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# AGRICULTURAL PROGRAMS AND POLICIES IN INDIA

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The Indian economy is predominantly rural and agricultural. Land gives employment to about three-fourths of the population and yields about half of India's national income. The absence of alternative sources of employment is increasing the congestion of the population in agriculture, and there is no prospect in the near future of relieving this pressure on the land. By and large agriculture is a distress occupation for the great number of persons who have no alternative means of earning their livelihood.

Until the early twenties, the growth of population in India was repeatedly checked by famines and pestilence thus fortifying the Malthusian theory. However, cultivation had more than kept pace with the growth of population. The pattern changed after the middle twenties and a successive increase in population started. By the middle thirties, the production of food was outstripped by the growth of population. The separation of Burma from India in 1937 widened the gap between supply and demand. The partition of India in 1947 resulted in a loss of the fertile and irrigated areas of East Bengal, West Punjab, and Sind. The creation of Pakistan not only aggravated the food shortage in India but it also created an acute deficiency in jute and in long and medium staple cotton. The gap between growing population and food supplies widened further. At the time of India's independence, the yield per acre was one of the lowest in the world, and cultivation techniques were outmoded.

In the context of this situation the Government of India embarked on a strenuous program to increase land utilization, expand irrigation, promote use of improved seeds and fertilizers, and institute modern techniques of cultivation with the object of obtaining self-sufficiency in food in the shortest possible period. The First Five-Year Plan gave highest priority to agriculture. The policy included three main features: (1) the maintenance of agricultural prices at a reasonable level, (2) provision of marketing, warehousing, and credit facilities, and (3) reform of the land system.

During the period of the First Plan, production of food grains increased from 54 million tons in 1950-51, to 63.5 million tons in 1955-56. Cotton production increased from 2.9 million bales to 4 million bales; jute from 3.3 million bales to 4.2 million bales; and sugar

cane in terms of raw sugar from 5.6 million tons to 5.8 million tons. During the same period the area under cultivation increased from 51 million acres to 67.8 million acres. Crop yield has increased, but further increases are possible. For example, the average wheat yield in India is 640 pounds per acre as compared with 1,201 pounds in the United States, and 1,512 pounds in Canada in comparable years.

The Second Plan included four main elements of agricultural planning: (1) planning of land use, (2) determination of targets of production, both long-term and short-term, (3) linking of development programs, and (4) an appropriate price policy. A sum of 716 million dollars was allocated for agricultural development with the object of raising food production to 80 million tons by 1961. In 1956-57, the first year of the Second Five-Year Plan, production of food grains increased about 5.4 percent over the previous year. Unfortunately, the crop production declined to a low of 62 million tons again in 1957-58 as a result of drought in some areas and devastating floods in others. Progress in certain sectors has not been entirely satisfactory. For example, agricultural prices have been rising, the rate of increase in output has been very uneven between various states, irrigation potential created through major and medium irrigation schemes has not been fully utilized, etc.

The country has embarked on a positive program of development. But, the task is large and has to be completed in a short time if the race for the economic betterment of the people is to be won. We are pledged to bring prosperity by preserving the basic human values. Our success will enhance the cause of democracy everywhere in the world, whereas our failure to fulfill the basic human wants of food, clothing, and shelter will endanger democracy throughout the world.

We have all along been meeting the shortages in food either by imports or by tightening our belts. Imports exert a strain on our economy by depleting a large portion of our limited earnings of foreign exchange. Tightening of belts also has limits. Therefore, our only alternative is to raise production with a view to making the country self-sufficient in her basic requirements of agricultural products. To achieve this end a number of programs under the Grow More Food campaign are being followed.

The Grow More Food measures include largely the extension of irrigation facilities, increased use of fertilizers and manures, use of improved seeds, adoption of improved agricultural practices, and utilization of development agencies like Community Projects and the National Extension Service. Under the Grow More Food program 54.5 million dollars was provided during the last fiscal year to assist state governments in implementing minor irrigation schemes, land improvement,

etc., and 32.4 million dollars was made available for purchase and distribution of manures, fertilizers, and seeds. Special short-term programs for minor irrigation, such as the construction of tube-wells, ground water exploration, etc., are being pursued with a view to immediate returns. The various programs being pursued are detailed below:

**MINOR IRRIGATION.** The program includes the digging of wells, construction of tanks for the storage of water, and construction of small dams, channels, distributories, etc., to aid local irrigation. During 1957-58, about 28,000 wells and 320 tanks were expected to be constructed and repaired. During the First Plan, about 10 million acres were brought under irrigation from minor works. The irrigated area is to be raised by 9 million acres through minor irrigation works during the Second Plan. By November 1957, 2,650 tube-wells had been drilled under the Indo-American Assistance program.

**LAND RECLAMATION.** The total geographical area of the country is 811 million acres. The sown area is 315 million acres, the uncultivated area and fallow land is 18 million acres, forests 13.5 million acres, and most of the rest is unavailable for cultivation. The Central Tractor Organization, an agency charged with land reclamation, has reclaimed over 1.6 million acres of land since 1948. During the First Plan an additional 1.7 million acres were reclaimed by the states, and 1.5 million acres are to be reclaimed during the Second Plan period. A tractor training center was set up in 1956 and by the end of 1957, 138 operators had been trained.

