm. Common law Afro-Trinidadian couples likewise report a particularly high level of dependence on agriculture, noticeably greater than married couples.

**Summary**

This chapter described the wide variety of farmers’ objectives, resources and constraints that ultimately determine their selection of agricultural activities.

Farmers’ specific objectives for being involved in agriculture can be grouped into the following categories: ethnicity, gender, religion, socioeconomic, life-stage, and life-style. Although most Trinidadians associate agriculture with Indo-Trinidadians, farmers of both ethnic groups expressed a cultural connection to agriculture. Women often have distinct reasons for participating in agriculture related to their responsibility for the household and dependents. For Indo-Trinidadian women, agriculture also provides a way to overcome cultural constraints on mobility and cash-income. Members of all religions expressed a sense that they were “doing God’s work.” Depending on their economic resource level, farmers pursue agriculture in such a way as to meet their objectives, be it survival, security, or profit maximization. Farmers’ objectives change with their life-stage, however it is often a way to provide increased security or compensate for otherwise low resource levels. Agriculture satisfies many lifestyle objectives of farmers, however the most frequently mentioned was simply a love of agriculture as a way of life.

Farmers have access to a variety of resources, depending on their individual social identity. These can be classed into the following groups: ethnicity, capital, land, labor, knowledge, and attitude. While Indo-Trinidadians draw a lot of support from strong
family and marital ties, Afro-Trinidadians tend to be more individualistic and rely on maternal ties for support. Although capital is limiting for most farmers in these regions, access to off-farm cash-income provides an important resource which may enable the purchase of two other key resources: personal transportation and hired labor. Many Indo-Trinidadians have access to private land, while Afro-Trinidadians typically cultivate either leased land or squat. As the fallback resource, labor is very important, and farmers rely on a variety of social networks to increase their labor pool. Likewise, access to knowledge is highly related to inclusion in social networks. The Extension Division of the Ministry of Agriculture is the greatest organizational source of agricultural knowledge, although it has largely failed to reach Toco farmers due to the lack of any district officers in this region. Farmers’ attitudes are a potential resource, that, if tapped, could facilitate the development of a vibrant agricultural sector and stronger linkages between farmers and the agricultural support system.

The constraints that limit farmers’ productivity can be grouped into the following categories: ethnicity, gender, land, labor, and knowledge. Ethnic norms place different limitations on women; while Afro-Trinidadian women must contend with household instability, Indo-Trinidadian women may be confined within the household. In general, women face additional constraints, such as less social visibility and responsibility for dependents and reproduction activities. Most farmers face capital constraints that limit their agricultural inputs and thus their productivity. Lack of transportation is one of the most limiting capital constraints. Secure legal access to land is also a constraint for many farmers, especially Afro-Trinidadians; although women may have access to land, very few hold titles. Labor constraints place the ultimate limits on productivity; while many
farmers are limited to manual labor, women and sole farmers are additionally constrained. Farmers who are not tied in to social networks or organizational outreach have limited access to potentially beneficial knowledge.

Farmers make sophisticated decisions as to the type and level of agricultural activity in order to meet their objectives, given their resources and constraints. The most influential objectives are related to the culture of agriculture, household food, household cash-income, survival, security, maximum profit, and senior cash-income. The most influential resources and constraints are mobility, capital, transportation, land, labor, and knowledge. Each of these, in its abundance or its scarcity, affects the decision as to type of activity (what) and how to manage it (how).

Because different social groups have distinct objectives, resources, and constraints, they tend to be characterized by distinct activities. This is especially true for female farmers because their lives tend to be more defined by socio-cultural norms and household responsibilities. Thus, while male farmers and farm couples in both Toco and Cedros rely primarily on bananas and plantains, female farmers in the two regions are distinct from both men and from each other. Afro-Trinidadian female farmers tend to have the least access to resources and thus select crops that are “easy,” even if they are less profitable, such as cocoa and tree crops. Indo-Trinidadian female farmers select crops that accommodate their mobility constraints, such as floriculture and the rearing of livestock around the home.

Dependence on agriculture is markedly different in the two communities, due to regional differences in economic alternatives. Most farmers fall into the two extremes: the majority of Toco farmers are still highly dependent on agriculture, deriving more than
75% of their cash-income from agriculture, while the most Cedros farmers only supplement their off-farm cash-income with agriculture, receiving less than 25% from agriculture. Female farmers in the two regions are less distinct; in both cases about a third rely on agriculture for the majority of their livelihood.

The next chapter describes the fourteen distinct farmer groups (social recommendation domains) based on farm gender, ethnicity, and marital status.
CHAPTER 7
IDENTIFICATION OF SOCIAL RECOMMENDATION DOMAINS

Introduction

This chapter discusses the farmer groups, or social recommendation domains (SRDs) that were identified during the analysis. The findings are presented following the ORCA framework described in Chapter 4.

Step 4 explains the process of identifying and validating the most influential social factors that delineate the SRDs. Step 5 illustrates the correlation between SRDs and life stages, by modeling the passage of farmers through SRDs during their lifetime. Step 6 provides a comprehensive overview of each SRD, including their social factors, their characteristic ORCA, and their current level of agricultural assistance. This is then discussed in a brief summary, which includes implications for the agricultural support system. Priority SRDs are identified in Step 7 based on household vulnerability, dependence on agriculture, and current access to agricultural services.

Different sections of this material will have specific utility for different audiences. Policy makers may wish to directly refer to Step 7, to identify priority groups. Practitioners can then locate detailed information on their target groups (Step 6) to help them develop appropriate programs. An overview of Step 5 will help them anticipate the movement of farmers into and out of SRDs and be prepared with appropriate assistance. Finally, for practitioners who wish to develop a similar typology in a different locale, Step 4 provides insight into the development of valid categories.
Step 4: Validation and Modification of Social Recommendation Domains

After thorough investigation of farmers’ social factors (Step 2 in Chapter 5), and comprehensive analysis of objectives, resources, and constraints (Step 3 in Chapter 6), I was better able to understand the “natural groupings” that I had initially proposed as social recommendation domains (Step 1 in Chapter 5). My analysis enabled me to recognize the underlying social factors that were responsible for the observed differences in agricultural strategies. The main differences were linked to three key social factors (Figure 7-1):

- Farm gender
- Marital status
- Ethnicity

Taken in combination, these variables created distinct social profiles with characteristic objectives, resources, and constraints, leading each group of farmers to select distinctive agricultural strategies. These three factors became the basis of my social recommendation domains.

The process of identifying and validating these as the most influential factors among all the possible social variables was a multi-step process. Initial observation helped me recognize social factors that tended to distinguish farmer groups and influence daily life. I explored these hunches through a multi-part analysis of the 20 primary contact farmers with whom I conducted nine months of qualitative research. Final verification was obtained through analysis of survey data of 142 farmers.
Figure 7-1. Factors determining the social recommendation domains
Initial Observations of Key Factors

Early observations lead me to recognize differences in farming systems related to farm gender, marital status, and ethnicity. Each of these is discussed in detail below.

Farm gender

Initially I had focused on gender differences, especially as defined by ethnicity. However, gender alone did not adequately capture the observed differences in agricultural systems. In addition to gender, there was a notable distinction between households that had one farmer versus households with two farmers. Farm couples tended to have greater access to agricultural resources, especially external agricultural resources, than individual farmers. Farm couples also displayed greater economic security, due to income diversification both on and off-farm. Yet individual farmers could not be combined in one category, as male farmers and female farmers also exhibited substantial differences. Therefore, I created the farm gender category to capture this combined effect of gender and household participation on the farming systems.

Marital status

In developing the farm gender classification, I became aware of the interplay of these categories with marital status. Having a partner, even a partner who worked solely in the household or off-farm, changed the household’s resource profile and agricultural strategy. The addition of marital status as a key category also enabled me to capture the important influence of life stage. Being single, married, widowed, or in a common law relationship, was, to some degree, part of the typical life stage in each community (Life stage is discussed in greater detail in the Step 5, Figures 7-2 to 7-5).
Ethnicity

The pervasive influence of ethnicity became evident after my first visit to each community. There were many highly visible distinctions between the two cultures, including their influence on gender roles and expectations. Differences in social organization affected individual resources and constraints. For instance, in Indo-Trinidadian society, the family was a key resource but was also the arena that defined, and sometimes limited, women’s roles and resources. In contrast, Afro-Trinidadian women were less bound by, but also less secure in, their more dynamic family structures.

Analysis of Primary Contact Farmers

During the nine months of qualitative research, I worked intensively with a small but diverse group of farmers. Through this extended interaction, I was able to collect in-depth data on farmers’ objectives, resources, constraints and their relation to activities. Considered together with social variables, these insights enabled me to systematically categorize the observed diversity in farming systems through modified SRDs.

Social analysis

The first step was to identify which social groups were actively involved in agriculture. In other words, who was farming? I began by analyzing the 20 primary contact farmers with whom I had conducted nine months of qualitative research. I developed a spreadsheet listing each participant and a wide range of social variables, including farm gender, ethnicity, religion, age, marital status, socioeconomic objective, education, household size, and land access. I then sorted the spreadsheet by different variables, to look for emerging trends in farmer groups. Analysis revealed associations between a range of variables, indicating the presence of several distinct groups. For
instance, Indo-Trinidadian farmers were on average older than Afro-Trinidadians. Age appeared related to another trend by ethnicity, the lower educational level of Indo-Trinidadians. An important observation was the higher frequency of marriage among Indo-Trinidadians, and, within this, distinct subgroups by farm gender; such as older farm couples and younger female farmers. These analyses confirmed the three-pronged influence of farm gender, marital status and ethnicity on a farmer’s ability and desire to be involved in agriculture

**Systems diagrams**

I then sought to understand the relationship between social factors and livelihood activities. In other words, what are certain groups of farmers doing? To do this, I created a “systems diagram” (McDowell and Hildebrand, 1986; Spring, Sullivan, Litow, and Barham, 2000) for each household that included household composition, agricultural activities, agricultural markets, off-farm cash-income sources, and organizational affiliations. Resource flows (labor, capital) between components of the system were represented by arrows, and were disaggregated by gender. By comparing households that were the similar in several aspects, I was able to vividly see the influence of dissimilar factors. For instance, comparing two households that were similar in farm gender, household size, organizational affiliations, and agricultural activity (Appendix D) highlighted the culturally based differences in gender activities. Although both women worked part-time in the garden, only the Afro-Trinidadian woman worked off-farm, despite the greater economic alternatives in Cedros. The Afro-Trinidadian women also participated equally in all aspects of the garden, whereas the Indo-Trinidadian woman participated only in select activities, such as short crops and poultry. In a similar manner,
comparing these farm couples to female farmers and male farmers visually illustrated the
impact of farm gender on agricultural and livelihood strategies.

**ORCA profile**

Having begun to link social factors with agricultural activities, I sought to discover the factors that led to this association. Towards this end, I examined in detail the objectives, resources, constraints, and activities of each of the primary contact farmers. From interviews and observation, I compiled an exhaustive ORCA profile of each farmer (see sample in Appendix E). Using the social factors that I had identified, I tentatively assigned each farmer to a social recommendation domain. I then looked for similarities in ORCAs within the proposed domains. This helped me to verify or modify the categories that I had created.

**Analysis of Survey Sample**

Analysis of my survey data (n = 142) allowed me to validate the significance of the three key social factors and further define my proposed SRDs.

To verify the interaction of the three main factors, I analyzed the marital status of each ethnic group by their farm gender category. The results clearly show a distinction in the marital status of each farm gender category, by ethnic group, as previously discussed (Figures 5-2 and 5-3). Afro-Trinidadian female farmers are much more likely to be single than Indo-Trinidadian female farmers, the majority of whom are married. This shows the effect of cultural norms, because marriage is much more important and prevalent in Indo-Trinidadian society than among Afro-Trinidadians. Because marital status has such a large impact on household resources, this difference by ethnicity and farm gender leads to distinctions in ORCA.
To validate the proposed social recommendation domains, I made a detailed spreadsheet for each domain. I listed the social factors as well as the agricultural activities of every survey participant who belonged to a specific domain. I also analyzed access to and satisfaction with extension providers. This is presented in summary form in the profile of each SRD in Step 6 of this chapter.

By analyzing each domain separately, it became evident that there was great similarity within the groups in many social and agricultural factors and important distinctions between groups. Social similarities included age, household size, and number of dependents, supporting the idea of SRDs as life stages. To validate this, I developed household life cycles to model the typical and / or possible passages of distinct households through SRDs. (Step 5, Figures 7-2 to 7-5). Farmers within SRDs also exhibited similarities in agricultural activities and cash-income. In a few cases there were subgroups within a SRD, most often related to differences in economic objective level, creating important differences in certain parts of their ORCA. These were noted and described in the definition of each SRD.

These analyses validated the proposed SRDs as socially and agriculturally distinct groups and / or life stages, characterized by predictable objectives, resources, and constraints.

**Step 5: Household Life Cycles in Agriculture**

The identification of marital status as a defining factor of social recommendation domains indicated a relationship between SRDs and household life cycles, as marriage is typically linked to specific stages of life. This was supported by further analysis, which showed a correlation between SRDs and several other indicators of life stage such as age, household size, and number of dependents.
To illustrate this, four models were created, one for each combination of gender and ethnicity (Afro-Trinidadian women, Indo-Trinidadian women, Afro-Trinidadian men, Indo-Trinidadian men), based on analysis of survey data. The models portray the possible movement of an individual through 1) marital states and 2) farm gender configurations, as they progress from youth to seniority. It is important to remember that these life cycles are modeled around participation in agriculture, thus they illustrate the stages at which agriculture is part of an individual’s livelihood. The models visually highlight the phases in which agriculture is most, as well as least, important (for instance the “missing Indo-Trinidadian men” between ages 36–50; see discussion below).

Each model is specific to an ethnicity and a gender, as specified in the figure’s title. Age is denoted along the top of the page, and increases from left to right. SRDs are indicated by boxes, and placed under their youngest observed age. Boxes on the extreme left, without antecedent arrows, indicate an SRD in which individuals may begin agriculture. Horizontal arrows from the boxes indicate the age range of farmers in a particular SRD. The relative frequency of an SRD among that ethnic and gender group is indicated by the heaviness of the box’s lines. The actual percentage is indicated inside each box. Shaded boxes are used to identify households in which an individual is not involved in agriculture, although their spouse or partner may be. These are included in only a few cases, to show important transitions into or out of agriculture. Arrows between SRDs show possible movement, through shifts in either farm gender or marital status. The thickness of an arrow indicates the frequency of movement along that path. Dashed lines represent a path that was previously common but is no longer observed.

62 These are specific to the ethnic group within the study regions, as other regions may have alternative economic opportunities that would affect participation in agriculture and create different life cycles.
Life Cycle of Afro-Trinidadian Women in Agriculture in Toco

Afro-Trinidadian women’s participation in agriculture in Toco (Figure 7-2) is marked by its variability, as indicated by the number of boxes (SRDs) and arrows (transformations).

There are numerous paths an Afro-Trinidadian woman can travel as she matures from youth to seniority. She may commence agriculture in any of the 5 SRDs on the extreme left. Subsequently, she may continue in the same SRD or change if she switches marital status or farm gender.

The youngest (20–35) Afro-Trinidadian women in agriculture belong entirely to SRD 12, common law farm couples. If their relationship ends, they may move to SRD 1, single female farmers, which indicates a decrease in their resource base. Alternatively, they may remain in a common law relationship, but their male partner may acquire off-farm work, leaving them as the sole female farmer (SRD 2). There is a tendency for Afro-Trinidadian couples to marry at a later age, joining SRD 13. However, some couples, particularly churchgoers, begin their relationship with marriage at a younger age. If the husband is employed off-farm or becomes unable to farm, the wife may work alone in the garden, as a married female farmer (SRD 3) for the duration of her life. If wives lose their husbands, they may continue in agriculture as widow female farmers (SRD 6) for longer than they otherwise might, since they are now the sole supporter of their household.
Figure 7-2. Afro-Trinidadian women in Toco: Possible life stages in agriculture
Life Cycle of Indo-Trinidadian Women in Agriculture in Cedros

In contrast to the many different paths that Afro-Trinidadian women may follow, most Indo-Trinidadian women in agriculture in Cedros tend to have similar life cycles (Figure 7-3). In general, all women marry before they leave their parental home. Thus, the youngest (20–35) group, SRD 5, is married female farmers. Interestingly, there are no farm couples in this age group. The wives remain on the farm, while their husbands work off-farm. In rare cases, marital discord may result in separation or divorce, causing newly single women to continue or commence agricultural activity as single female farmers (SRD 2).

Married farm couples (SRD 14) are not evident until farmers reach their 50s. This may be the result of two distinct causes: 1) husbands may resume agricultural activity as they approach retirement age in order to provide a senior cash-income, and / or 2) this may indicate a socioeconomic change in agricultural traditions. This older group of farm couples may be the aging remnants of a once common life style. Historically, there were no economic alternatives to agriculture, and it was traditional for working class Indo-Trinidadian men and women to cultivate their garden together, as a “team,” from the onset of marriage. Since economic opportunities have increased, this pattern is no longer evident among young couples, as husbands now work off-farm.

If farm women lose their husbands, they may continue in agriculture as widow female farmers (SRD 6). Other widows, previously housewives, may commence agricultural activities at the death of their husband out of economic necessity. This strategy is usually observed among widows whose husbands were farmers, as they have established land access and cropping systems.
Figure 7-3. Indo-Trinidadian women in Cedros: Possible life stages in agriculture

- Single female farmer SRD 2 (5%)
- Married farm couple SRD 14 (45%)
- Widow female farmer SRD 6 (15%)
- Married female farmer SRD 5 (35%)
- Married housewife, husband farmer
Life cycle of Afro-Trinidadian Men in Agriculture in Toco

The life cycles of Afro-Trinidadian men in agriculture in Toco (Figure 7-4) bear many similarities to Afro-Trinidadian women. Like women, the youngest men in agriculture are in common law relationships, either as individual male farmers (SRD 9) or as farm couples (SRD 12). Common law relationships are common until the age of 50, at which point most men decide to either formalize their relationship in marriage or return to life as single male farmers (SRD 7). Some men may pass between single and common law relationships several times over the course of their lifetime.

Married farm couples (SRD 13) are first evident among farmers in their mid-30s, and are especially prevalent among Seventh Day Adventist households. Lacking economic alternatives, both spouses work on the farm. However, if female employment opportunities arise, their wives may pursue work off-farm, leaving the husband alone on the farm as a married male farmer (SRD 10).

One interesting distinction is the absence of widowed men in agriculture, in sharp contrast to its prevalence among women of both ethnicities. Because marital status was self-reported, this may represent a cultural and gender difference. This partially reflects the lower incidence of formal marriage among Afro-Trinidadians. Additionally, widowed men may simply identify themselves as single.
Figure 7-4. Afro-Trinidadian men in Toco: Possible life stages in agriculture
Life cycle of Indo-Trinidadian Men in Agriculture in Cedros

Ethnic and gender differences lead Indo-Trinidadian men in agriculture in Cedros to have very distinct patterns of involvement in agriculture over their life cycle (Figure 7-5). Like Indo-Trinidadian women, men follow a very definite path from single life to married life. However, unlike Indo-Trinidadian women, the youngest men (20–35) in agriculture are single (SRD 8), whereas women of this age are all married. This indicates the greater autonomy of men, as they are more likely to have the resources and social mobility to establish an independent household and begin their own agricultural enterprise.

