

under the supervision of a vigorous director with responsibility for modernizing the agriculture of his region, and provided with necessary equipment and supplies. The project agricultural organization would, of course, cooperate closely with other local authorities, especially the Basic Democracies and the farmer's cooperatives, and would take full advantage of their advice and support in carrying out its undertakings. The details of the project areas will be discussed further below.

### Size of the project areas

It is important for the project areas to be small enough to be manageable. On the other hand, they must be large enough to make efficient use of the necessary minimal staff of specialists and of the necessary physical improvements, the most important of which are tubewell and drainage projects, a fertilizer plant, maintenance facilities for machinery, motor vehicles, and the like, and centralized facilities for research and plant experimentation. The hydrology of groundwater control by tubewells and consideration of effective management (see Chapter 7) indicate a unit of about a million acres as the approximate size of an efficient project area, at least in the Former Punjab. The difficulty of lowering the groundwater table over a given region varies directly with the ratio between perimeter and area. This ratio, of course, diminishes rapidly as the area becomes larger, and our computations indicate that in the Northern Part of the Indus Plain the benefit from tubewells approaches an optimum with an area of roughly a million acres. The shape of the area is also important in attempting to lower the water table. Ideally, this should be as close to a circle or a square as natural and artificial boundary conditions permit, bearing in mind that each project should lie within the area commanded by a major canal. A unit about 40 miles on a side contains 1,600 square miles, or approximately a million acres. This accordingly, is the scale of the unit developmental area that we are recommending.

### Timing

For many reasons, it would be inadvisable to initiate so vast an enterprise abruptly. Hence our plan envisages bringing in project areas at the rate of about one a year. The time table for a typical project area would include a two-year preparatory period during which engineering improvements such as tubewells and drains are constructed and staff is recruited and organized, a five-year period of intense development during which the target increase in productivity should be 15 percent per year (or 100 percent for the five-year period), followed by growth at the rate of about 7 percent per year indefinitely.