

Availability of Information

In promoting the use of the Project's new recommendations, the technical assistance agents also told the farmers how to apply them; what they would cost to use; the expected increases in production and net income from their use in good, average, and poor years; and the importance of using each practice at the recommended level. It was assumed that the farmers (particularly those who provide the leadership for the community) would require full knowledge of the new technology to make accurate appraisals.

In examining the extent to which information on the Project recommendations has been disseminated throughout the Puebla area, it is important to distinguish between: (a) a simple understanding of what the recommendations are and (b) full knowledge of how to use them and of the expected returns in terms of increased production and net income.

Relevant data on farmers' knowledge of the recommendations was collected in 1973, in a study of farmers not on credit lists in five communities where groups of farmers organized by the Puebla Project had functioned for 3 or 4 years. Of the 29 farmers interviewed, 26 (90 percent) had heard of the maize recommendations of the Puebla Project. Only 15 (52 percent) of the 29 farmers, however, were convinced that the use of the maize recommendations would result in higher yields.

These data suggest that by 1973 most of the farmers in the Puebla area had heard of the new maize recommendations. A much smaller percentage, however, perhaps around 50 percent, had received information sufficient to persuade them that the new technology would increase yields. The low level of use of one or more of the three main practices on 75 percent of the parcels in 1972 (Table 9.5) suggests that perhaps 25 percent or less of the farmers understood the more complex aspects of the new technology, such as the importance of using *all* of the recommended practices at the recommended levels. Clearly, the Project recommendations have not been completely understood by the farmers, thus preventing their full realization of the potential benefits of the new technology.

Adequacy of the New Technology

Another interpretation can be made regarding the 48 percent of the farmers in the 1973 survey who were not convinced of the usefulness of Project recommendations: that rather than an indication of the lack of adequate information, it could be that the new technology is, in fact, not superior to the traditional practices. Certainly, lack of adequate technology has been a notable weakness of many programs seeking to improve agricultural production in rainfed areas.

The adequacy of the maize recommendations of the Puebla Project was examined in some detail in Chapter 3. Table 3.11 shows that producing systems 1.1.1, 2.1.1, and 3 (which account for 53 percent of the cultivated area in

maize) had estimated average maize yields using the traditional technology of: 2.05 ton/ha (1.1.1); 2.15 ton/ha (2.1.1); and 2.56 ton/ha (3). The estimated average yields using the Project recommendations for unlimited capital were 3.80 ton/ha (1.1.1); 3.87 ton/ha (2.1.1); and 3.64 ton/ha (3). For the entire Project area, the estimated average yields were 2.05 ton/ha using traditional practices and 3.13 ton/ha using the Project recommendations for unlimited capital.

The estimated net incomes from using the traditional and Puebla Project technologies, expressed in kg/ha of maize, are shown in Table 3.13. The estimated net incomes using the two Project recommendations are larger than the estimated net incomes using the traditional practices in each of the 16 producing systems. For the entire area, the estimated net incomes using the Project recommendations were 51 percent greater for limited capital and 95 percent greater for unlimited capital, as compared to the estimated net incomes using the traditional practices.

Another indication of the adequacy of the Project recommendations is that most farmers, after they have used the new technology, apparently continue to use it in the following years. This is a reasonable conclusion to draw from the findings that both the level of use of the recommendations and the average maize yield in the area have increased at a fairly constant rate during the period 1969-1972. Had a significant proportion of the farmers in the area realized lower net incomes because of inadequacy of the new technology, it seems reasonable that the use of the recommendations and the average yields would have leveled off or declined by 1972.

Risk in Using the New Technology

In a rainfed area such as Puebla it can be argued that the average expected increases in yield and net income from the use of the new technology are not as important to the farmer as is the probability that net income using the Project recommendations may be less than with the traditional practices in some years. It seems reasonable that the major concern of many low-income farmers is to assure an adequate food supply in very unfavorable years; i.e., their first concern is in maximizing the probability of covering family needs in poor years, rather than maximizing average yields and net income.

To the extent that this sort of decision-making occurs, it can be expected that small farmers will accept or reject the new technology in terms of their perception of how it will influence their net income in an unfavorable year. Although the Project did not directly measure farmers' perceptions of the risk involved in adopting the new technology, some appreciation of the importance of such risk can be obtained from information collected during the 6-year period 1967-1972.

As described in Chapter 3, net incomes from the use of several production strategies were calculated from the results obtained in 125 fertilizer rate-plant density experi-