However, participation in agriculture disappears in the subsequent age group: there are no Indo-Trinidadian men observed in agriculture between the ages of 36 and 50. This phenomenon of “missing male farmers” was recognized by local Extension officers, who remarked that I might find relatively more women in Cedros involved in agriculture because of male employment in the oil industry. This was later confirmed by farmers in the region, who told me, “You won’t find young men in agriculture” as most are working in LNG, “where the money is.”

This age range (36–50) is typically the stage of marriage and child rearing, when household consumption requirements are greatest. The fact that men leave agriculture during this phase reflects their assessment of agriculture as a less profitable activity. Agriculture, as they know it, cannot provide adequate cash-income to support their household, so they turn to off-farm activities. If male employment off-farm provides sufficient cash-income, their wives often do not work outside the home. However, if the man’s off-farm job does not satisfy household needs, the wife will often work in the garden by herself.
Lay-offs or retirement may prompt older men (50 plus) to return to agriculture as married male farmers (SRD 11). If their wives have continued to garden, the men will rejoin them and work together as married farm couples (SRD 14). At the death of their wives, some men continue in agriculture as widower male farmers. Because of numerous similarities with single male farmers, widowers have been categorized as part of SRD 8. Interestingly, this is a smaller group (5%) than among women (15%), who are more dependent on agriculture at the death of their husband and are significantly more vulnerable than single female farmers.

It is important to recognize that this life cycle represents current social and economic trends. Much has changed for men in this region with the establishment of the oil and gas industry and the expansion of alternative employment opportunities. Not too long ago, this model would have been vastly different, without the “missing generation” of middle-aged male farmers. Before there were so many economic alternatives, young married farmers would not have left agriculture for off-farm employment but would have begun life as male farmers or farm couples at an earlier age (indicated by dashed lines). The future of agriculture in this region, and perhaps in Trinidad, depends on whether agriculture can re-emerge as a vibrant and competitive industry.
Figure 7-5. Indo-Trinidadian men in Cedros: Possible life stages in agriculture
Implications

As previously noted, Afro- and Indo-Trinidadians have distinct attitudes towards marriage, which are reflected in their typical life stages. Indo-Trinidadians tend to follow a rather predictable sequence of life stages, with marriage as the core. In contrast, Afro-Trinidadians may pass in and out of conjugal relationships, both common law and marital, and are more defined by their responsibility for dependents. This ethnic difference is visually apparent by comparing the number of boxes (SRDs) and arrows (transformations) in Indo- and Afro-Trinidadian models.

Transitions in farm gender are also more frequent among Afro-Trinidadians, as Afro-Trinidadian women are more likely to work off-farm. Afro-Trinidadian farm gender configurations switch due to external opportunities or constraints, as alternative employment becomes available to either partner. In contrast, although Indo-Trinidadian men have greater economic alternatives, they follow a fairly predictable path of participation in agriculture. Young single men, without family responsibilities, may be active in agriculture. However, during the “family years,” the vast majority of men work off-farm, in an attempt to provide a higher, more secure, or more diverse household cash-income. Only with advancing age or retirement do men return to the land and work in farm couples.

Life stage models can assist policy makers to visually identify the stages at which agriculture is most—and least—important to specific groups. This allows development professionals to target assistance to groups during the stages when they are most reliant on agriculture. Additionally, by identifying groups with low participation in agriculture, policy-makers may be able to remove the constraints that make agriculture unviable and increase overall participation in agriculture. Life stage models allow development
professionals to anticipate the movement of farmers into different target groups and provide appropriate support.

**Step 6: Compile Fact-sheets for each Social Recommendation Domain (SRD)**

Fourteen social recommendation domains were identified, based on farm gender, marital status, and ethnicity (Figure 7-6). These are as follows:

- SRD 1: Afro-Trinidadian female farmer, single
- SRD 2: Indo-Trinidadian female farmer, single
- SRD 3: Afro-Trinidadian female farmer, common law
- SRD 4: Afro-Trinidadian female farmer, married
- SRD 5: Indo-Trinidadian female farmer, married
- SRD 6: Afro- and Indo-Trinidadian female farmers, widows
- SRD 7: Afro-Trinidadian male farmers, single
- SRD 8: Indo-Trinidadian male farmers, single and widowers
- SRD 9: Afro-Trinidadian male farmers, common law
- SRD 10: Afro-Trinidadian male farmers, married
- SRD 11: Indo-Trinidadian male farmers, married
- SRD 12: Afro-Trinidadian farm couple, common law
- SRD 13: Afro-Trinidadian farm couple, married
- SRD 14: Indo-Trinidadian farm couple, married

The relative frequency of each SRD within a specific gender and ethnicity is presented in Figure 7-7 for women and Figure 7-8 for men. In the following pages, each SRD is discussed in detail. A textual summary is followed by a two page visual "factsheet" that presents the main social and agricultural variables. Each SRD is introduced by a short synopsis that summarizes the groups’ social characteristics as well as their typical objectives, resources, constraints, and activities. This is followed by recommendations for the agricultural support system on how to identify each group and appropriate types of assistance.
Figure 7-6. Social recommendation domains
Figure 7-7. Relative frequency of Afro- and Indo Trinidadian women in SRDs, defined by marital status and farm gender

F Farmer = Female farmer; C law = Common law
Figure 7-8. Relative frequency of Afro- and Indo Trinidadian men in SRDs, defined by marital status and farm gender

M Farmer = Male farmer; C law = Common law
A one page “Social map,” presents the factors characteristic of that group, based on survey analysis\(^{63}\) and participant observation. At the bottom of the page, “External agricultural resources” summarizes the existing relationship between farmers and the agricultural support system, based on survey data. The relationship between farmers and the agricultural support system is analyzed in terms of awareness of, access to, and satisfaction with specific services\(^{64}\) and organizations.

The “ORCA map” on the next page presents farmers’ objectives, resources, constraints, and activities. This is a map of possibilities or tendencies and should be interpreted as the “possible resources” and “typical objectives” of farmers in this group. The most common and / or influential of these are presented in boldface. For those seeking further description of a particular objective, resource, constraint, or activity, each is explained and illustrated in Chapter 6.

**SRD 1: Single Afro-Trinidadian Female Farmer**

**Social profile**

This is the one of the largest groups of Afro-Trinidadian women in agriculture (Figure 7-9) and also one of the most vulnerable. These are female-headed households, doubly constrained by farm gender and marital status – in both cases they have no partner to provide assistance. They have one of the lowest resource levels and farm primarily for survival. About half of these

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\(^{63}\) Due to the relatively small sample size in some categories, it is more appropriate to compare trends and relative size, rather than specific percentages. Therefore, the percentages have been rounded to their nearest fifth and are to be interpreted as general indicators of each group’s characteristics.

\(^{64}\) Registration refers to registration with the Ministry of Agriculture as a farmer. Incentives are government subsidies offered to farmers for specific farm inputs. Agricultural training implies formal educational courses offered by a variety of providers. Centeno is the head office of the Ministry of Agriculture and includes the educational services of the Farmer Training Center as well as various research bodies. Each community is also nominally under the auspices of a county extension office: Sangre Grande for Toco and Pt. Fortin for Cedros.
women rely entirely on agriculture, while another half use it to supplement off-farm employment and ensure food security (Figure 7-10).

Despite their low resource level, they have relatively high consumption requirements. Many are mothers with school-age children, while about a third are single grandmothers. They are solely responsible for dependents: children, grandchildren, and in some cases dependent adults. Therefore their primary objectives are directed toward the welfare and education of these dependents.

Their main constraints are labor and capital. Not only are they the sole farmer, but they also must provide all the household needs. All this they must accomplish while contending with the limitations on their mobility from childcare.

These women tend to have limited social capital. As low resource, single women, they may suffer from social invisibility. They have limited access to knowledge and labor, relying mostly on church networks or other female farmers. They are apt to know each other, and may do some sharing of labor. However, they are less likely to be part of any male farmer networks or organized farmer groups. As a result they have limited access to knowledge sources, which decreases their ability to overcome their other constraints.

**Implications for agricultural support system**

If policy-makers seek to increase food security among vulnerable groups, this is an important group to reach. This is a large group, highly dependent on agriculture, with limited resources. The women rely entirely on their own cash-income, which is highly tied to agriculture. Overall, these women have the greatest needs combined with the least amount of resources.
These women select activities that are possible given their limited resources. They have the highest dependence on cocoa and tree crops of any group, despite their limited profitability. Overall, their productivity is below potential, as they cannot provide the optimal level of inputs.

Currently they have extremely limited access to external agricultural resources. In general they have very little awareness of the Ministry of Agriculture’s services and no access at all. Not being registered, they are likewise invisible to the Ministry. The only organization that has been a significant resource for them is the Ministry of Community Development.

Although this should be a priority group for the agricultural support system, it will be a challenge, as it will require changes in their current approaches to both identify and assist this group. To locate these farmers, outreach officers would need to specifically look for single women, as these women do not have the time or ability to come to them. If Extension relies solely on male networks, they may never encounter these women. These women can be reached through schools, churches, and other female farmers. They will most likely be in the garden during school hours, which may be far from their dwelling, as many do not have land access.

Recommended agricultural practices will have to fit into their lives as shaped by dependents. They would not be able to implement costly, time-consuming, or labor-intensive cultivation practices. They can use help identifying local marketing options, or combining produce to retail together, as an alternative to selling produce at below market prices to middlemen.
### SRD 1: Afro-Trinidadian Female Farmer

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<thead>
<tr>
<th>Figure 7-9. Social map of SRD 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relative Size of Group</strong></td>
</tr>
<tr>
<td>Percent of women: 10%</td>
</tr>
<tr>
<td>Percent of AT women: 25%</td>
</tr>
<tr>
<td>Percent of AT female farmers: 45%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Social Factors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-cultural factors</strong></td>
</tr>
<tr>
<td>Ethnicity: Afro-Trinidadian</td>
</tr>
<tr>
<td>Gender: Female</td>
</tr>
<tr>
<td>Farm gender: Female farmer</td>
</tr>
<tr>
<td>Religion: Mixed Christian; Rastafarian</td>
</tr>
<tr>
<td><strong>Socio-economic factors</strong></td>
</tr>
<tr>
<td>Economic objective: Survival</td>
</tr>
<tr>
<td>Land: Insecure—Squat or lease pending</td>
</tr>
<tr>
<td>Education: Primary, younger have secondary</td>
</tr>
<tr>
<td><strong>Life-stage factors</strong></td>
</tr>
<tr>
<td>Age: 36–50; some 50 plus</td>
</tr>
<tr>
<td>Marital status: Single</td>
</tr>
<tr>
<td>HH size: 3</td>
</tr>
<tr>
<td>Children/Dependents: 1–2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>External Agricultural Resources</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration: Aware, but not registered.</td>
</tr>
<tr>
<td>Incentives: Limited awareness, none have received incentives.</td>
</tr>
<tr>
<td>Agricultural training: Limited, only one quarter have any training.</td>
</tr>
<tr>
<td>Centeno: No interaction</td>
</tr>
<tr>
<td>County extension office: Half no interaction; half moderately satisfied.</td>
</tr>
<tr>
<td>Other organizations: One-third took Ministry of Community Development courses.</td>
</tr>
</tbody>
</table>

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Figure 7-9. Social map of SRD 1
Figure 7-10. ORCA map of SRD 1

SRD 1
AFRO-TRINIDADIAN
FEMALE FARMER
SINGLE

OBJECTIVES
- Education of children
- Care of dependents
- HH food
- HH cash
- God’s work
- Survival
- Local employment
- Progress
- Female head of household
- Recovery
- Love of agriculture
- Share
- Health
- Own boss

RESOURCES
- Maternal support
- Autonomy
- Remittances
- Pension
- Leased land
- Network labor
- Network knowledge
- Experience
- Farm shops
- Positive attitude

CONSTRAINTS
- Gender stereotypes
- HH instability
- Female invisibility
- HH labor
- Dependents
- Female head of household
- Female safety
- Low income
- Lack of transportation
- Social isolation
- Lease delayed
- Gender roles
- Female schedule
- Sole farmer
- Limited education
- Outside network
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: Split high/low. 40% are dependent on ag; the rest are minor ag.
Crops: 50% cocoa, 45% banana & plantain; 45% short crops, 40% tree crops

- What: Diverse food garden
- What: Steady crop
- What: Keep cocoa
- What: Eat & sell crops
- How: Glean
- What: Low labor activity
- What: “easy crops”
- How: Low inputs
- What: Storage crops
- What: Middlemen crops
- What: Existing tree crops
- What & How: Traditional Crops
- How: Less cultivation
- How: Less post-harvest
- What: Traditional
- How: Unsafe chemical use
SRD 2: Single Indo-Trinidadian Female Farmer

Social profile

This is the smallest group of women in agriculture (Figure 7-11), probably due to the importance of marriage in Indo-Trinidadian society. Typically these are not young unmarried women, but rather middle-aged women who have divorced or separated from their husband. These women are often in transition, sometimes in refuge from bad relationships, and are trying to start anew. They have turned to agriculture as one of the few available means of economic support. However, many have little previous experience in agriculture or access to necessary resources.

Like SRD 1, these are female – headed households, with limited resources and sole responsibility for household, dependents, and cash-income generation. These women also face cultural constraints, as single women in Indo-Trinidadian society are less recognized as autonomous actors in the public realm. They also may face a social stigma if they have left their husbands.

In the best situations, these women have the support of their extended family. However, some women are on their own, as there may be little support for women who choose to leave relationships. This group therefore tends to have limited social capital, as these women may no longer have access to the strong family network that other Indo-Trinidadian women rely on.

These women tend to access land through their family or else squat. However, because most women will not work alone on remote or isolated land, they are often limited to working land around their house.
Implications for agricultural support system

This group is highly vulnerable and would benefit from individualized assistance, as they have few other resources. Even though agriculture is only a minor source of cash-income (Figure 7-12), agricultural aid could directly increase household food security. Although this group is small, Extension should be aware that women in this category do exist, and assist them in appropriate ways.

These women tend to grow crops that are feasible around the house, primarily for consumption and secondarily for the market, if proven viable. Most are starting out in agriculture, with limited resources, so agriculture provides only a quarter to a third of their cash-income. Other cash-income sources may be family or government assistance.

Most of these women have turned to agriculture only recently, and have relatively little experience in production or marketing. Although some are aware of the available agricultural services, none of them have utilized those resources. Neither have any of these women taken courses from the Ministry of Community Development or other external organizations, indicating an overall low level of access to public resources.

The first challenge is to identify these women. This group is doubly invisible, as there is no public male figure in the household and they are often socially isolated. Community members may not recognize them as farmers, nor are women likely to have the time or tendency to attend public forums. Outreach officers will have to make an extra effort to reach these women. As a highly vulnerable population, such support could affect the household’s ultimate survival. Assistance to these households will need to be highly individualized, to address their particular resource constraints. Additional backing may be necessary until these households can establish a secure foundation.
SRD 2

INDO-TRINIDADIAN  FEMALE  SINGLE

RELATIVE SIZE OF GROUP
Percent of women: 5%
Percent of IT women: 10%
Percent of IT female farmers: 15%

SOCIAL FACTORS

Socio-cultural factors
Ethnicity: Indo-Trinidadian
Gender: Female
Farm gender: Female farmer
Religion: Hindu and Christian

Socio-economic factors
Economic objective: Survival
Land: Mix: Private or lease pending
Education: Primary or partial primary

Life-stage factors
Age: Over 35
Marital status: Single, often divorced / separated
HH size: NA
Children/Dependents: 0–2

EXTERNAL AGRICULTURAL RESOURCES

Registration: Moderate awareness. None are registered.
Incentives: Moderate awareness. None have received incentives.
Agricultural training: None.
Centeno: No interaction.
County extension office: Very little interaction, but helpful.
Other organizations: No interaction, not even with Ministry of Community Development

Figure 7-11. Social map of SRD 2
### SRD 2
#### INDO-TRINIDADIAN
#### FEMALE FARMER
#### SINGLE

#### OBJECTIVES
- Education of children
- Care of dependents
- HH income
- HH food
- Survival
- Female head of HH
- Recovery

#### RESOURCES
- **Family network**
- Pension
- Leased land
- Family labor
- Farm shops
- Market knowledge

#### CONSTRAINTS
- Gender stereotypes
- Female mobility
- Female invisibility
- HH labor
- Dependents
- Female head of HH
- Male alcohol
- Male violence
- Female safety
- Low income
- Lack of transportation
- Social isolation
- Low female tenure
- Female schedule
- Age / health
- Sole farmer
- Limited education
- Outside network

#### AGRICULTURAL ACTIVITIES
**Agricultural Income**: Low. One-third or less.

**Crops**: Short crops, home garden.

- What: Diverse food garden
- What: Cash crop
- What: Retail crop
- **What: Eat & sell crop**
- How: Stagger planting
- How: Glean
- **How: Home production**
- What: “Easy crops”
- How: Low inputs
- How: Off-farm income
- How: Family land
- What: Low labor activity
- **How: Less cultivation**
- How: Experiment
- How: Low fertility
- How: Unsafe chemical use

---

Figure 7-12. ORCA map of SRD 2
SRD 3: Common-law Afro-Trinidadian Female Farmer

Social profile

This is a relatively small group of middle-aged women with a large number of dependents (Figure 7-13). Although they are in a relationship, they are solely responsible for agricultural production. Like other female farmers, they are limited in their agricultural resources and are constrained by their household responsibilities.

Although the presence of a partner provides the potential for greater financial assistance, there is no assurance of this. Common law relationships are less stable than marital relationships, so these women must always ensure their ability to provide basic necessities for the household on their own, regardless of their partner’s contribution. This is more difficult given the fact that these women report the highest number of dependents of any group, substantially more than married farmers (5–6 versus 2–3). To ensure adequate cash-income, many of these women will work off-farm, given the opportunity (Figure 7-14).

While they maintain high levels of autonomy in their relationship, they generally have fewer resources than married women. They have limited social capital, as these women are less affiliated with churches or other formal organizations than married couples, and access farmer networks less than male farmers (25% versus 65%). They primarily access resources through one or two close female friends from similar backgrounds. They have limited legal access to land, therefore the majority squat. Yet even without land, they are forced to engage in agricultural activities, to ensure individual and household well-being.

Implications for agricultural support system

This is an important group for the agricultural support system to access. Although it is a small group, it is relatively insecure with low resources, high needs and a moderate reliance on
agriculture. Assisting these women could provide some of the greatest returns by improving
well-being for a large number of dependents.

These women primarily cultivate bananas and plantains, as it provides a relatively high
cash-income and is feasible for squatting. However, they use lower inputs than optimal,
decreasing yield, and sell their crop through a middleman, further deflating profit. They often
grow root crops, which maximize food security, as they can be stored for a long time and are
high in calories. Other crops include cocoa and tree crops, where accessible on abandoned lots.

Like single female farmers, they have minimal interaction with or recognition by the
agricultural support system. This may indicate a hesitation to identify themselves as farmers, as
they have no legal land access. At the same time it reflects the systems’ own biases, which
preferentially provides assistance and resources to landed farmers. This also reflects gender
biases, which tend to keep these women unrecognized. However, many of these women have
accessed the resources of the Ministry of Community Development. This indicates both their
desire for new information and their ability to participate in local forums that are organized
around their time constraints.

As with other female farmers, identifying these women will require a dedicated effort, as
they will not be recognizable through a male partner. Interventions would have to be sensitive to
land issues, and in the best scenario would help these women obtain some form of legal tenure.
Although these women have limited resources, they have a need and a determination that has
kept them in agriculture without any support system. Therefore, with appropriate support, they
could increase their ability to provide stable support for their household. Aid should focus on
simple, low-cost methods of improving yield and enhanced marketing strategies.
Figure 7-13. Social map of SRD 3

<table>
<thead>
<tr>
<th>SRD 3</th>
<th>AFRO-TRINIDADIAN</th>
<th>FEMALE FARMER</th>
<th>COMMON-LAW</th>
</tr>
</thead>
</table>

### RELATIVE SIZE OF GROUP
- Percent of women: 5%
- Percent of AT women: 10%
- Percent of AT female farmers: 20%

### SOCIAL FACTORS

**Socio-cultural factors**
- Ethnicity: Afro-Trinidadian
- Gender: Female
- Farm gender: Female farmer
- Religion: Mix Christian; Rasta

**Socio-economic factors**
- Economic objective: Survival, security
- Land: Squat
- Education: Primary or partial primary

**Life-stage factors**
- Age: 36–50; some over 50
- Marital status: Common law
- HH size: 5–6
- Children/Dependents: 4

### EXTERNAL AGRICULTURAL RESOURCES
- Registration: Limited awareness, none registered.
- Incentives: No awareness, none received.
- Agricultural training: None.
- Centeno: No interaction
- County extension office: Limited, but helpful.
- Other organizations: Moderate use of Ministry of Community Development courses

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Figure 7-14. ORCA map of SRD 3

SRD 3
AFRO-TRINIDADIAN
FEMALE FARMER
COMMON-LAW

OBJECTIVES
- Education of children
- Care of dependents
- HH income
- HH food
- Survival
- Local employment
- Starting out
- Progress
- Female head of HH
- Love of agriculture
- Share
- Health
- Own boss

RESOURCES
- Maternal support
- Autonomy
- Off-farm income
- Spouse’s income
- Remittances
- Network labor
- Network knowledge
- Experience
- Farm shops
- Positive attitude

CONSTRAINTS
- HH instability
- HH labor
- Dependents
- Female head of HH
- Low income
- Lack of transportation
- Social isolation
- No legal tenure
- Limited accessibility
- Soil erosion
- Low female title
- Manual labor
- Gender roles
- Female schedule
- Sole farmer
- Limited education
- Outside network
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural Income: Moderate. Agriculture provides 50% or more of HH income, depending on support of partner or availability of off-farm employment.
Crops: Bananas and plantains, root crops. Also cocoa and tree crops where accessible.

- What: Preferred foods
- What: Cash crop
- How: Separate garden
- What: Eat & sell crop
- How: Low inputs
- How: Off-farm income
- What: Local market crops
- What: Storage crops
- What: Middlemen crops
- How: Squatting
- What: Low labor activity
- What: Variety
- What: Traditional
- How: Low fertility
SRD 4: Married Afro-Trinidadian Female Farmer

Social profile

This is one of the smallest groups of women in agriculture (Figure 7-15), with a low level of dependence on agriculture (Figure 7-16). These are married women, usually mothers, for whom agriculture is not primarily important as a livelihood activity, as their spouse provides a secure cash-income from an off-farm job.

As female farmers, they are limited in their labor and knowledge resources. However, as married women, they have more secure access to financial support than single or common law female farmers. This capital can substitute for some other limiting resources, so these women may have a greater ability to purchase inputs or hire labor. However, many of these women do not invest heavily in their garden, as they are not as driven to generate a cash-income from it. These women may participate in agriculture to supplement household food needs or simply because they enjoy gardening as a traditional activity.

Although they have medium-sized families, they share the burden of support with their husbands. Therefore, they are able to primarily fulfill household responsibilities and may only pursue agriculture when their domestic and childcare duties allow. This often means working in the garden when children are in school.

For the majority of these women, agriculture provides a quarter or less of household cash-income. The majority of household cash-income is generated through off-farm jobs, their own or their partner’s. The garden primarily serves to enhance the family’s food security, especially if off-farm work is unreliable.
Implications for agricultural support system

This group is less of a priority for agricultural assistance, as they are neither as reliant on agriculture nor as vulnerable as SRD 1, 2, or 3. The majority of household cash-income is derived from their or their spouse’s off-farm jobs. They farm primarily to supplement their household food needs and nutrition, or simply for enjoyment. Given the security of the marital bond, and the diversity of incomes and activities, these households tend to be more secure economically.

These women frequently cultivate cocoa, as well as short crops and banana and plantain. As the sole farmer, they tend to select traditional activities that they feel able to manage on their own. However, their desire for further knowledge is evidenced in their high level of participation in training activities, including both local agricultural training and community development courses.

As female farmers, they may not be readily visible to Extension, as their husbands are not involved in agriculture. This is compounded by the fact that none of these women are registered. Although they report some awareness of the Ministry of Agriculture, they have not availed themselves of many of their services.

Interventions should be aimed at meeting their household objectives, and be suitable for low labor systems, if possible increasing knowledge as a substitute for labor. Some of these women do have a small amount of time and capital to invest in their farming systems. Improvements in agricultural production could enhance household security and well-being by enabling women to expand their total production or improve their yields.
SRD       AFRO-         FEMALE        MARRIED
          TRINIDADIAN      FARMER

RELATIVE SIZE OF GROUP

Percent of women: 5%
Percent of AT women: 5%
Percent of AT female farmers: 10%

SOCIAL FACTORS

Socio-cultural factors
Ethnicity: Afro-Trinidadian
Gender: Female
Farm gender: Female farmer
Religion: Mix Christian

Socio-economic factors
Economic objective: Survival, security
Land: Lease pending
Education: Primary and secondary

Life-stage factors
Age: All ages
Marital status: Married
HH size: 5
Children/Dependents: 2–3

EXTERNAL AGRICULTURAL RESOURCES

Registration: Medium awareness, none registered.
Incentives: Medium awareness, none received.
Agricultural training: High
Centeno: Moderate interaction and satisfaction
County extension office: No interaction.
Other organizations: High participation in Ministry of Community Development courses.

Figure 7-15. Social map of SRD 4
Figure 7-16. ORCA map of SRD 4

SRD 4 | AFRO-TRINIDADIAN | FEMALE FARMER | MARRIED

OBJECTIVES
- Culture of agriculture
- Education of children
- Care of dependents
- HH food
- God’s work
- Security
- Starting out
- Progress
- National value
- Work ethic
- Love of agriculture
- Share
- Recreation
- Health

RESOURCES
- Marital security
- Maternal support
- Autonomy
- Spouse’s income
- Hired labor
- Leased land
- Family labor
- Network labor
- Experience
- Ag orgs
- Farm shops
- Positive attitude

CONSTRAINTS
- Female invisibility
- HH labor
- Dependents
- Low income
- Lack of transportation
- Lease delayed
- No legal tenure
- Limited accessibility
- Soil erosion
- Low female title
- Manual labor
- Gender roles
- Female schedule
- Sole farmer
- Limited education
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: Low: One quarter or less
Crops: Cocoa, mixed short crops, bananas & plantains,

- What: Traditional activity
- What: Diverse food garden
- What: Preferred foods
- What: Keep cocoa
- What: Eat & sell
- How: Couple diversify
- How: Farm without lease
- What: Low labor activity
- How: Plant together
- How: Less cultivation
- **How: Male land prep**
- What: Traditional
- **How: Classes recs**
- How: Low fertility
- How: Unsafe chemical use
SRD 5: Married Indo-Trinidadian Female Farmer

Social profile

This is the second largest group of Indo-Trinidadian women in agriculture (Figure 7-17). They are young to middle-aged (20–50) wives and mothers, with spouses working off-farm. These are the wives of the “missing” Indo-Trinidadian men, aged 36–50, who report no participation in agriculture. Typically these are medium-sized households, with 2–3 children.

There are two subgroups within this SRD, based on social class and economic level, with distinct social and agricultural profiles. About half the households are at the survival level, so wives must farm in order to supplement their husband’s cash-income and meet basic needs. Agriculture is very important to the welfare of these households, as it provides half or more of household cash-income (Figure 7-18).

The other subgroup is composed of wealthier households, mostly at the security level. Women from these households do not have to farm for economic survival, however they choose to do so for several reasons. In traditional families, it is seen as a mark of status for women to remain inside the home. As a result, some women have very limited independence or mobility. For these women, farming satisfies several objectives: 1) It provides a productive and fulfilling occupation while they are at home alone, 2) It gives them access to a separate cash-income stream and 3) It may provide an acceptable reason for them to sell at the retail market, which is both a social and a financial opportunity. Although agriculture is less important to the overall household, as it provides a quarter or less of total cash-income, it is of great personal value to the female farmers themselves. They farm more for personal fulfillment than for family maintenance.
Implications for agricultural support system

This is an important group for Extension to work with both because of its size and the relative importance of agriculture to these households. Although these households are generally not as vulnerable as SRD 1, 2 or 3, many function at the survival level and are highly dependent on agriculture for their cash-income.

Cultural restrictions on mobility are evident in their selection of crops: floriculture, short crops (especially dasheen bush) and tree crops can all be grown in the immediate vicinity of the household. This is in direct contrast to the crops grown by married and common law Afro-Trinidadian women, who typically choose crops (cocoa, banana and plantain) that are cultivated extensively, at some distance form the house.

This may be a difficult group to identify, given socio-cultural norms that restrict women’s mobility and visibility. Since their spouses work off-farm, these households are often not identified as agricultural households by the community. The women themselves may not self-identify as farmers; they certainly don’t consider themselves important enough to register as farmers, although all of the women are aware of this program. Some women may be encountered at local retail markets. Homebound women may need to be identified through temples, churches, mosques, or other women. Because of their restricted mobility, they may require home visits and individualized attention, with due consultation of spouses.

The vibrancy of the local Extension office is evident in the fact that half of these women report a high level of satisfaction with the services they have received at the office, and moderate interaction with the district’s outreach officer. One third of women have received some agricultural training, primarily at local venues. They report the second highest use of farm shops (40%), indeed this is tied for Extension as their second most important source of information.
Figure 7-17. Social map of SRD 5

<table>
<thead>
<tr>
<th>SRD 5</th>
<th>INDO-TRINIDADIAN</th>
<th>FEMALE FARMER</th>
<th>MARRIED</th>
</tr>
</thead>
</table>

**RELATIVE SIZE OF GROUP**

- Percent of women: 20%
- Percent of IT women: 35%
- Percent of IT female farmers: 60%

**SOCIAL FACTORS**

**Socio-cultural factors**
- Ethnicity: Indo-Trinidadian
- Gender: Female
- Farm gender: Female farmer
- Religion: 3/4 Hindu; 1/4 Christian

**Socio-economic factors**
- Economic objective: Survival, Security
- Land: 3/4 private, 1/4 squat
- Education: 2/3 primary, 1/3 secondary

**Life-stage factors**
- Age: 40% 20–35; 40% 36–50
- Marital status: Married
- HH size: 5
- Children/Dependents: 2–3

**EXTERNAL AGRICULTURAL RESOURCES**

- Registration: 100% aware, but none registered.
- Incentives: 100% aware, but none received.
- Agricultural training: One third have some training
- Centeno: No interaction
- County extension office: One half are very satisfied. Moderate interaction district officer.
- Other organizations: One quarter have taken courses with Min of Community Development.
Figure 7-18. ORCA map of SRD 5
SRD 6: Widows: Afro and Indo-Trinidadian Female Farmers

Social profile

Although this is a relatively small group, it is significant in its unique constraints and its high dependence on agriculture. Widows comprise 15% of the women in agriculture in each ethnic group (Figure 7-19). The loss of a spouse has such an impact on their lives that it obscures most cultural differences, allowing the two ethnic groups to be considered together as one social recommendation domain. These are abruptly formed female-headed households, and their transition to an agricultural livelihood is often sudden. Their immediate needs, combined with their limited and suddenly depleted resources, makes them extremely vulnerable. Economic survival becomes an overriding concern, and often forces women to enter new roles.

Some widows only turn to agriculture upon the death of their husband, in an attempt to generate some household cash-income. Even if their husbands were farmers, the women themselves may have had little or no experience in the garden, with the possible exception of marketing. Other widows may have been farmers previously, but still must contend with the loss of their husband’s resources. In addition, many widows are in or approaching their senior years, and face the added constraints of age, such as declining health and strength. Labor is therefore an important constraint for these women.

Given their other resource limitations, widows are highly dependent on social capital. Their peer network is also an aging population and may provide limited support. Therefore, women from both ethnic groups typically rely on family support: Afro-Trinidadian women through maternal bonds with children and Indo-Trinidadian women from the extended family. If this support is not available, these women face an uncertain future.
Implications for agricultural support system

As a unique and vulnerable group, this is an important group for the agricultural support system to recognize and support. Most widows are highly dependent on agriculture for their survival (Figure 7-20). Two thirds rely on agriculture for the majority (75–100%) of their cash-income, while for the other third agriculture is a minor source of cash (25% or less), probably a supplement to their pension.

Cocoa is the most frequently cultivated crop by widows of both ethnicities. The choice of cocoa indicates their limited resources for agricultural production. Widows may choose cocoa as one of the few traditional crops that they have some knowledge of. However, cocoa is one of the least profitable crops, and reliance on this crop ensures the continued marginality of these women. Afro-Trinidadian women also harvest tree crops, while Indo-Trinidadian women cultivate more of the traditional “home crops” such as short crops, floriculture, and small livestock. Women who sell in the market tend to experiment with retail crops.

All the widows report being aware of the farmer’s registration program, and half of the Indo-Trinidadian widows are registered farmers. Some have received subsidies through the government incentive program, while few Afro-Trinidadian women are even aware of the program. This trend is repeated in agricultural training. The ethnic difference reflects the overall regional difference in county services, as Toco has no assigned district officers, while Cedros has a dynamic county office.

The fact that Indo-Trinidadian widows report the highest use of Extension services of any female farmers highlights the potential for Extension to reach and serve women, if they identify women as farmers. Assistance should take into consideration the limited resources of these women, especially capital, labor, age / health, and education.
Figure 7-19. Social map of SRD 6

SRD 6  AFRO- & INDO-TRINIDADIAN  FEMALE FARMER  WIDOWS

RELATIVE SIZE OF GROUP
Percent of women: 10%
Percent of AT / IT women: 15%
Percent of AT / IT female farmer: 25%

SOCIAL FACTORS
Socio-cultural factors
Ethnicity: Afro- & Indo-Trinidadian
Gender: Female
Farm gender: Female farmer
Religion: All

Socio-economic factors
Economic objective: Survival
Land: Afro lease; Indo private
Education: Primary or partial primary

Life-stage factors
Age: Over 50
Marital status: Widows
HH size: Afro 2, Indo 4
Children/Dependents: 0–1

EXTERNAL AGRICULTURAL RESOURCES
Registration: All were aware, and half of IT were registered
Incentives: IT widows were aware and half had received; while few AT were aware.
Agricultural training: No AT women; some IT
Centeno: No interaction
County extension office: Most AT and IT had visited the office and were “usually” satisfied. IT women also had a satisfactory relationship with a district outreach officer.
Other organizations: AT women had taken MCD courses, while no IT women had.

Figure 7-19. Social map of SRD 6
SRD 6 AFRO- & INDO-TRINIDADIAN FEMALE FARMER WIDOWS

OBJECTIVES
- Culture of agriculture
- God’s work
- Care of dependents
- HH income
- HH food
- Survival
- Female head of HH
- Recovery
- Senior income
- Love of agriculture
- Share
- Health

RESOURCES
- Family network
- Maternal support
- Autonomy
- Remittances
- Pension
- Private land
- Leased land
- Network labor
- Experience
- Ag orgs
- Farm shops
- Markets
- Positive attitude

CONSTRAINTS
- Gender stereotypes
- Female invisibility
- Dependents
- Female head of HH
- Low income
- Lack of transportation
- Social isolation
- No legal tenure
- Lease delayed
- Low female title
- Limited accessibility
- Gender roles
- Sole farmer
- Age / Health
- Limited education
- Outside network
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: High (75–100%) for most women; for a few was a supplemental income (25%) probably to pension.
Crops: Cocoa for AT and IT women. AT also relied on tree crops while IT women cultivated mixed “home” crops, livestock, roots crops, short crops, floriculture
- What: Traditional activity
- What: Small livestock
- What: Cash crop
- What: Keep cocoa
- What: Eat & sell crop
- How: Clean
- What: Low labor activity
- What: “Easy crops”
- How: Low input
- What: Existing tree crops
- How: Less cultivation
- How: Traditional
- How: Low fertility
- How: Unsafe chemical use

Figure 7-20. ORCA map of SRD 6
SRD 7: Single Afro-Trinidadian Male Farmers

Social profile

This is the one of largest groups of Afro-Trinidadian men in agriculture (Figure 7-21), and potentially one of the more vulnerable groups of male farmers. Like SRD 1, these men face the dual constraints of being a sole farmer and a single adult, thus they are entirely constrained to their own resources. However, they are typically not as vulnerable as single female farmers, as they have fewer gender-based constraints and lower consumption requirements. Although they may be fathers, their children do not live with them. Without dependents to support, they are freed from the primary constraint of single Afro-Trinidadian women.

Having fewer responsibilities, single male farmers may accumulate varying levels of economic resources. While the majority of single men initially farm for survival, some may reach the security or profit maximization level. If they acquire a certain amount of cash-income, they can afford to increase input levels.

While single men have fewer gender-related constraints, they are still limited by external factors, particularly the depressed state of the agricultural support network in this region. The majority (75%) of these farmers are almost completely dependent on agriculture, deriving close to 100% of their cash-income from their gardens (Figure 7-22). Only a quarter have off-farm employment and use their garden to supplement their wages.

Implications for agricultural support system

As a large and potentially vulnerable group, with a high dependence on agriculture, these farmers should be a medium priority for the agricultural support system. Their needs are not

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65 Typically such children live with the mother or grandmother’s family.
immediately pressing, however their high participation in agriculture would make any
improvements in yield highly beneficial to both the farmers and the nation. Given their
dependence on agriculture, and their proactive nature, they are likely to be eager clients of
Extension and research.

The vast majority of these farmers cultivate bananas and plantains, especially in the village
of Sans Souci. Farmers in other villages cultivate a greater diversity of crops, including cocoa,
short crops, and tree crops. Having more economic resources and fewer constraints than women,
male farmers are able to experiment with new cultivation techniques and crops. They are highly
mobile, through work and recreation, and are tied in to local networks of support, that provide
agricultural knowledge on and labor. Some of these networks are specific to a village, while
others are based on church, political, or familial affiliation.

As a highly active and motivated group, it should not be difficult to identify these farmers.
Despite the lack of an outreach officer, many farmers have taken the initiative to access the
Ministry’s resources themselves. Some have traveled to the county office and almost all have
visited the even more distant Farmer’s Training Center in Centeno to access the Ministry’s
resources, exhibiting a tremendous desire for knowledge. Although only a quarter of farmers
have registered, this does not reflect their lack of effort but rather their constraints of land and
outreach. As active members of the community, they often assume leadership roles. This energy
and commitment could help to further strengthen the ties between agricultural organizations and
the farming community.
Figure 7-21. Social map of SRD 7

<table>
<thead>
<tr>
<th>SRD</th>
<th>Afro-Trinidadian Male Farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
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</tr>
</tbody>
</table>

**Relative Size of Group**
- Percent of men: 15%
- Percent of AT men: 25%
- Percent of AT male farmers: 40%

**Social Factors**

**Socio-cultural factors**
- Ethnicity: Afro-Trinidadian
- Gender: Male
- Farm gender: Male Farmer
- Religion: Christian (1/2 SDA) & Rasta

**Socio-economic factors**
- Economic objective: Survival, Security; Profit
- Land: Insecure: 1/2 squat/ 1/2 lease pending
- Education: 1/2 primary; 1/2 secondary

**Life-stage factors**
- Age: Middle-aged: Half 36–50, half 51–65
- Marital status: Single
- HH size: 1–2
- Children/Dependents: 0

**External Agricultural Resources**
- Registration: All were aware; only a quarter were registered.
- Incentives: Only a quarter were aware; none were registered.
- Agricultural training: Moderate; half had taken agricultural courses.
- Centeno: High rate of interaction; high rate of satisfaction.
- County extension office: Moderate interaction; medium satisfaction.
- Other organizations: No MCD courses.
Figure 7-22. ORCA map of SRD 7
SRD 8: Single Indo-Trinidadian Male Farmer

Social profile

Although this is the smallest group of Indo-Trinidadian men in agriculture (Figure 7-23), it may be one of the most significant for the future of agriculture in this community. This group constitutes a specific life stage among Indo-Trinidadian men, as opposed to Afro-Trinidadian men, who may remain single their entire life. These are young men, still unmarried, who are attempting to develop agriculture as a profitable livelihood. This is a crucial stage, because as they transition to a family man, with a wife and dependents, they will need to provide a higher cash-income. Therefore, if these men are to remain in agriculture, they must see it as a viable activity. If not, they will turn to off-farm work, as is currently the case among 36–50 year olds, who report no participation in agriculture.

The majority of these farmers are highly dependent on agriculture, which provides 90-100% of their cash-income (Figure 7-24). Only a third currently work off-farm and use agriculture as a supplemental source of cash.

Their major constraint, that sets them apart from the older generation of Indo-Trinidadian men, is limited access to private land. More than half are squatters. The fact that these young men are still willing to invest in agriculture, without secure resources, at a time when agriculture enjoys no social prestige, indicates the dedication that these men have to an agricultural career. However, to allow them to realize their full potential, the government must improve their land access in an efficient and affordable manner. This should not be an insurmountable obstacle, as there is an abundance of abandoned land in this area that could be leased to farmers.
Implications for agricultural support system

It is important to assist this group not because of its vulnerability, but because of its potential to revitalize agriculture in these communities. These farmers represent the uncertain future of agriculture in Trinidad. They are young, dynamic, and committed to agriculture; yet they will probably leave agriculture once they marry and have children, unless they are aided in developing a profitable venture. Agricultural support is crucial for this group and, done appropriately, would yield a high rate of return.

Currently this group has one of the most diverse crop profiles. They engage in traditional activities such as livestock out of their love of agriculture. Many also engage in bananas and plantains as a reliable crop that is suitable for squatting. Those that have greater access to resources such as knowledge, transportation, and capital are also trying many new short crops, using unconventional cultivation techniques and exploring new markets. Significantly, the one crop not reported is cocoa.

Use of the agricultural support system is, in this case, directly linked to land access. Those farmers that are working private land have accessed the entire range of services offered by the Ministry of Agriculture. They are registered, have received incentives, and have participated in agricultural training sessions. In contrast, squatters have benefited from none of these services. However, both landed and landless report above average interaction and satisfaction with the county office, and report moderate satisfaction with the district officer.

This group is easy to identify and access, as most report some interaction with Extension. Although squatters may be wary of farm visits, all could benefit from up-to-date information. Help in developing long-term business strategies would be invaluable in ensuring that agriculture remains a viable livelihood activity as they transition to the demands of family life.
SRD 8  INDO-TRINIDADIAN  MALE FARMER  SINGLE

RELATIVE SIZE OF GROUP

Percent of men: 10%
Percent of IT men: 15%
Percent of IT male farmers: 20%

SOCIAL FACTORS

Socio-cultural factors
Ethnicity: Indo-Trinidadian
Gender: Male
Farm gender: Male farmer
Religion: Mixed Hindu, Christian, Muslim.

Socio-economic factors
Economic objective: Survival. security, profit
Land: More than half squat, rest private
Education: secondary

Life-stage factors
Age: Young. Half 25–30; half 36–50;
Marital status: Single
HH size: 2
Children/Dependents: 0

EXTERNAL AGRICULTURAL RESOURCES

Registration: All are aware; the landed half are registered.
Incentives: All are aware, the registered half have received.
Agricultural training: Half have taken courses.
Centeno: Limited access, but high satisfaction.
County extension office: High interaction & satisfaction. Moderate rating of district officer
Other organizations: No MCD courses.

Figure 7-23. Social map of SRD 8
OBJECTIVES
- Culture of agriculture
- God’s work
- Survival
- Local employment
- Security
- Maximum profit
- Starting out
- Progress
- National value
- Love of agriculture
- Own boss

RESOURCES
- Family network
- Autonomy
- Off-farm income
- Transportation
- Hired labor
- Private land
- Network knowledge
- Ag orgs
- Formal education
- Mass media
- Leadership
- Innovative

CONSTRAINTS
- Low income
- Lack of transportation
- No legal tenure
- Limited accessibility
- Manual labor
- Sole farmer
- Favoritism

AGRICULTURAL ACTIVITIES
Agricultural income: High. Two thirds depend on agriculture for the majority (90-100%) of their income. One third have minor agricultural income (less than 50%).
Crops: Mixed: Bananas & plantains, livestock, short crops, tree crops.

- What: Traditional activity
- What: Steady crop
- What: Keep cocoa
- How: Diversify agriculture
- How: Diversify income
- What: High value crop
- What: Short crop
- How: Hired labor
- How: High inputs
- What: Middlemen crops
- How: Sell roadside
- How: Squatting
- What: Class recommendations

Figure 7-24. ORCA map of SRD 8
SRD 9: Common-law Afro-Trinidadian Male Farmer

Social profile

This is one of the smaller groups of Afro-Trinidadian men in agriculture (Figure 7-25), with medium to high dependence on agriculture (Figure 7-26), depending on the availability of off-farm employment. They tend to be at a fairly low economic level, thus they attempt to balance their activities to ensure survival and provide some security. If off-farm employment is available for either partner, agriculture is used as a supplemental source of cash. However, in about half of these households, neither of the partners works off-farm, so they rely entirely on agriculture for their cash-income.

Men in common law relationships directly benefit from their partners’ assumption of household responsibilities. The woman’s financial contribution is more variable. In some cases, men and women maintain separate cash-income streams, and household expenses may or may not be shared equally among partners. There is a fairly high consumption requirement, as these households typically support several dependents, often school-age children. Men in common law relationships are notably younger than other groups, thus this probably represents a transitional stage for young farmers, who may later enter marriage or resume life as a single farmer.

Men tend to have a more extended social network than women, thus they are more apt to use farmer networks to overcome limitations on labor and knowledge. However, these networks tend to form around common affiliations that preclude some of these farmers.

Common law male farmers are constrained primarily by access to land, including difficulties in obtaining a lease. Therefore, these farmers often cultivate land without legal tenure.
Implications for agricultural support system

Although this is a small group, its high dependence on agriculture makes it an important client of the agricultural support system, especially those farmers that do not have access to off-farm employment. Currently, these farmers report a complete separation from the Ministry and could benefit from a range of assistance.

The vast majority of these men grow bananas and plantains, as it is a traditional crop in this region, and farmers are familiar with its cultivation and marketing. All farmers also grow an alternate crop, as a security measure, because plantains are prone to severe losses from disease and wind.

None of these men are registered farmers, probably in direct relation to their lack of land access. This has translated into a total separation between these farmers and the formal agricultural support system. Common law men report no training and have never visited the county Extension office or the head office in Centeno. Overall, these farmers have not received any support from the system and thus do not expect any.

This may indicate a potential difficulty in identifying and working with these farmers, as they may be highly wary of the Ministry. They are not readily visible within the community, as many are not regular churchgoers. The development of a relationship with these farmers will require the assignment of a committed and non-aligned outreach officer to this region, in order to establish their genuine desire and ability to provide assistance. Although improvements in knowledge of production practices and marketing can assist these farmers to improve their short-term cash-income, there can be no security of welfare while these farmers do not have secure land access.
Figure 7-25. Social map of SRD 9

### SOCIAL FACTORS

**Socio-cultural factors**
- Ethnicity: Afro-Trinidadian
- Gender: Male
- Farm gender: Male farmer
- Religion: Mix Christian & Rastafarian

**Socio-economic factors**
- Economic objective: Survival, security
- Land: Squat or lease
- Education: Primary & secondary

**Life-stage factors**
- Age: Young. 2/3 20–35; 1/3 36–50
- Marital status: Common Law
- HH size: 3–4
- Children/Dependents: 1–2

### RELATIVE SIZE OF GROUP

- Percent of men: 5%
- Percent of AT men: 15%
- Percent of AT male farmers: 20%

### EXTERNAL AGRICULTURAL RESOURCES

- Registration: All aware, but none registered.
- Incentives: Not aware, none received.
- Agricultural training: None.
- Centeno: No interaction.
- County extension office: Very limited interaction.
- Other organizations: No MCD courses.
### SRD 9 AFRO-TRINIDADIAN MALE FARMER COMMON LAW

#### OBJECTIVES
- Culture of agriculture
- Care of dependents
- God’s work
- Survival
- Local employment
- Security
- Starting out
- Progress
- National value
- Love of agriculture
- Own boss

#### RESOURCES
- Autonomy
- Off-farm income
- Spouse’s income
- Transportation
- Hired labor
- Leased land
- Housewife labor
- Labor exchange
- Network labor
- Network knowledge
- Experience
- Farm shops
- Markets
- Formal education

#### CONSTRAINTS
- HH instability
- Low income
- Lack of transportation
- Social isolation
- No legal tenure
- Lease delayed
- Limited accessibility
- Soil erosion
- Manual labor
- Sole farmer
- Limited education
- Lack of org outreach

### AGRICULTURAL ACTIVITIES

Agricultural income: Two groups: High & medium. Half get 100% from ag, half get 50% or less; supplement off-farm income.

**Crops:** Bananas & plantains. Secondary: short crops; root crops.

- **What:** Traditional activity
- **What:** Steady crop
- **How:** Diversify agriculture
- **How:** Diversify income
- **What:** High value crop
- **What:** Short crops
- **What:** Export crop
- **How:** Hired labor
- **How:** High / Low inputs
- **How:** Middlemen crops
- **How:** Squatting
- **How:** State forest land
- **How:** Experiment
- **How:** Unsafe chemical use

Figure 7-26. ORCA map of SRD 9
SRD 10: Married Afro-Trinidadian Male Farmers

Social profile

This is one of the largest groups of Afro-Trinidadian men in agriculture (Figure 7-27), with a relatively high reliance on agriculture (Figure 7-28), depending on their access to off-farm work. Although the men are solely responsible for agricultural production, they tend to be more secure than single or common law men, and access a relatively higher level of agricultural resources. As married men, they benefit from their wives’ labor, either off-farm or at home. Both of these possibilities enhance economic security. If the wife works off-farm, the household benefits from the diversity of sources of cash-income. If the woman is not required to work outside the home, that is an indication of a moderate level of security. About half of these men depend on agriculture for the majority of household cash-income. For the other half, the garden is a minor cash-income source, a supplement to their off-farm cash-income.

These men tend to be older than men in common law relationships, which supports the notion of a possible life stage transition, as marriage often occurs at a later stage of a relationship. Also, three quarters of these households belong to the Seventh Day Adventist church, which is a strong proponent of marriage. The households are smaller than common law households, as they typically have only a few (1–2) school-age dependents at home.

Having greater capital resources, these farmers are more likely to afford hired labor, or have access to private transportation. This group also has the highest access to private land of any Afro-Trinidadians, although many still squat or are in some stage of a lease application. They have a strong social network, especially among other men of the same church, and share information and occasionally labor, although this has declined in recent years.
Implications for agricultural support system

As one of the more secure and recognized groups of farmers, this SRD is of relatively low priority for targeted action. However, given the absence of any district Extension officers and the significant involvement of this group in medium to large-scale production, it would behoove the agricultural system to facilitate and enhance their current production.

Most of these farmers cultivate fairly extensive plots of bananas and plantains, on whatever land they can access, regardless of tenure or slope. They rely on traditional methods of cultivation, as well as occasional innovations that get communicated among those in the farmer network. About a third of farmers, especially older farmers, still harvest cocoa, as an existing crop that they have experience with. Younger farmers with access to transportation and market information cultivate short crops, often for specific export or processing markets.

Currently this group has one of the highest levels of interaction with the Ministry of Agriculture of any farmers in Toco. Three-quarters of these farmers are registered. However, the lack of an outreach officer is evident in the fact that none have received agricultural subsidies, despite the fact that all are aware of the program. Likewise, less than a quarter have received any type of agricultural training. Most farmers have visited the county office in Sangre Grande and report a moderate level of satisfaction with the services received.

This is the most recognized group of Afro-Trinidadian farmers, as they tend to participate in formal institutions, such as church networks and community organizations, as well as informal farmer networks. They are experienced and successful farmers, so they need access to up-to-date information on new techniques and markets, as opposed to basic production techniques. Having a diverse resource base, they may be willing and able to try new crops and techniques.
SRD 10 | AFRO-TRINIDADIAN MALE FARMER MARRIED

RELATIVE SIZE OF GROUP
Percent of men: 15%
Percent of AT men: 25%
Percent of AT male farmers: 40%

SOCIAL FACTORS
Socio-cultural factors
Ethnicity: Afro-Trinidadian
Gender: Male
Farm gender: Male farmer
Religion: Christian (75% SDA)

Socio-economic factors
Economic objective: Survival, security, profit
Land: Mix: squat, lease, private
Education: Primary

Life-stage factors
Age: Mid to senior. Half 36–65; half over 65
Marital status: Married
HH size: 3–4
Children/Dependents: 1–2

EXTERNAL AGRICULTURAL RESOURCES
Registration: All are aware and 3/4 are registered.
Incentives: Half are aware, but none have received.
Agricultural training: A quarter have taken agricultural courses.
Centeno: Moderate amount of interaction, with high satisfaction.
County extension office: Most farmers have had some interaction, with average satisfaction.
Other organizations: No MCD courses.

Figure 7-27. Social map of SRD 10
Figure 7-28. ORCA map of SRD 10

SRD 10 AFRO-TRINIDADIAN MALE FARMER MARRIED

OBJECTIVES
- Culture of agriculture
- Family focus
- Care of dependents
- God’s work
- Survival
- Security
- Local employment
- Maximum profit
- Progress
- Future easier
- Senior income
- National value
- Work ethic
- Love of agriculture
- Share
- Own boss

RESOURCES
- Family network
- Marital security
- Autonomy
- Spouse’s income
- Transportation
- Hired labor
- Private land
- Leased land
- Housewife labor
- Labor exchange
- Network labor
- Network knowledge
- Ag orgs
- Experience
- Positive attitude
- Leadership
- Innovative

CONSTRAINTS
- Low income
- Lack of transportation
- No legal tenure
- Lease delayed
- Limited accessibility
- Soil erosion
- Manual labor
- Sole farmer
- Age / Health
- Limited education
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: Two groups: High or Supplemental. More than half of these men get 90–100% of their income from the garden. About a third of these men get only a quarter of their income from the garden, indicating that they and/or their spouse both work off-farm.

Crops: 75% Banana & plantain; 30% cocoa and short crops

- What: Traditional activity
  - What: Steady crop
  - How: Stagger planting
  - What: High value crop
  - What: Short crops

- What: Export crops
  - How: Hired labor
  - How: High inputs
  - How: Squat
  - How: State forest

- How: Short-term crops
  - How: Extensive cultivation
  - How: Network reccs

Figure 7-28. ORCA map of SRD 10
SRD 11: Married and Widower Indo-Trinidadian Male Farmers

Social profile

This is the largest group and embodies the Trinidadian stereotype of a farmer: a married Indo-Trinidadian man, whose wife works at home (Figure 7-29). Not surprisingly, therefore, this group is the most recognized by the agricultural support system. The irony is that this group has the least need of support, as they are primarily dependent on off-farm cash-incomes (Figure 7-30).

These are married men over 50, part of a traditional, older generation of farmers. Regardless of religious affiliation, their wives usually do not work outside of the household, indicating a measure of economic security. Their wives’ labor in the household enables these men to focus on cash-income generation and the accumulation of material wealth. They are nearing or at retirement age, and have limited consumption demands, as few children remain at home. The vast majority of these farmers have access to private family land.

This group has minimal dependence on agriculture, as all the men have non-farm cash-income. Those over 65 receive a pension, and a few also receive a private retirement income. The most vulnerable group is the low-income farmers, whose sole cash-income is their pensions, and therefore relies on agriculture for food security.

Widowers are included in this SRD as they are a very small group (5% of Indo-Trinidadian men) and have a very similar agricultural profile as married male farmers. They derive only a quarter of their cash-income from agriculture and have equivalent access to agricultural services. The main difference is that they no longer have a wife to take care of household chores. However, these responsibilities are often assumed by women in the extended family, such as sisters, in-laws, or daughters.
Implications for agricultural support system

This is a relatively low priority group, as they do not rely heavily on agriculture and currently receive the highest level of agricultural assistance. However, given their love of agriculture, they may increase their cultivation, if provided appropriate assistance.

These farmers cultivate a diversity of crops. About half grow bananas and plantains, as it is a relatively steady crop, with high to medium value. Depending on their personal access to transportation, they may sell to a middleman, carry to market themselves, or even buy from other farmers and resell. Many farmers also cultivate traditional crops such as cocoa, livestock, tree crops and root crops.

These farmers show the benefit of an active local Extension office. They have a relatively high awareness of the agricultural support system, and, while they do not see it as perfect, they are consumers of its products. More then half are registered and have received direct assistance from the Ministry of Agriculture, both in the form of subsidies and agricultural training. Half have interacted with the head office at Centeno, and report high levels of satisfaction. Almost all the farmers have visited the county Extension office in Pt. Fortin and most report being satisfied with their services. This contrasts with their assessment of the outreach officers, who received wildly disparate ratings, reflecting their contention of favoritism. Some farmers reported strong relationships, while other farmers had never been visited.

Overall, these farmers have accessed many of Extension’s services. However, this has not been sufficient to keep them highly involved in agriculture. Future assistance should focus on the development of new programs, with cutting edge information on cultivation and marketing. If policy-makers wish to promote agriculture as a viable alternative to off-farm employment, they will have to address underlying systemic constraints.
SRD INDO- TRINIDADIAN MALE MARRIED & 11 FARMER WIDOWERS

RELATIVE SIZE OF GROUP
Percent of men: 25%
Percent of IT men: 50%
Percent of IT male farmers: 75%

SOCIAL FACTORS
Socio-cultural factors
Ethnicity: Indo-Trinidadian
Gender: Male
Farm gender: Male farmer
Religion: Hindu, Christian, and Muslim

Socio-economic factors
Economic objective: Survival, security, profit
Land: 2/3 private, 1/3 squat
Education: 3/4 primary, 1/4 secondary

Life-stage factors
Age: 100% older than 50
Marital status: Married and widowers
HH size: 3
Children/Dependents: 0–1

EXTERNAL AGRICULTURAL RESOURCES
Registration: All aware; half are registered.
Incentives: All aware; half have received.
Agricultural training: More than half have taken courses.
Centeno: Moderate interaction, with high satisfaction.
County extension office: High interaction, moderate satisfaction. Medium rate of d o.
Other Organizations: No courses from MCD.

Figure 7-29. Social map of SRD 11
Figure 7-30. ORCA map of SRD 11

<table>
<thead>
<tr>
<th>SRD 11</th>
<th>INDO-TRINIDADIAN</th>
<th>MALE FARMER</th>
<th>MARRIED &amp; WIDOWERS</th>
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<tr>
<td><strong>OBJECTIVES</strong></td>
<td><strong>RESOURCES</strong></td>
<td><strong>CONSTRAINTS</strong></td>
<td></td>
</tr>
<tr>
<td>• Culture of agriculture</td>
<td>• Family network</td>
<td>• Lack of transportation</td>
<td></td>
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<tr>
<td>• Family focus</td>
<td>• Marital security</td>
<td>• No legal tenure</td>
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<tr>
<td>• God’s work</td>
<td>• Autonomy</td>
<td>• Limited accessibility</td>
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<tr>
<td>• Security</td>
<td>• Off-farm income</td>
<td>• Manual labor</td>
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<tr>
<td>• Maximum profit</td>
<td>• Transportation</td>
<td>• Sole farmer</td>
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<tr>
<td>• Future easier</td>
<td>• Hired labor</td>
<td>• Age / Health</td>
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<td>• Senior income</td>
<td>• Pension</td>
<td>• Limited education</td>
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<td>• Work ethic</td>
<td>• Retirement income</td>
<td>• Favoritism</td>
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<td>• Love of agriculture</td>
<td>• Private land</td>
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<tr>
<td>• Share</td>
<td>• Housewife labor</td>
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<td>• Recreation</td>
<td>• Network</td>
<td></td>
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<td>• Health</td>
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<tr>
<td>• Own boss</td>
<td>• Experience</td>
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<td></td>
<td>• Ag orgs</td>
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<td></td>
<td>• Farm shops</td>
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<td>• Markets</td>
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<td></td>
<td>• Positive attitude</td>
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**AGRICULTURAL ACTIVITIES**

*Agricultural income: Low.* For 80% of these farmers agriculture is minor, providing less than a quarter of household income.

*Crops:* Mixed. 50% grow banana & plantain, 30% cocoa, livestock, tree crop, and root crops. Lowest level of short crops.

- What: Traditional activity
- What: Steady crop
- What: Eat & sell crop
- How: Stagger planting
- How: Diversify agriculture
- How: Low labor activity
- How: Hired labor
- How: High inputs
- How: Buy & sell
- What: Middlemen crops
- How: Traditional
- How: Network recs
- How: Classes recs
SRD 12: Common-law Afro-Trinidadian Farm Couples

Social profile

This group represents a fairly large proportion of Afro-Trinidadian farmers, both men and women (Figure 7-31). These households have one of the highest levels of dependence on agriculture (Figure 7-32), and tend to be somewhat insecure economically, with high consumption demands.

These are families in their middle years, with a large number of school-age children, thus they have a high resource demand. They are similar to other common law farmers in that they tend to be younger and have more dependents than the equivalent group of married farmers. As a farm couple, they benefit from their combined knowledge and experience in agriculture. Both partners work the land, and children often help after school and on holidays. However, as a common law couple, there is still some household insecurity, and the distribution of responsibilities and benefits may not be equal. Partners may cultivate separate plots, and cash-income may or may not be pooled within the household.

These families are highly dependent on agriculture, with 90% deriving the majority (75–100%) of their cash-income from agriculture. Neither partner has significant sources of off-farm cash-income, so farming is predominantly a matter of survival.

Most (75%) of these farmers are squatters, and access abandoned estates or state forest land for their cultivation. This further increases their insecurity and forces them to often travel great distances to avoid detection.

Many of these households are on the fringes of the village, and the families themselves seem to be somewhat isolated socially. As lower resource farmers, often without ties to formal institutions such as the church, they may have less access to social capital.
Implications for agricultural support system

This is a priority group for the agricultural support system, as these are large, fairly vulnerable households, with a high dependence on agriculture. Currently they have very limited interaction with any agricultural organizations.

The majority (90%) of these farmers cultivate bananas and plantains. They tend to use traditional methods of cultivation and often squat on fairly large pieces of state forest land. About 50% also grow a wide variety of short crops. Like other common law farmers, they have extremely limited interaction with Extension. As 75% of these farmers are squatting, that may account for the fact that only 25% are registered, although all are aware of the program. Very few have heard of the various agricultural subsidies. None have received any agricultural training, and only one had ever been to Centeno. In contrast, about half have visited the county office and report a fairly high level of satisfaction with their services.

It may be a challenge to identify these farmers, as they tend to be less tied in to the formal community networks. Although they may have ties to other farmers, they may not be eager to reveal the extent of their cultivation, as many are squatters. Outreach officers may need to spend an extended period of time in a community in order to develop trust. To reach the most isolated farmers, officers will need to explore back roads and follow footpaths up into the hills.

Up-to-date information on cultivation and marketing of bananas and plantain would be beneficial, as most rely on traditional methods and sell to middlemen. As they have had little exposure to agricultural training, they would benefit from practical information on cultivation systems, especially for non-traditional crops. However, the main hurdle for these farmers will remain their lack of legal land tenure. For this group to take advantage of improvements in cultivation, they must first have land that they can access and safely invest in.
SRD 12  AFRO-TRINIDADIAN  FARM COUPLE  COMMON-LAW

RELATIVE SIZE OF GROUP
Percent of men: 10%
Percent of women: 10%
Percent of AT men: 20%
Percent of AT women: 25%
Percent of AT farm couples: 55%

SOCIAL FACTORS
Socio-cultural factors
Ethnicity: Afro-Trinidadian
Gender: Female & male
Farm gender: Farm couple
Religion: Mix Christian & Rastafarian

Socio-economic factors
Economic objective: Survival, security
Land: 75% Squat. 25% private
Education: Primary & secondary with age

Life-stage factors
Age: All ages, 75% 36–50
Marital status: Common law
HH size: 6
Children/Dependents: 4

EXTERNAL AGRICULTURAL RESOURCES
Registration: All are aware, but only a quarter are registered.
Incentives: A quarter are aware but none have received.
Agricultural training: None have taken courses.
Centeno: Very low interaction
County extension office: Med contact, with fairly high satisfaction. No outreach officer.
Other organizations: Half of women have taken MCD courses.

Figure 7-31. Social map of SRD 12
SRD 12 AFRO-TRINIDADIAN FARM COUPLE COMMON-LAW

OBJECTIVES
- Culture of agriculture
- God’s work
- Education of children
- Care of dependents
- HH income
- HH food
- Survival
- Local Employment
- Security
- Max profit
- Starting out
- Progress
- National value
- Love of agriculture
- Own boss

RESOURCES
- Family network
- Autonomy
- Couple labor
- Family labor
- Spouse’s knowledge
- Experience
- Positive attitude

CONSTRAINTS
- HH instability
- Dependents
- Low income
- Lack of transportation
- Social isolation
- No legal tenure
- Limited accessibility
- Soil erosion
- Manual labor
- Limited education
- Outside network
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: High. 90% of farm couples depend on agriculture for the majority (75–100%) of household income.
Crops: 90% cultivate banana & plantain, 50% short crops
- What: Traditional activity
- What: Steady crop
- How: Stagger planting
- How: Couple diversify
- How: Low inputs
- What: Middlemen crops
- How: Squatting
- How: State forest land
- How: Hillside crops
- What: Short-term crops
- How: Extensive cultivation
- How: Traditional
- How: Experiment
- How: Unsafe chemical use

Figure 7-32. ORCA map of SRD 12
SRD 13: Married Afro-Trinidadian Farm Couples

Social profile

This is a small to medium size group, comprising 15% of Afro-Trinidadian men and 20% of Afro-Trinidadian women in agriculture, slightly smaller than common law farm couples (Figure 7-33). Overall, married couples are less reliant than common law couples on agriculture, depending on their access to off-farm employment (Figure 7-34). Only half of married couples (as opposed to 90% of common law couples) depend on agriculture for the majority of their income. For the other half, agriculture is a minor (25%) source of household cash-income, a supplement to the off-farm cash-income of one or both partners. This cash-income diversity makes married couples more economically secure.

These couples benefit from both the security of their relationship as well as their shared responsibility for agricultural production. Their spouse is their most important source of agricultural knowledge, and their combined labor allows for a more intensive operation. Off-farm cash-income can be funneled into higher levels of agricultural inputs, including hired labor. Although women still bear the majority of the household responsibility, the men typically provide fairly consistent financial support. This combined effort provides the overall household with enhanced security and an ability to progress together as a family.

Married Afro-Trinidadian couples are slightly older than common law couples and tend to have smaller families, with fewer dependents. This may reflect life stage changes, as many common law couples often get married later in life. Many of these couples are involved with the church, especially the Seventh Day Adventist church, which provides a strong network of support for members and generally promotes an agricultural lifestyle.
Implications for agricultural support system

This is a medium to low priority target group, as these households tend to be less vulnerable than single or common law households, or sole farmers. However, for the 50% of households that depend primarily on agriculture, agricultural assistance could make an immediate impact on household well-being.

Over half (60%) of these farmers grow bananas and plantains. Notably, almost 50% also cultivate cocoa, whereas no common law farm couples report harvesting this crop. This is probably related to the higher incidence of leased land by married couples, as many of the leases are on former cocoa estates that have mature trees. This may also reflect farmers’ age, as cocoa is a traditional crop of the older generation, and half of these farmers are over 50, whereas 90% of common law couples are younger than 50. A lesser number grow short crops and tree crops.

Married couples are slightly more likely than common law couples to access the services of the Ministry of Agriculture. Half are registered, as opposed to a quarter of common law couples, however none have received incentives. A third have received agricultural training, mostly through the Farmer Training Center at Centeno, which they rate highly. Although most farmers have accessed the county Extension office, they report low to medium satisfaction with their services. Lacking a district officer, 50% rely on farm shops for information.

This group is fairly easy to identify, as a significant number are registered. Many are part of the church and rely on the associated farmer networks as a primary source of information and labor. These farmers have not received much training, but their shared experience has created a strong foundation of proven cultivation techniques. New programs should be developed based on observation of current practices and identification of areas that might be unsound or easily improved.
Figure 7-33. Social map of SRD 13

<table>
<thead>
<tr>
<th>SRD 13</th>
<th>AFRO-TRINIDADIAN FARM COUPLE MARRIED</th>
</tr>
</thead>
</table>

**RELATIVE SIZE OF GROUP**
- Percent of men: 5%
- Percent of women: 10%
- Percent of AT men: 15%
- Percent of AT women: 20%
- Percent of AT couple farmers: 45%

**SOCIAL FACTORS**
- **Socio-cultural factors**
  - Ethnicity: Afro-Trinidadian
  - Gender: Female & male
  - Farm gender: Farm couple
  - Religion: Christian, 2/3 SDA
- **Socio-economic factors**
  - Economic objective: Survival, security, profit
  - Land: 50% lease, 35% squat, 15% private.
  - Education: Primary & secondary, related to age.
- **Life-stage factors**
  - Age: Mid to senior. Half 36–50, half over 50.
  - Marital status: Married.
  - HH size: 4–5
  - Children/Dependents: 2–3

**EXTERNAL AGRICULTURAL RESOURCES**
- Registration: All are aware, and half are registered.
- Incentives: Half are aware, but none have received.
- Agricultural training: No women and only a few men have taken courses.
- Centeno: High interaction, with high satisfaction.
- County extension office: High interaction with moderate satisfaction. No EO.
- Other organizations: Most women have taken courses with MCD.
SRD 13 AFRO-TRINIDADIAN FARM COUPLE MARRIED

OBJECTIVES
- Culture of agriculture
- Family focus
- Education of children
- Care of dependents
- HH income
- HH food
- Survival
- Local employment
- Security
- Starting out
- Progress
- Future easier
- National value
- Love of agriculture
- Own boss

RESOURCES
- Family network
- Marital security
- Off-farm income
- Spouse’s income
- Transportation
- Private land
- Leased land
- Couple labor
- Family labor
- Labor exchange
- Network labor
- Network – knowledge
- Spouse’s knowledge
- Experience
- Farm shop

CONSTRAINTS
- Dependents
- Low income
- Lack of transportation
- No legal tenure
- Lease delayed
- Limited accessibility
- Soil erosion
- Manual labor
- Limited education
- Lack of org outreach

AGRICULTURAL ACTIVITIES
Agricultural income: Two groups: Half depend on agriculture for 75–100% of their household income. The other half use agriculture as a minor (25%) supplement to their off-farm income.

Crops: 60% cultivate bananas & plantains. 50% cultivate cocoa. Also short & tree crops.
- What: Traditional activity
- How: Stagger planting
- How: Couple diversify
- How: Hired income
- How: High inputs
- How: Buy & sell
- What: Existing crops
- How: Squat
- What: Short-term crops
- How: Extensive cultivation
- How: Network recs
- How: Unsafe chemical use

Figure 7-34. ORCA map of SRD 13
SRD 14: Married Indo-Trinidadian Farm Couples

Social profile

This is one of the main groups of Indo-Trinidadian farmers, representing the largest (45%) percent of women and the second largest (35%) percent of men (Figure 7-35). These are primarily older, traditional farmers, 75% over 50, with men and women working as a “team” together. Some of these couples have always farmed together, out of economic necessity as well as tradition. In other cases, the men are approaching or in retirement and are returning to agriculture as they leave their off-farm work. The fact that the women work in the garden may indicate that these are lower resource households.

Like SRD 13, these households benefit from their security of their relationships as well as the combined agricultural labor and knowledge of both partners. Being older than Afro-Trinidadian farm couples, they have no or very few children at home, which decreases their consumption requirement but also their available labor. As an older group, their primary constraints have to do with failing health and strength. However, many senior farmers continue to do heavy tasks and work long days, until taken out of the field all together by illness. Three quarters of these farmers have access to private land, giving them a substantial advantage over younger Indo-Trinidadians and almost all Afro-Trinidadians.

A third of this group, mostly the younger couples, are dependent on agriculture for the majority of their cash-income (Figure 7-36). For seniors (who receive a pension) and for those with off-farm employment, agriculture is only a minor (25%) cash-income source, and is used primarily for direct consumption to ensure food security.
Implications for agricultural support system

This group is of medium priority, depending on their level of involvement in agriculture. For the third of farmers that rely on agriculture for the majority of their cash-income, assistance could have a significant impact on household well-being. However, given that this group has a fairly high level of interaction with the Ministry, additional or improved services would be necessary to make improvements.

Half of these couples cultivate short crops, especially dasheen bush, for sale in the retail market. Short crops may be primarily the woman’s responsibility, or they may reflect the couple’s joint effort. Almost as many farmers rely on bananas and plantains, as a traditional crop that can be sold wholesale to middlemen. A third of farmers cultivate root crops, as a storable staple food with a limited labor requirement.

This group has a relatively strong connection with the agricultural support system. Over half the farmers are registered, and a third have received agricultural subsidies and agricultural training. Half of the farmers have interacted with the head office at Centeno and report a fairly high level of satisfaction. All the farmers have visited the county Extension office, and report varying levels of satisfaction, from excellent to poor. The district officers likewise received widely disparate ratings, perhaps reflecting farmers’ contention of favoritism, in that certain farmers had excellent relationships while others had basically no contact.

It is crucial to expand beyond the currently “recognized farmers” to counter the perception of favoritism. Efforts should be made to contact farmers with different social, religious, and familial affiliations. New programs should be developed, presenting up-to-date techniques, as many of these farmers have already accessed Extension’s basic production courses. Farmers’ own knowledge should be used as a resource by facilitating visits between farmers.
<table>
<thead>
<tr>
<th>SRD</th>
<th>INDO-TRINIDADIAN</th>
<th>FARM COUPLE</th>
<th>MARRIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RELATIVE SIZE OF GROUP**
- Percent of men: 15%
- Percent of women: 25%
- Percent of IT men: 35%
- Percent of IT women: 45%
- Percent of IT farm couples: 100%

**SOCIAL FACTORS**

**Socio-cultural factors**
- Ethnicity: Indo-Trinidadian
- Gender: Female & male
- Farm gender: Farm couple
- Religion: Hindu (2/3) & Christian (1/3)

**Socio-economic factors**
- Economic objective: Security, survival, profit
- Land: 75% private, 25% squat
- Education: Primary or partial primary

**Life-stage factors**
- Age: 75% over 50
- Marital status: Married
- HH size: 3–4
- Children/Dependents: 0–1

**EXTERNAL AGRICULTURAL RESOURCES**

- Registration: All are aware; more than half are registered.
- Incentives: All are aware; a third have received.
- Agricultural training: One third of men have taken courses, but very few women (1/5).
- Centeno: Moderate interaction; fairly high satisfaction.
- County extension office: High interaction, med satisfaction. EO high interaction, low satisfaction.
- Other organizations: 1/3 of wives have taken MCD courses.

Figure 7-35. Social map of SRD 14
Figure 7-36. ORCA map of SRD 14
Step 7: Identification of Priority SRDs

Delineation of social recommendation domains provides a wealth of information that can assist the agricultural support system to respond appropriately to specific target groups. However, it is unrealistic and indeed unnecessary to provide equal assistance to all SRDs at a given point in time. Given resource limitations, it is more effective to identify priority target groups based on a needs assessment. For my study, priority level is based on three indicators of need:

- Household vulnerability
- Dependence on agriculture
- Current access to agricultural services

Indicators are derived from a number of key variables (Table 7-1). Household vulnerability is a composite indicator reflecting 1) marital status, 2) number of dependents, 3) land tenure, and 4) economic objective level. Vulnerability is ranked as low, medium, or high based on the typical farm household in each SRD.

Dependence on agriculture is indicated by the percentage of household cash-income derived from agriculture. Farmers generating 75% or more of household cash-income from agriculture are classified as highly dependent, while 25% or less of cash-income from agriculture is classified as low dependence.

Access to Extension services is also a composite indicator, based on farmers’ use of the various services of the Ministry of Agriculture, as well as the group’s visibility to agricultural organizations. Visibility primarily reflects the percentage of registered farmers but also incorporates cultural and gender biases. Access is rated as none, low, medium, or high based on the typical farmer within a particular SRD.
Table 7-1. Key variables and indicators for identification of priority target groups.

<table>
<thead>
<tr>
<th>SRD</th>
<th>Ethnicity</th>
<th>Farm gender</th>
<th>Marital status</th>
<th>Dependen-tants</th>
<th>Land</th>
<th>Econ. Object.</th>
<th>Vulner-a-bility</th>
<th>Ag cash income</th>
<th>Min. of Ag.</th>
<th>Visib-i-ity</th>
<th>Ag svce access</th>
<th>Priority level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AT</td>
<td>FF</td>
<td>S</td>
<td>1–2</td>
<td>S / L</td>
<td>Survival</td>
<td>High</td>
<td>H / L</td>
<td>Low</td>
<td>None</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>2</td>
<td>IT</td>
<td>FF</td>
<td>S</td>
<td>0–2</td>
<td>P / L</td>
<td>Survival</td>
<td>High</td>
<td>Low</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>AT</td>
<td>FF</td>
<td>CL</td>
<td>4 plus</td>
<td>S</td>
<td>Survival</td>
<td>High</td>
<td>Medium</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>AT</td>
<td>FF</td>
<td>M</td>
<td>2–3</td>
<td>L</td>
<td>S / S</td>
<td>Med</td>
<td>Low</td>
<td>L-M</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>IT</td>
<td>FF</td>
<td>M</td>
<td>2–3</td>
<td>P (S)</td>
<td>S / S</td>
<td>Med</td>
<td>H / L</td>
<td>L –M</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>6</td>
<td>AT &amp;IT</td>
<td>FF</td>
<td>W</td>
<td>0–1</td>
<td>L / P</td>
<td>Survival</td>
<td>High</td>
<td>H (L)</td>
<td>Med</td>
<td>L / M</td>
<td>L-M</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>AT</td>
<td>MF</td>
<td>S</td>
<td>0</td>
<td>S / L</td>
<td>S / S</td>
<td>Med</td>
<td>H (L)</td>
<td>L-M</td>
<td>L-M</td>
<td>L-M</td>
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</tr>
<tr>
<td>8</td>
<td>IT</td>
<td>MF</td>
<td>S</td>
<td>0</td>
<td>S (P)</td>
<td>S / S</td>
<td>Med</td>
<td>H (L)</td>
<td>M-H</td>
<td>High</td>
<td>M-H</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>AT</td>
<td>MF</td>
<td>CL</td>
<td>1–2</td>
<td>S (L)</td>
<td>S / S</td>
<td>High</td>
<td>H / M</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>AT</td>
<td>MF</td>
<td>M</td>
<td>1–2</td>
<td>S / L / P</td>
<td>S / S</td>
<td>L-M</td>
<td>H / L</td>
<td>M-H</td>
<td>M-H</td>
<td>M-H</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>IT</td>
<td>MF</td>
<td>M &amp; W</td>
<td>0–1</td>
<td>P (S)</td>
<td>Security</td>
<td>L-M</td>
<td>Low</td>
<td>M- H</td>
<td>M-H</td>
<td>M-H</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>AT</td>
<td>FC</td>
<td>CL</td>
<td>4</td>
<td>S</td>
<td>Survival</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>None</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>AT</td>
<td>FC</td>
<td>M</td>
<td>2–3</td>
<td>L / S</td>
<td>S / S</td>
<td>L-M</td>
<td>H / L</td>
<td>M-H</td>
<td>Med</td>
<td>M-H</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>IT</td>
<td>FC</td>
<td>M</td>
<td>0–1</td>
<td>P (S)</td>
<td>S / S</td>
<td>L-M</td>
<td>L (H)</td>
<td>M-H</td>
<td>M-H</td>
<td>M-H</td>
<td>4</td>
</tr>
</tbody>
</table>
Table key:

- Priority indicators are in red font.
- If there are two distinct groups of equal size in a particular SRD, they are indicated by a slash / . If only a third to a quarter of farmers have a different profile, this is indicated by parentheses ( ) around the minor group.
- Ethnicity: AT = Afro-Trinidadian, IT = Indo-Trinidadian
- Farm gender: FF = female farmer, MF = male farmer, FC = farm couple
- Marital status key: S = single, CL = common law, M = married, W = widow
- Dependents: Typical number of dependents in the household
- Land: S=squat, L=lease, P = private
- Economic objective: Survival, security, profit maximization
- Vulnerability: H = high, M = medium, L = low
- Ag cash-income: High (H) = 75% or more; Med (M) = 26-74%; Low (L) = 25% or less
- Ministry of Agriculture: H = high, M = medium, L = low, or None
- Visibility: H = high, M = medium, L = low, or None
- Agricultural service access: H = high, M = medium, L = low, or None
Indicators were evaluated on a priority scale, with high vulnerability, high dependence on agriculture, and low access to agricultural services as the top priority levels. The overall priority level of an SRD was based on the total number of high priority indicators, as described in the following 4 categories:

- **Top priority (3 high priority indicators):** Highly vulnerable, a medium to high dependence on agriculture, and low access to agricultural services.
- **Second priority (2 high priority indicators):** Either vulnerability or agricultural dependence are high and access to agricultural services is low.
- **Third priority (1 high priority indicator):** Either vulnerability or agricultural dependence are high, or access to agricultural services is low.
- **Low priority (no high priority indicators):** Low dependence on agriculture, medium-low vulnerability, and medium-high access to agricultural services.

**Top Priority Groups**

Five social recommendation domains were categorized as top priority (Figure 7-37). These farmers were not only highly dependent on agriculture and economically vulnerable but also had very limited access to the agricultural support system.

- SRD 1: Single Afro-Trinidadian female farmers
- SRD 3: Common law Afro-Trinidadian female farmers
- SRD 6: Widows, Afro- and Indo-Trinidadian female farmers
- SRD 9: Common law Afro-Trinidadian male farmers
- SRD 12: Common law Afro-Trinidadian farm couples

The prevalence of female farmers in this group is due to gender-based constraints and low access to resources. Afro-Trinidadians are disproportionately represented here due to the limited Extension services in Toco. Common-law farmers are more evident in this group because of their household resource insecurity combined with responsibility for dependents and extremely low access to external agricultural services.
Figure 7-37. Priority levels of the social recommendation domains
Second Priority Groups

Three SRDs fall into the second priority level, based on two priority indicators. These farmers have a low access to agricultural services, and are either highly vulnerable or highly dependent on agriculture.

- SRD 2: Single Indo-Trinidadian female farmers
- SRD 5: Married Indo-Trinidadian female farmers
- SRD 7: Single Afro-Trinidadian male farmers

Indo-Trinidadian female farmers show up in this group due to cultural gender constraints. Despite the active Extension office in Cedros, Indo-Trinidadian women who farm alone (both single and married) are less socially visible and report low levels of access to agricultural services. In addition, single women are highly vulnerable. While married women are less vulnerable, half are highly dependent on agriculture for household cash-income. Likewise, single Afro-Trinidadian men have limited access to agricultural services yet most generate the majority of their income from agriculture.

Third Priority Groups

Four SRDs fall into the third priority level. These farmers typically exhibit only one priority indicator, either a high dependence on agriculture, a high vulnerability, or limited access to agricultural services.

- SRD 4: Married Afro-Trinidadian female farmers
- SRD 8: Single Indo-Trinidadian male farmers
- SRD 10: Married Afro-Trinidadian male farmers
- SRD 13: Married Afro-Trinidadian farm couple

Married Afro-Trinidadians fall into this group for different reasons, depending on gender. Female farmers do not rely heavily on agriculture and are relatively secure in
their partner’s support, however, as sole female farmers, they have limited recognition by and interaction with the agricultural support system. In contrast, Afro-Trinidadian male farmers and farm couples report moderate usage of agricultural services, despite the lack of Extension outreach in Toco. They belong to this category because half rely primarily on agriculture for their livelihood. Likewise, single Indo-Trinidadian men belong to this group because a majority are highly dependent on agriculture.

**Low Priority Groups**

Two SRDs comprise the lowest priority groups, as they are neither highly dependent on agriculture nor very vulnerable. Ironically these same farmers have some of the best access to agricultural services.

- **SRD 11**: Married and widower Indo-Trinidadian male farmers
- **SRD 14**: Married Indo-Trinidadian farm couples

As men and Indo-Trinidadians, this group represents the stereotypical Trinidadian farmers. As such, they are highly recognized and served by the agricultural support system. However, given a variety of economic alternatives in Cedros, this group has a relatively low involvement in agriculture.

**Summary**

This chapter discussed the fourteen social recommendation domains that were identified in the Toco and Cedros regions.

Identification and validation of the social recommendation domains was a multi-step process, involving analysis of qualitative data from 20 primary contact farmers and quantitative data from 142 surveyed farmers. The most influential social factors were identified as farm gender, marital status, and ethnicity.
The development of household life cycles helped to further validate the SRDs, as it illustrated the movement of farmers through SRDs during their life times. Four models were created, one for each gender and ethnicity combination. The models visually highlighted the phases in which agriculture was most, as well as least, important.

Once the SRDs were identified, it was possible to create a social and agricultural profile of each group. These are presented in great detail in Step 6, followed by a brief summary and implications for the agricultural support system. The SRDs were then ranked by priority for assistance, based on household vulnerability, dependence on agriculture, and current access to services.

The next chapter presents recommendations for an action plan, Step 8 in the ORCA framework.
CHAPTER 8
CONCLUSIONS AND RECOMMENDATIONS

Introduction

This study identified the major gender and social variables that influence agricultural strategies in two ethnically distinct communities in Trinidad. Through a combination of qualitative and quantitative methods, I compiled an extensive database of farmers’ objectives, resources, constraints, and activities. Relating those to social variables, I distinguished 14 distinct social recommendation domains (SRDs) based on ethnicity, farm gender, and marital status. Based on an assessment of their vulnerability, dependence on agriculture, and current access to agricultural services, I categorized the SRDs into 4 priority levels.

The main conclusions of my study are presented below, in conjunction with each objective. Recommendations are formulated based on the findings and are organized into suggestions to assist the agricultural support system to 1) recognize and 2) respond to the diverse farming community. These conclusions and recommendations form the basis of an action plan, following Step 8 in the ORCA framework, as described in Chapter 4. Ultimately, an action plan must be created by the delivering institution, based on its objectives and capabilities. Here I offer some suggestions that may begin the discussion.

Although for brevity I refer to “male and female farmers” and “Afro- and Indo-Trinidadian farmers” in the following section, the conclusions actually refer specifically to the farmers of the Toco and Cedros study area. While some findings may
be applicable to other regions in Trinidad, such inferences should be made based on the reader’s own knowledge of those areas.

**Conclusions**

**Agricultural Participation**

The following conclusions are related to Objective 1:

*Document the diverse social and gender groups that are involved in agriculture in two ethnically distinct communities in Trinidad.*

1. The farming community in Trinidad is marked by its social and gender diversity. Both Afro- and Indo-Trinidian men and women are involved in agricultural activities, both as sole farmers and in farm couples.

2. Social diversity in the farming community includes 1) socio-cultural variables of ethnicity, religion, and gender 2) socio-economic variables of economic objective, land access, and education, and 3) life-stage variables of age, marital status, and household size.

**Women in agriculture**

3. In both the Toco and Cedros study regions, I found 2–5% of women involved in agriculture. Two percent of women are solely responsible for agricultural production activities, while another 3% of women share agricultural responsibility with a male partner. Because I interviewed most of the women I could identify in agriculture, this figure should be close to reality.

4. This figure is higher than that recorded by the agricultural census, and reflects an overall tendency for women to be invisible to the agricultural support system.

5. Many factors combine to make agriculture an important livelihood activity for women: cultural acceptability, proximity to the household, availability of land, economic necessity, and sole responsibility for the household.

6. Female participation in agriculture is more determined by marital status and cultural norms than by economic alternatives.

7. Agriculture provides a culturally acceptable income-generating activity for Indo-Trinidian women on their own land.

8. Agriculture is a survival strategy for a lot of women, visible in the high participation rates of widows and female-headed households. Because agriculture is a marginal activity, it is mainly the marginal populations that are involved in it.
9. Responsibility for dependents has one of the greatest influences on women’s lives, including their agricultural objectives and constraints. As a result, women tend to be most involved in agriculture during the years they have children in school or at home, between the ages of 36–65.

10. Half of both Afro- and Indo-Trinidadian women in agriculture are “female farmers” with sole agricultural responsibility.

11. Married Indo-Trinidadian women between the ages of 20—50 tend to be solely responsible for agricultural activities, since their husbands work off-farm.

12. Half of both Afro- and Indo-Trinidadian women in agriculture are part of a “farm couple” and share agricultural responsibility with a male partner.

Men in agriculture

13. I found 6% of men in Toco involved in agriculture, and 3% in Cedros. This is similar to the findings of the agricultural census. However, the actual figure in Toco is probably double that, as I estimate that I interviewed less than half the men in agriculture.

14. Alternative economic opportunities directly affect male participation in agriculture.

15. Given fewer economic alternatives, Afro-Trinidadian men in Toco are more dependent on agriculture than Indo-Trinidadian men in Cedros.

16. As economic alternatives for men in Cedros have increased, they have left agriculture, resulting in a “missing generation” (age 35–50) of Indo-Trinidadian men in agriculture.

17. As a result, Indo-Trinidadian farmers are older than Afro-Trinidadian farmers: two thirds of Indo-Trinidadian men in agriculture are over 50 years of age, while two-thirds of Afro-Trinidadian men are under 50 years of age.

18. Men are more likely than women to have the resources to engage in agricultural pursuits on their own: Two-thirds of both Afro- and Indo-Trinidadian men in agriculture are “male farmers” with sole agricultural responsibility.

19. One-third of both Afro- and Indo-Trinidadian men in agriculture are part of a “farm couple” and share agricultural responsibility with a female partner.
Socially Based Agricultural Strategies

The following conclusions relate to Objective 2:

*Identify the social variables that most influence agricultural decision-making, and show how these factors impact the ultimate selection of an agricultural strategy.*

Social variables

1. A farmer’s social identity affects their objectives, resources, constraints, and activities, which, in turn, influences both their choice of agricultural activity and their management strategy.

2. Farmers with similar social factors can be grouped into social recommendation domains: groups of farmers with similar social and agricultural profiles, for whom the same agricultural recommendation would be appropriate.

3. In the Toco and Cedros study regions, the most influential social variables are farm gender, ethnicity, and marital status.

4. Taken in combination, these three factors delineate 14 social recommendation domains with distinctive agricultural strategies.

5. Farmers move into different social recommendation domains over their lifetime as they change marital status or farm gender configuration.

6. Indo-Trinidadian men and women follow fairly predictable life cycles based on the transition from single life to married, while Afro-Trinidadians tend to make more frequent transitions in relationships and agricultural responsibility.

7. Farm gender affects agricultural resources, such that farm couples tend to have higher resources than sole farmers, both male and female.

8. Marital status affects economic and social resources, such that married couples tend to have higher resources than common law or single farmers.

9. Ethnicity interacts with gender to create specific objectives, resources, and constraints for Afro- and Indo-Trinidadians. This is especially true for women, as women’s activities are more influenced by cultural norms than men.

Objectives

10. The reasons an individual participates in agriculture (their “agricultural objectives”) are related to their ethnicity, gender, religion, socio-economic level, life-stage, and life style.
11. An individual’s objectives will change over their lifetime, as their socio-economic and / or life-stage variables change.

12. Although most Trinidadians associate agriculture with Indo-Trinidadians, farmers of both ethnic groups expressed a cultural connection to agriculture.

13. Women’s objectives are highly related to their responsibility for dependents and the household.

14. For Indo-Trinidadian women, agriculture also provides a way to overcome cultural constraints on mobility and cash-income.

15. Farmers of all religions expressed a sense of satisfaction in “doing God’s work.”

16. Depending on their economic resource level, farmers pursue agriculture in such a way as to meet their objectives, be it survival, security, or profit maximization.

17. Farmers’ objectives change with their life-stage, however agriculture is particularly important during periods of insecurity, when agriculture provides a survival strategy.

18. Agriculture satisfies many lifestyle objectives, however the most frequently mentioned was simply a love of agriculture as a way of life.

Resources

19. Farmers have access to a variety of resources, depending on their individual social identity. These can be classed into the following groups: ethnicity, capital, land, labor, knowledge, and attitude.

20. While Indo-Trinidadians draw a lot of support from strong family and marital ties, Afro-Trinidadians tend to be more individualistic and rely on maternal ties for support.

21. Although capital is limiting for most farmers in these regions, access to off-farm cash-income provides an important resource and may enable farmers to purchase two other key resources: personal transportation and hired labor.

22. Many Indo-Trinidadians have access to private land, while Afro-Trinidadians typically cultivate either leased land or squat.

23. As the fallback resource, labor is very important, and farmers rely on a variety of social networks to increase their labor pool.

24. Farmers’ access to and use of knowledge resources are highly determined by their ethnicity and farm gender.
25. Access to knowledge is highly related to inclusion in social networks. Those who are socially excluded from networks are “truly poor” in social capital.

26. The Extension Division of the Ministry of Agriculture is the greatest organizational source of agricultural knowledge, although it has largely failed to reach Toco farmers due to the lack of any assigned district officers in this region.

27. Farmers’ attitudes are a potential resource, that, if tapped, could facilitate the development of a vibrant agricultural sector and stronger linkages between farmers and the agricultural support system.

Constraints

28. The constraints that limit farmers’ productivity can be grouped into the following categories: ethnicity, gender, land, labor, and knowledge.

29. Ethnic norms place different constraints on women. While Afro-Trinidadian women may contend with household instability, Indo-Trinidadian women may be confined within the household.

30. Both Afro- and Indo-Trinidadian women face gender-based constraints, such as less social visibility and responsibility for dependents and reproduction activities.

31. Most farmers face capital constraints that limit their agricultural inputs and thus their productivity. Lack of transportation is one of the most limiting capital constraints.

32. Secure legal access to land is a constraint for many farmers, especially Afro-Trinidadians and women.

33. Labor constraints place the ultimate limits on productivity. Women farmers are additionally constrained by their responsibility for the household.

34. Knowledge is constrained by social isolation, favoritism, lack of organizational outreach, and inappropriate. Farmers who are not tied in to social networks or organizational outreach have limited access to potentially beneficial knowledge.

Activities

35. Farmers make sophisticated decisions as to the type and level of agricultural activity in order to meet their objectives, given their resources and constraints.

36. The most influential objectives are related to the culture of agriculture, household food, household cash-income, survival, security, maximum profit, and senior cash-income.
37. The most influential resources and constraints are mobility, capital, transportation, land, labor, and knowledge. Each of these, in its abundance or its scarcity, affects the decision as to type of activity and how to manage it.

38. Both women and men are involved in the whole range of activities, including those typically considered too strenuous for women, such as the cultivation of bananas and plantains.

39. However, male farmers, female farmers, and farm couples tend to select a different mix of activities and/or use different management strategies in doing the same activity.

40. Therefore, if the agricultural support system only focuses on the overall trends in a region, they may dismiss crops that are crucial for certain target groups.

41. Afro-Trinidadian female farmers tend to have the least access to resources and thus select crops that are “easy,” even if they are less profitable, such as cocoa and tree crops.

42. Indo-Trinidadian female farmers select crops that meet their household objectives while accommodating their mobility constraints, such as short crops, floriculture and the rearing of livestock around the home.

43. Male farmers primarily cultivate banana and plantain, regardless of ethnicity or farm gender.

44. Farm couples have the most diverse activity profile and have the highest cultivation of short crops.

45. Dependence on agriculture is markedly different in the two communities, due to regional differences in economic alternatives.

46. Agriculture is an important livelihood activity in Toco: the majority of farmers are still highly dependent on agriculture, deriving more than 75% of household cash-income from agriculture.

47. Agriculture is mostly a supplemental livelihood activity in Cedros: most farmers earn less than 25% of household cash-income from agriculture.

48. Female farmers in the two regions are less distinct; in both Toco and Cedros about a third are highly dependent on agriculture for household cash-income, while half use it as a supplement.

Access to the Agricultural Support System

The following conclusions relate to Objective 3:
Assess the current access to and satisfaction with the agricultural support system by diverse groups of farmers in these two communities.

1. In its focus on industrial development, the government of Trinidad has marginalized the agricultural sector and views it primarily as a welfare activity.

2. If the government does not recognize agriculture as a viable industry and increase systemic supports (land, access roads, transportation), any changes at the organizational or community scale will continue to be constrained in their impact by larger constraints.

3. Farmers are aware of the marginalization of agriculture and feel neglected by the government.

4. Farmers persist in agriculture out of both necessity and a love of what they do. In local parlance, farmers have “belly,” an unshakable tenacity, despite the lack of a strong support system.

5. The Ministry of Agriculture has the potential to serve as a direct resource for farmers through its Extension Division, particularly the county offices.

6. The dynamic county office and active outreach officers in Pt. Fortin have increased farmers’ awareness and use of the Ministry’s agricultural resources, providing knowledge, services, and links with other organizations.

7. In Toco, the lack of an outreach officer to any of the districts has left the majority of farmers unaware of the various agricultural resources and programs. This has decreased their use of these resources.

8. Certain groups of farmers are not being adequately identified and served by the agricultural support system.

9. In Cedros, farmer access to agricultural outreach is inconsistent and prone to favoritism, with some farmers receiving frequent visits while others are completely left out.

10. Extension tends to rely on a few “recognized farmers” to engage the community. Therefore, resources tend to flow preferentially to farmers within the recognized farmer’s network.

11. The composite picture of the “average” farmer obscures crucial social differences in farming systems that determine the suitability of an agricultural program.

12. Many of the services offered by the agricultural support system are not appropriate to the reality of many of the farmer groups.
13. Therefore, it is crucial to tailor agricultural policies and programs to the specific realities of the target group.

14. Overall, women tend to have much lower access than men to agricultural support services. Fewer women are registered, receive subsidies, or access agricultural training.

15. Common law farmers have less interaction than married farmers with the agricultural support system.

16. Recent movements towards a more participatory extension system highlight both the opportunity and the necessity for greater recognition of farmers’ social diversity.

17. The participatory approach of the farmers’ field school is being well received by farmers.

18. Numerous governmental and non-governmental agricultural organizations exist in Trinidad and have valuable resources for farmers. However, many of these organizations are not effectively reaching these remote rural communities.

19. Farmers possess many attributes and attitudes that would facilitate linkages between agricultural organizations and rural communities.

Priority Target Groups

The following conclusions relate to Objective 4:

*Identify priority farmer groups for enhanced engagement with the agricultural support system.*

1. Identification of social recommendation domains can lead to improved service to specific target groups, ultimately benefiting the overall farming community.

2. The ORCA framework is an effective way of identifying social recommendation domains and selecting priority target groups.

3. The highest priority groups are those that are the most vulnerable, the most dependent on agriculture, and have the lowest current access to resources.

4. In Toco and Cedros, the highest priority groups are
   a. SRD 1: single Afro-Trinidadian female farmers
   b. SRD 3: Common law Afro-Trinidadian female farmers
   c. SRD 6: Widow female farmers, both Afro- and Indo-Trinidadian
   d. SRD 9: Common law Afro-Trinidadian male farmers
e. SRD 12: Common law Afro-Trinidadian farm couples

5. In general, sole farmers, Afro-Trinidadians in Toco, common-law farmers, and female farmers have more high priority indicators.

6. High priority groups are:
   a. SRD 2: Single Indo-Trinidadian female farmers
   b. SRD 5: Married Indo-Trinidadian female farmers
   c. SRD 7: Single Afro-Trinidadian male farmers

**Recommendations for Practice**

The findings and conclusions of my study should not be surprising to the majority of Trinidadians, as they are based on social distinctions that most people are aware of. However, the influence of these social factors on agricultural decision-making needs greater recognition. Therefore, in the following section I recommend ways for the agricultural support system to 1) recognize socially and agriculturally distinct farming groups, and 2) respond with targeted programs and policies.

**Recognize Gender and Social Diversity**

1. Recognize that a farmer is also a human, with a gender and social identity that affects their choice and management of agricultural activities.

2. Make a conscious effort to look for socially diverse farmers of both genders. Identify social recommendation domains and look for individual farmers through appropriate networks.

3. Use life cycle models to identify stages at which agriculture is most – and least-important to different groups.

4. Target assistance to groups at those stages in which they are most reliant on agriculture.

5. Identify the stages that have low participation in agriculture, and seek to remove constraints and improve incentives.

6. Do not rely solely on one or two “recognized” farmers. Be aware of the different networks (culture, gender, or religion-based) within a community, and tap into each of those networks. In addition, consciously look for those not in any networks.
7. Be persistent in efforts to identify women and other marginalized groups. Finding those who will benefit the most will often take the most time, both to hear about them and to reach their houses and gardens.

8. Wander and observe! There are whole communities you will miss if you do not take time to explore.

9. Maintain continuity in an area by keeping one or two outreach officers over an extended period of time, to establish trust.

10. Assign officers of different ethnicities and genders to overlapping districts, to help initiate and develop relations with a diverse clientele. Then introduce “different” officers (of the opposite gender / ethnicity), to build new understanding / bridges.

11. Ensure that new officers are gradually introduced to farmers by outgoing officers. Establish and pass on a comprehensive database of farmers from officer to officer.

12. To counter feelings of favoritism, make sure that the farmers contacted represent the social and gender diversity within a region.

13. Look for Indo-Trinidadian women in agriculture; they exist! Many Trinidadians said that Indian women simply do not farm alone.

**Respond with Targeted Assistance**

1. Assign district officers to the Toco region and maintain a consistent presence.

2. Focus on the identified high priority groups, and develop Extension programs based on their specific ORCA.

3. Use the SRD profiles as a starting point to help design an appropriate response.

4. Identify the factors which make a technology suitable for specific target groups. A technology must be desirable (meet the farmer’s objectives) and feasible (given his/her resources and constraints).

5. Recognizing these factors, seek to develop or adopt technology appropriate for specific target groups.

6. Talk to farmers to ensure that interventions are effective.

7. Analyze differential impacts of policies on different social recommendation domains.

8. Develop policies and programs that remove identified constraints, improve access to limiting resources, and provide incentives that meet farmers’ objectives.
**Improve communication from organizations to farmers**

9. Use Table 6-1 to identify existing channels of information and what channels need improvement.

10. Train all outreach officers in participatory communication skills and dialogue. Learn to listen to diverse farmers and be humble. Administrators must support officers’ use of these methods and allow them time and resources for such activities.

11. Identify the main networks in the community, and ensure that information is dispersed to all these networks. To reach women, do not rely on general farmer networks, but look for specifically female networks.

12. Switch venues to avoid favoring one ethnicity, religion, or gender.

13. Look for alternatives to individual contact, to reach more farmers. Host group meetings and ask farmers who attend to provide their contact information; later go out and meet those farmers at home or in the garden.

14. Develop Internet stations. As many agricultural organizations have websites, Internet access has the potential to expose farmers to a much broader pool of knowledge resources.

15. Continue and expand the use of the farmer-field school. Given the use of such participatory techniques, the necessity and the opportunity to work with and listen to diverse farmers is ever more important.

**Improve communication from farmers to organizations**

16. Respect farmers as rational decision makers. Discover why they select certain strategies and attempt to help them either work within those realities or change limiting structures.

17. Make use of farmers’ experiences and innovations. Train Extension to listen to farmers’ observations.

18. Teach farmers to implement relatively simple experiments and encourage the development of community trial plots.

19. Work with a farmer facilitator: place more control for the relationship in the hands of the community.

20. Facilitate formation of farmer groups to increase their voice.

21. Offer opportunities for leadership training, especially to under-represented groups.
22. Facilitate adult basic education and communication skills to help farmers express themselves more fluently.

23. Use video as a way for farmers to directly express their concerns to agricultural support personnel.

**Improve communication from farmer to farmer**

24. Use farmers’ knowledge as a resource. Arrange visits to farmers who have similar activities. This may result in immediate knowledge exchange as well as foster long-term development of more inclusive networks.

25. Use diverse farmers as resource people to ensure the design of appropriate communication strategies for different groups.

26. Use more group meetings. Facilitate group synergy to respond to local constraints.

27. Bring together diverse farmers. Create opportunities to remove ignorance and facilitate friendships.

**Seek to remove major constraints**

28. Labor. Increase access to the subsidy program for power tools. The Ministry’s subsidy for these tools is important and beneficial, as evidenced by the high percentage of farmers who use this in the south.

29. Mobility. Come to farmers who can’t come to you. Set up a stall at the marketplace or other places women congregate. Arrange group meetings for neighboring women in one of their households. Facilitate transportation to activities. Allow space for children at activities.

30. Land. Farmers need improved land access, as a prerequisite to other improvements in productive capacity. There is a hypocrisy in improving the productive capacity of farmers who are illegally cultivating land.

31. Reposition agriculture as an industry of strategic importance and facilitate the development of the small farm sector. This would improve rural welfare as well as national productivity.

**Recommendations for Further Research**

**Recommended Research in Trinidad**

While my study sheds some light on the social and agricultural diversity in Trinidad, it also brings into focus many related questions, that offer further potential to
improve the relationship between the agricultural support system and the farming community. To create an action plan for enhanced engagement with the top priority farmer groups, numerous questions need to be addressed. What are the primary constraints of these groups? What factors account for their exclusion from the agricultural support system? How can their access be improved? Are the existing programs and policies appropriate for their realities? If not, what factors does the agricultural support system need to consider when designing future policy, research, and/or extension programs?

To determine whether these findings are applicable to other parts of Trinidad, it is necessary to determine whether these same social recommendation domains pertain. Are these same social and gender groups evident in other parts of Trinidad, or are the two study regions uniquely shaped by their relative isolation? Are women’s lives as culturally determined in other regions? In areas with more economic alternatives, does participation in agriculture occur during the same life stages? Is the “missing generation” of Indo-Trinidadian men evident in other parts of Trinidad? If not, what factors have kept them involved in agriculture?

To improve communication to a broader portion of the community and counter perceptions of favoritism, it is important to further investigate the existing social networks. What are the primary affiliations in these communities? Who belongs to which networks? Along what paths do information and resources travel through the community? Where are there blockages in the flow of knowledge? Where are there intersections? Who is socially excluded from these networks?
To improve the ability of the agricultural support system to effectively serve such a
diverse clientele, the various institutions should investigate their own linkages with each
other. Do they use each other as resources, or do they view each other as competitors? Do
they coordinate their agendas and programs so as to prevent duplication and ensure that
they address the highest need clientele? Do they have frequent and substantive
communication with each other? How do they maintain communication with farmers?

Recommendations for the ORCA Framework

Beyond its utility in my research, the ORCA framework is applicable to many other
farming communities worldwide. The ORCA framework is a powerful tool for
deciphering social diversity and analyzing its relation to agricultural decision-making.
Many farming communities are marked by their diversity and would benefit from an
agricultural support system that recognizes their distinct realities and responds with
targeted assistance.

Benefits of the ORCA framework

The ORCA framework has the potential to help the agricultural support system
recognize the influential role of social factors and respond appropriately to the different
realities of distinct social groups. Social factors have often not been considered in a
comprehensive way, perhaps due to their inherent complexity and the lack of an easily
understandable framework. Therefore, this framework attempts to provide an accessible
tool for practical application. The aim is not to create prescriptive solutions, but to
increase awareness of social factors and their impact.

Extension and research often assume that all farmers can use the same technology.
However, no one package or strategy can meet the needs of all farmers, differentiated as
they are by social, economic, and agronomic variables. In the immortal words of
Chambers, diverse farmers “do not need a package of practices but a basket of choices” (1997, p. 70) so that they can select those that fit their individual objectives, resources and constraints.

The ORCA framework can help extension, researchers, and policymakers to 1) identify farmers’ social recommendation domains, 2) select relevant information, 3) present information effectively and 4) develop appropriate technologies and policies.

**Extension.** Extension organizations can use the ORCA framework:

- To identify the social recommendation domains in a specific area, and locate individual farmers that belong to each group;
- To identify the most vulnerable or under-served recommendation domains, and target them for priority programming;
- To select appropriate information and services for specific target groups; and
- To present material in such a way that it is accessible to the target group (considerations include location, time, educational level, etc).

**Research.** Research and development organizations can use the ORCA framework:

- To identify the factors which make a technology suitable for specific target groups. A technology must be desirable (meet the farmer’s objectives) and feasible (given his/her resources and constraints).
- Recognizing these factors, to develop appropriate technology for target groups.

**Policy.** Policy-makers can use the ORCA framework:

- To identify priority target groups
- To develop policies and programs for those groups, that remove identified constraints, improves access to limiting resources, and provide incentives that meet farmers’ objectives.
- To analyze differential impacts of policies on different social recommendation domains.
Summary

My study documented the influence of gender and social identity on the selection of agricultural strategies in two ethnically distinct communities in Trinidad. Using the ORCA framework, I identified 14 social recommendation domains based on farm gender, ethnicity, and marital status. Each of these groups is characterized by a unique combination of objectives, resources and constraints that leads to a distinct profile of agricultural activities.

If the agricultural support system wishes to engage effectively with a greater percentage of the farming community, it should recognize and respond with targeted assistance to these socially and agriculturally diverse groups.
APPENDIX A
QUESTION GUIDES

Individual Farmer Question Guide

Agricultural Activities

1. What agricultural activities do you engage in?
2. Why did you select those crops?
5. Do men and women do different tasks?
6. How do you market your produce?
7. What are the main constraints you face?
8. How has your farm changed over the years?
9. What would you like to see in the future on your farm?

Agricultural Information

1. How did you learn about farming?
2. How do you decide what to plant / when to plant / how much to plant, etc?
3. If you have a problem with your crop / livestock, etc. where do you go for help?
4. Do you belong to any agricultural / farmers’ organizations? Why or why not?
5. Do you exchange information or labor with other farmers?
6. Have you had any formal agricultural training
7. How many years of schooling have you had?
8. Do you ever attend extension training? Why or why not?
9. Has an extension officer ever visited your farm? If so, did you find it helpful?
10. Are you a registered farmer?
11. Would anything make their services more helpful?

Household Profile

1. What is the composition (number, age, sex, relationship) of your household?
2. How much household labor is available? Who does which agricultural tasks?
3. How much land does the household have?
4. What is your tenure status?
5. What other livelihood activities do you engage in?
6. Have your livelihood activities changed? How and why?
7. Are there any community organizations that you are actively involved in?
Community Profile

1. What percentage of your community is involved in agriculture? Is that number increasing or decreasing?
2. What are the main crops grown in your community?
3. Are many women involved in agriculture? Do they grow different crops than men?
4. Do women face any different challenges in agriculture?
5. What changes have occurred in the community?
6. What other livelihood activities are important in your community?
Farmer Focus Group Question Guide

General Questioning Route

1. What is the current relationship between the farmers in your community and agricultural organizations?
2. What other organizations are important in your community? How would you describe their relationship with your community?
3. How can we improve the relationship between farmers and agricultural organizations?
4. Optional: What information or services would you most help you?
5. Optional: What are your thoughts on a “rainmaker” / farmer facilitator?

Facilitator Notes For Activities And Discussion

Question 1:

How do you feel about your relationship with the agricultural organizations both within your village and outside. What do you like? What needs improvement?

Activity 1: Drawing

Take 5 minutes to draw a picture that illustrates that relationship. These aren’t works of art; these are supposed to be fast and fun; feel free to use stick people.

*Participants draw and then each person discusses their drawing.*

*Facilitator lists characteristics of relationship on flip chart as participant describes, then has participant draw star next to “good” and checkmark next to “needs improvement.”*

Question 2:

What organizations are active in your village? How important are they to you as regards quality of service and amount of contact?

Activity 2: Venn Diagram

*As a large group, participants call out names of organizations, while facilitator writes them on a flip chart. Option: If there are enough men and women, participants can...*
be divided into groups of men and women, so that each group does the activity separately.

The facilitator has prepared paper circles of different sizes and a flip chart with the name of the village in the center. S/he explains that the size of the circle reflects the importance of the organization to the village, while the distance from the village represents the amount of contact. A farmer is then asked to continue the facilitation. The group decides by consensus what size of circle best represents each organization. The same approach is then used to decide where to paste the circles in proximity to their village. Discussion follows to determine why some organizations are more effective in reaching community members. If men and women did this activity separately, conclude by having each group present its diagram to the other group, and discuss why there may be differences.

**Question 3:**

What practical ideas do you have to improve the existing relationship? How can community members or organizations create and sustain a better interaction?

*The previous discussion leads directly to farmers’ suggestions. These are listed on a flip chart, under community action and organizational action.*

**Question 4: (Optional)**

What agricultural information or services would you most help you? What could local organizations provide and what should outside organizations provide?

*This is the perfect opportunity to do a needs assessment with farmers. This information could be directly funneled to organizations.*

**Question 5: (Optional)**
What do you think of selecting a local farmer to formally represent your concerns, ask for assistance and coordinate with outside organizations? Do you feel such a farmer facilitator (the “rainmaker”) would increase community access to organizational resources? Would this work in your community? What are the strengths and weaknesses of this model?

**Activity 5: Storytelling**

Facilitator presents a farmer proposed idea to improve community-organizational relations. The idea is presented in story form, as the rainmaker, and the facilitator illustrates the concept with a drawing. Farmers then give feedback regarding the idea, and specifically address what might make it appropriate (or inappropriate) in their community.
IRB Approval

DATE: 15-Jan-2003

TO: Ms. Kelly Payson
    PO Box 110540
    Campus

FROM: C. Michael Levy, Ph.D., Chair
      University of Florida
      Institutional Review Board 02

SUBJECT: Approval of Protocol #2003-U-31

TITLE: Engaging Women: Facilitating Information and Resource Flow to Small-Scale Female Farmers. A Case Study of Two Ethnically Distinct Communities in Trinidad

SPONSOR: University of Florida Presidential Fellowship; Fulbright Fellowship

I am pleased to advise you that the University of Florida Institutional Review Board has recommended approval of this protocol. Based on its review, the UIRB determined that this research presents no more than minimal risk to participants. Given your protocol, it is essential that you obtain signed documentation of informed consent from each participant. Enclosed is the dated, IRB-approved informed consent to be used when recruiting participants for the research.

If you wish to make any changes to this protocol, including the need to increase the number of participants authorized, you must disclose your plans before you implement them so that the Board can assess their impact on your protocol. In addition, you must report to the Board any unexpected complications that effect your participants.

If you have not completed this protocol by 15-Jan-2004, please telephone our office (392-0433), and we will discuss the renewal process with you. It is important that you keep your Department Chair informed about the status of this research protocol.

CML:dl
APPENDIX C
FARMER SURVEY

HOUSEHOLD INFORMATION

1. What is your town of residence? __ Matelot __ Grande Riviere __ Montevideo __ Sans Souci __ L’Anse Noire __ Toco __ Cumana __ Granville __ Coromandel __ Pt. Coco __ Chatham

2. What percentage of people in your village are involved in agriculture ____ full-time ____ part-time? __ 10 years ago? ____ FT ____ PT.

3. What are the other main sources of cash-income in your village? ____________

4. Who is the main agricultural producer in your family? (Farm gender)
   __ Man __ Woman __ Other family_____ __ Other HH member_____

5. Who is the main cash-income earner in your family?
   __ Man __ Woman __ Other family_____ __ Other household

6. How many people are in your household? ____ AM ____ AF ____ JM ____ JF

7. What other family members participate in agriculture? ___________(FT/ PT)

8. What percentage of HH cash-income is derived from agriculture? ____ %

9. How many acres of land do you farm? ____
   If more than one parcel, how many acres in each? ____ _____ _____

10. What is the tenure arrangement on your land?
    ____ Privately owned (family)
    ____ Rented from private
    ____ Leased from state
    ____ In process
    ____ Squatting

11. Whose name is on the Lease / Title?
    __ Man
    __ Woman
    __ Parent
    __ Other relative
CROPPING INFORMATION

1. Name of crop ________ Primary ________ Secondary ________


3. Why did you select that crop?
   ___ high price  ___ low labor  ___ experienced with/ tradition
   ___ food source  ___ interplanting  ___ shade crop  ___ year-round production
   ___ ready market  ___ other farmers planting  ___ other____

4. What is your estimated annual production? ____ per _____

5. What price do you receive? ______

6. What percent of your harvest is used for household consumption? ____ %
   for the market? ____ %

7. Where do you make your sales? ___ middleman ______ local ________
   ___ retail ________ ___ export ________

8. What is your primary production challenge? _________________________

9. What would you most like information on / assistance with? ___ Production
   ___ Post-harvest  ___ Marketing

10. How did you first learn to grow that crop? ___ Family  ___ Other farmers
     ___ Formal Course ___ Own Experimentation

11. What other sources of information have you used in the production of that crop?
    ___ Spouse  ___ Other family ______  ___ Other farmers  ___ Extension
    ___ Other organization ________  ___ Agri shop
    ___ Radio ________ ___ Reading

12. How many days / week do you spend on that crop? ______

13. How many hours /day do you spend on that crop? ______

FARMER INFORMATION

1. In agriculture, are you the ___Primary decision-maker ___Secondary decision-maker ____Shared decisions

2. What is your age?
   __< 20  __20-35  __35-50  __50-65  __>65

3. What is your sex?
   __Female  __Male

4. What is your marital status?
   ___Single  ___Married  ___Common Law  ___Divorced  ___Widowed
   __Separated

5. What is your ethnicity?
   __Indo-Trinidadian  __Afro-Trinidadian  ___Mixed  __Other :_______

6. What is your religion?
   __Christian  __Hindu  __Muslim  __Other__________

7. Have you attended ___primary  ___secondary  or  ___tertiary education ?

8. How important do you feel agriculture is to your family? (1=not at all,  5=totally dependent) ______

9. Why is it important? (Rank 1st and 2nd most important).
   __Food  ___cash-income (%)__  __security  ___tradition  ___collateral
   __other
10. What are your sources of cash-income?

<table>
<thead>
<tr>
<th>Source</th>
<th>part/full-time</th>
<th>% Income</th>
<th>5 yrs ago</th>
<th>10 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ government</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ tourism</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>__ marketing</td>
<td></td>
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<tr>
<td>__ hunting</td>
<td></td>
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<tr>
<td>__ fishing</td>
<td></td>
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<tr>
<td>__ oil &amp; gas</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>__ transportation</td>
<td></td>
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<tr>
<td>__ pension</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ private retirement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ family support (remittances)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ HH income generating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What are your household responsibilities? Hours daily /weekly Shared?

<table>
<thead>
<tr>
<th>Responsibility</th>
<th>Hours</th>
<th>daily /weekly</th>
<th>Shared</th>
</tr>
</thead>
<tbody>
<tr>
<td>__ Cooking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ Cleaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ Childcare</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ Washing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ HH income generating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>__ Other</td>
<td></td>
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</tr>
</tbody>
</table>
MINISTRY SERVICES

The Ministry has various services available to you as a farmer. Which are you aware of and use?

<table>
<thead>
<tr>
<th>Service</th>
<th>Aware of</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Why / why not?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Incentives</td>
<td></td>
<td></td>
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<tr>
<td>• For what?</td>
<td></td>
<td></td>
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<tr>
<td>3. Farm Visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Frequency, Requested, Drop-in, Impact</td>
<td></td>
<td></td>
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<tr>
<td>4. Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Name, Site, Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. YAPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Planting material</td>
<td></td>
<td></td>
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<tr>
<td>8. Other</td>
<td></td>
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</tr>
<tr>
<td>9. How satisfied are you with your relationship with the district extension officers? (1=not at all, 2=not very, 3=sometimes, 4=usually, 5=extremely)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do you have any recommendations to improve any of the Ministry’s services?
____________________________________________________________
TRAINING

1. Have you ever participated in training courses (ag or otherwise) _____ in last year? _____ In last 5 years?

If yes, continue to #2, if no, go to # 10

2. What was the subject of the course? _____

3. What year was the course offered? _____

4. What was the duration of the course? _____

5. Did the course cost anything? _____

6. Was a stipend offered? _______

7. Who offered the course? _______

8. Please evaluate the impact of the course:
   ____ Did you enjoy the course?
   ____ Did you ever use the information?
   ____ Did you have good results?
   ____ Would you take another course?

9. What agricultural subjects would you be most interested in? ____________________________

10. What other subjects? ____________________________

11. Why didn’t you participate?
    ____ None offered
    ____ Too far
    ____ Too expensive
    ____ Wrong time
    ____ Not interested in subject
    ____ Partner attended
    ____ HH responsibilities
    ____ Other

12. Have you ever participated in a special program for farmers such as Youth Window or IICA’s women’s groups (please indicate which)? ________________

How do you evaluate that program? ________________
INFORMATION SOURCES

Have you ever used the services of the following organizations:

<table>
<thead>
<tr>
<th></th>
<th>What type of service?</th>
<th>What impact?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1=none, 5=high)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry of Agriculture</td>
<td></td>
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<tr>
<td>FTC</td>
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<tr>
<td>County Office</td>
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<tr>
<td>Research</td>
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<tr>
<td>Fisheries Division</td>
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<tr>
<td>Forestry Division</td>
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<tr>
<td>Ministry of Community Development</td>
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<tr>
<td>Ministry of Gender</td>
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<td>Pt. Coco Coop</td>
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<td>Toco Foundation</td>
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<td>SFC</td>
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<td>NAMDEVCO</td>
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<td>UWI</td>
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<td>ECIAF</td>
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<td>CARDI</td>
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<td>CNIRD</td>
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<tr>
<td>Chemical Company</td>
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<td>IICA</td>
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<td>FAO</td>
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<tr>
<td>Other</td>
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</tr>
<tr>
<td>Question</td>
<td>Response</td>
<td></td>
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<tr>
<td>2. How much have you benefited from being a member?</td>
<td>1=not, 5=totally</td>
<td></td>
</tr>
<tr>
<td>12. Why did you first get involved?</td>
<td></td>
<td></td>
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<tr>
<td>13. Why do you stay / leave?</td>
<td></td>
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<tr>
<td>14. Would you be interested in joining a farmer’s / woman’s group?</td>
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<tr>
<td>15. Why or why not?</td>
<td></td>
<td></td>
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<tr>
<td>16. What would attract you to join?</td>
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<td></td>
</tr>
</tbody>
</table>
APPENDIX D
SYSTEMS DIAGRAMS

Format of Diagrams

1. The household is represented by a box at the center of each system. Household members are disaggregated by gender and age (adults on top half, dependents on bottom half).
2. The relative importance of any enterprise (as perceived by the farmer) is denoted by the size of the box.
3. Boxes representing agricultural activities are on the right side of the diagram.
4. Boxes denoting off-farm activities are on the left side of the diagram.
5. Markets are represented by boxes at the top of the diagram.
6. Organizations with whom the household has relationships are symbolized by boxes at the bottom of the diagram.
7. Resource flows (labor, capital, food, information) are indicated by arrows. These are disaggregated by gender. Dotted lines represent part-time or infrequent activities.

---

66 Modified from the “systems diagrams” of McDowell and Hildebrand, 1986, and “enterprise systems diagrams of Spring, Sullivan, Litow and Barham, 2000.”
Figure D-1. Systems diagram of Indo-Trinidadian farm couple in Cedros, cocoa farmers
Figure D-2. Systems diagram of Afro-Trinidadian farm couple in Toco, cocoa farmers
APPENDIX E
SAMPLE ORCA PROFILE

Afro-Trinidadian female farmer, married

Proposed SRD: 3: Married Afro-Trinidadian female farmer

Social Profile
Farm gender: Female farmer
Ethnicity: Afro-Trinidadian
Religion: Christian (Very active in Seventh Day Adventist church)
Marital Status: Married (Husband infirm, therefore she is head of household and
Age: 65 Plus (73)
HH size: 6
Dependents: 5 (Ill husband, one son (drug addict) and 3 grandchildren)
Education: Partial primary (can only “sign name”)
Economic objective: Survival (Very low- she is sole supporter)
Cash Access: Hers, but very limited
Land: Lease from state in process

Objectives (tied to life stage)
Previously, as young married woman and mother
• Female head of household as husband “liked to drink”
• Education of children
• HH food.
• HH cash-income

Currently, as senior woman
• Female head of household as husband blind and infirm
• Care of dependents
• HH food
• HH cash-income
• “God’s work”
• Survival
• Progress (currently to build her house; so started focusing more on cash crops)
• Senior cash-income
• Love of agriculture
• Share
• Health

Resources
• Maternal support / Remittances
• Pension
• Leased land (in process)
• Accessible land (flat and near road, building house on it)
• Experience
• Network (Church: spiritual / personal fulfillment)
• Orgs (Courses from Min Comm Dev)
• Knowledge – farm shop in SG

Constraints
• Female invisibility
• Household labor
• Dependents (husband, son, 3 grands)
• Female head of household
• Male alcohol
• Low cash-income (Very poor – survives only on pension)
• Lack of transportation (No vehicle and traveling is difficult)
• Social isolation house (locals “forgot her” for a few weeks when I was looking for women.
• Lease delayed
• Labor – Age / health (73, although still amazingly healthy ands active; finding it “too hard” to climb hill to old house)
• Labor – Sole farmer
• Limited education: taken out of school once could sign name (illiterate) Lots of crops that have failed/not thrived; she doesn’t know why… lack of scientific understanding of ag.
• Outside network (“don’t like to help each other; don’t ask”)
• Lack of org outreach (One course, otherwise no contact with Ministry)

Activities / Strategies
• What: Diverse food garden (gets lots of HH food from garden)
• What: Preferred foods (prefers yam to rice; plants what she likes to eat)
• What: Small livestock (keeps fowl for eggs)
• What: Keep cocoa
• How: Glean (Harvests even a few cocoa pods after main harvest)
• What: Low labor crop (peppers are easier - not so hard to “tote
• What: easy activity (grows fig not plantain, easier to grow)
• How: Low inputs
• What: Local market crops (grows crops to sell to local hotels and neighbors)
• Middleman crops (sells fig to middleman)
• How: Process crop (sells cocoa dry)
• How: Less post-harvest (doesn’t sweat cocoa, just dries)
• How: Male land prep (tries to hire when can afford)
• How: Low fertility (doesn’t know why crops are smaller now)
Unsolicited letter received January 27, 2004 from a concerned farmer in Montevideo, Toco when they heard about my research. Text copied as written:

To: Kelly, Agriculture Student
From: A Farmer

Kelly,

These are some of the issues and needs we as farmers in the area are facing.

1. Land. We would like the government to make more land available for farming. Most of the farmers here are squatting on private lands. We have no lands of our own.
2. Better Access Roads. The access roads are in a deplorable state and it is a real problem to get out our produce. As far as 2 miles, 2 3/4, 1 1/2, 1, or even 1/2 mile, to carry your produce on your head that distance you can imagine the pain and stress we have to go through to get our produce out.
3. Visits. We need agriculture officers to visit us on a regular basis and to give us information on soil, planting, seedlings, care of crops, harvesting and marketing, and to be taught in modern technology. We also need a data base, also on dairy farming and poultry farming. We also need export markets for our produce.
4. Information. Information does not reach us. We do not or does not know what the government has for farmers or to assist us in farming. Such as 1) we cannot get any loans because we have no deed for the land. There is no grant available for us, or in the case of loss or damage by thieves, floods, landslides, or otherwise like diseases, etc.
5. Security. We need better security for our crops and livestock. When farmers are absent, non-farmers are harvesting our crops and livestock for themselves and that discourages many farmers to stop farming. We need this problem to be taken very seriously.

There are many abandoned cocoa and coffee estates and other unoccupied land that needs to be utilized. If given the proper incentives and training there can be more production in farming and a better way of life in our community. The north coast is the most productive area in the country. It supplies about 3/4 of the nation with its food, and still the farmers are being neglected by the government and the Ministry of Agriculture.

We would like the government and the Ministry of Agriculture to look into our situation and to address it as soon as possible and we should be given first hand information as available to the Ministry. I should mention that we does not only deal with cocoa and coffee but in bananas, plantains, tomatoes, sweet pepper, hot pepper, pimento peppers,
cabbages, lettuce, bhodi, pumpkin, okroes, christophe, tania, dasheen, cassava, yams, and citrus. If something is not being done to help the farmers in this area, it would be a thing of the past. Many farmers are turning to the illegal trade. They are planting acres of marijuana and saying that it is better for them.

I love farming, and I hope and pray that the government be more considerate to us farmers and understand our woes and cries. We have no one to help or rescue we. Thanks to you Kelly, God send you.

Thank you Kelly.

A Farmer
APPENDIX G
GLOSSARY

Abandoned land – Agricultural land that is no longer cultivated.

Agricultural holder - (as defined by Trinidad’s Central Statistical Office for the 2004 Census) “The civil person or legal entity with the economic and technical initiative, who makes major decisions regarding resource use and exercises management control over the agricultural holding operation.”

Agricultural holding- (as defined by Trinidad’s Central Statistical Office for the 2004 Census) “An economic unit of agricultural production producing primarily for sale under single management comprising all livestock and poultry kept, and all land being used either wholly or partly for agricultural production purposes, without regard to title, legal form, size or location.”

AT – Afro-Trinidadian

Babadeen – *Passiflora quadrangularis*. Giant grandadilla. A fruit that grows on a vine, used for making drinks.

Bagasse – The high fiber, high carbon “trash” that is left after the juice is extracted from sugarcane.

Bhaigan – *Solanum melongena*. Local name for eggplant, also called melangene.

Bhaji - *Amaranthus dubius*, Local name for a plant of the amaranth family, also called spinach.

Bhodi – *Vigna spp*. Local name for long green beans.

Calaloo – a mixture of bhaji and coconut milk, either served as a vegetable or a soup.


Centeno – the Central Experiment Station of the Ministry of Agriculture. It is located in north central Trinidad, fairly close to Port of Spain. The Farmer’s Training Center is housed here as part of the Extension Division, as well as the Research Division.

Christophene – *Sechium edule*. Known as chayote in Latin America. A squash like vegetable that grow on a vine.
Cocoa – *Theobroma cacao*. The fruit of the cocoa tree, used to make chocolate.

Dahee – A traditional Indo-Trinidadian yogurt.

Dancing – A part of the post-harvest preparation of cocoa, in which the cocoa is vigorously stirred and rubbed in order to remove the pulpy exterior from the cocoa seed.

Dasheen – *Colocasia esculenta*. Also known as taro. A starchy root crop.

Dasheen bush – The leaves of the dasheen plant, eaten as a vegetable.

District officer (DO) – Frontline extension officers who are assigned to do farmer outreach in a specific district.

ECIAF - Eastern Caribbean Institute of Agriculture and Forestry. Previously a 2 year diploma school, now a 3 year associate’s degree.

Fig – Local term for banana (*Musa spp.*)

Fine crops – Also known as short crops, this is the local term for vegetables and other annuals that produce quickly and require a relatively high amount of tending, as opposed to the root crops or tree crops that do not bear for many months, and can be left in the interim to tend to themselves.

Head of household- The head of household is the person with primary decision-making power over and responsibility for the household.

HH – household

IT – Indo-Trinidadian

LDC – Lesser-developed countries

Lime - Social interaction, primarily for the purpose of recreation. Liming encompasses any activity, from sitting and talking on one’s front porch to drinking in a bar to a group trip to the beach, of which the primary purpose is social.

LNG - Liquified Natural Gas, one of the major natural resource industries in Trinidad.

MCD - Ministry of Community Development

Melangene – Local term for eggplant, also known as bhaigan.

Mold – Local expression meaning to hill up the dirt around a plant.

Nutmeg – *Myristica fragrans*. A tree crop producing the nutmeg spice.
Pewa - *Bactris gasipaes*. The local name for the fruit of the pejibaye palm.

Pigeon pea – *Cajanus cajan*. A bushy legume, grown as both an annual and a perennial.

Plantain – *Musa X paradisiacal*. A large cousin of the banana, eaten as a starch.

Registration - The farmer’s registration program is a service of the Ministry of Agriculture. To register, farmers need to show some type of legal land access. A registered farmer is eligible for certain government subsidies.

SDA - Seventh Day Adventist, one of several Christian churches in Trinidad. A high proportion of Toco farmers came from this church.

Seasoning – The ubiquitous mix of herbs used in local cuisine and commonly sold together in a bundle, including thyme, scallion, shadon beni and parsley.

Shadon beni – *Eryngium foetidum*. An herb in the cilantro family, one of the most common seasonings in Trinidadian cuisine.


St. David – The county in the northeast corner of Trinidad, encompassing the Toco study area.

St. Patrick – The county in the southwest corner of Trinidad, encompassing the Cedros study area.

Sweating – A part of the post-harvest preparation of cocoa, in which the wet cocoa seeds are covered and allowed to ferment for several days, in order to improve the flavor of the cocoa.

TT$ - Trinidad and Tobago dollar, the local unit of currency. The exchange rate has been tied to the US dollar since the 1990s, so that it stays around TT$6 to US$1.

UWI - University of the West Indies
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Tourism and Industrial Development Company of Trinidad and Tobago, Ltd. TIDCO. (2002). http://tidco.co.tt


BIOGRAPHICAL SKETCH

Kelly Payson-Roopchand started life as a suburbanite in Concord, Massachusetts. However, her love for agriculture manifested itself by the first grade, when she moved to Maine and discovered the farm next door. This passion led her through a B.S in agroecology at the University of Hawai‘i at Hilo, and an M.S in international agricultural development at the University of California at Davis. Having studied in South Africa, Jamaica, and Trinidad, she plans to combine her commitment to international agriculture with the establishment of an organic farm in Maine.