**DISTRIBUTION OF IMPROVED SEED.** The production and distribution of improved seed is proceeding rapidly. The state governments have set up over 1,400 seed farms of 25 acres each. We hope to set up 4,328 seed farms by the end of 1959.

**MANURES AND FERTILIZERS.** The use of chemical fertilizers is increasing. Production of fertilizer is inadequate to meet demand; the balance has to be imported. The total supply of ammonium sulphate available for distribution during 1957 was 720,000 tons, of which nearly half was imported. Plans are to raise the use of nitrogenous fertilizers to 1.8 million tons by the end of the Second Plan.

Two schemes have been put into effect for stepping up the production of compost manure: (1) larger production of manure in Community Development and National Extension Service blocks, and (2) production of night soil compost manure at the village level. Trained compost inspectors have been appointed in various blocks for training the farmers in techniques of compost making and for popularization of green manuring.

**JAPANESE METHOD OF PADDY CULTIVATION.** A campaign for the adoption of the Japanese method of paddy cultivation was started in March 1953. During the four years 1953-57, a total of 2,374,000 acres was brought under this method. A goal of 4 million acres has been set for 1961. The average yield of rice under the Japanese method was 1,635 pounds per acre as compared with 1,100 pounds per acre by the local method.

**PLANT PROTECTION AND LOCUST CONTROL.** Locust swarms cause devastation in certain parts of India almost every year, and plant diseases are a common menace. The government has set up Plant Protection Equipment Stations in various parts of India. A unit of three airplanes is also maintained for spray purposes. Research on the distribution, breeding, and food habits of migratory and Bombay locusts is being conducted by government institutes. India has been participating for the last four years in the international campaign against the desert locust in the Arabian Peninsula, a vast locust breeding ground.

**AGRICULTURAL EXTENSION.** An agricultural extension program is being developed. The government has trained about 30,000 village level workers and about 3,200 group level workers. These workers are placed in charge of villages in selected blocks. Projects for minor irrigation, sanitary facilities, manuring dumps, roads, schools, and other public institutions are developed through public cooperation. Key village units have been established for improvement of cattle. During the First Five-Year Plan, 150 artificial insemination centers were established. The Second Plan includes the establishment of 245 new insemination centers and 254 key village extension centers. The castration of scrub bulls and the rearing of calves on a subsidized basis is planned. Experts on animal nutrition have been obtained to develop feeds and fodder resources.

Old and unserviceable cattle are being moved from villages to cattle houses (Gosadans). During the First Plan period, some 22 cattle homes for 8,000 head of cattle were established. The Second Plan envisages the establishment of some 60 new homes for about 30,000 cattle.

**DAIRY DEVELOPMENT.** In 1956, the country had 159 million cattle, 45 million (water) buffaloes, 39 million sheep, and 57 million goats. The breeds are poor and the large animal population is more of a liability than an asset. The quantity of milk available for consumption is small, only about 5 ounces daily as compared with 15 ounces recommended for good nutrition. Plans are to step up milk production by 30 to 40 percent in intensely worked areas over 10 to 12 years. Milk supply schemes for large cities are being developed. The Calcutta Milk Project, established with assistance from the United States, the Netherlands, Aus-

tralia, and Canada under the Cooperative Action Project of FAO, is working very well. The New Zealand Government has rendered assistance for the Delhi Milk Supply Scheme under the Colombo Plan, and milk projects for Bombay, Poona, and Madras are also making rapid progress. The Second Plan aims at the establishment of 36 urban milk supply schemes, 12 cooperative creameries, and 7 milk drying plants.

**POULTRY.** Though poultry is a profitable subsidiary industry and a rich source of nutrition, its development has been very slow. The Second Plan includes the establishment of 5 regional poultry farms and 300 demonstration and extension centers at a cost of 5.4 million dollars. Last year about 30,000 chickens were imported from the United States for these farms. Our native hens lay about 50 eggs a year compared with about 120 in other countries.

**FISHERIES DEVELOPMENT.** A program for the development of inland and marine fisheries was implemented during the First Plan at a cost of 10.5 million dollars. Assistance was received from FAO and under the Indo-Norwegian and Indo-U. S. technical cooperation agreements. Fish production increased by about 10 percent to over one million metric tons. A rise of 33 percent is expected during the Second Plan at a cost of 25 million dollars.

**SOIL CONSERVATION.** A soil conservation program was begun during the First Plan. A desert forestry research station was established in 1952. Pilot projects in 11 states were established. Soil conservation measures were adopted on 700,000 acres. An additional 3 million acres are to be brought under the program during the Second Plan period.

**LAND REFORMS.** The major responsibility for land reforms rests with the state governments. However, the Central Government, in consultation with the state governments, outlines the broad national land policy. The general features of the policy are consolidation of small holdings; cooperative cultivation; the elimination of middlemen and of unduly large concentration of property in individual hands; fair and equitable conditions of tenancy; and above all, diversification and expansion of production on a vastly improved basis of efficiency.

In the planning of agricultural techniques we had to take into account the economic and social framework and the pattern of administrative organization within the constitutional set-up which the people of India have adopted for themselves.

**IRRIGATION PROJECTS.** A lasting solution to the problems of food shortage and economic development lies, to a large extent, in the speedy completion of our multi-purpose river valley projects. India is rich in water resources. River water resources have been computed at 1,360 million acre-feet, of which approximately one third are utilizable. Until

1956 only 22 percent of the utilizable river flow had been utilized. The possibilities of diverting the normal flow of rivers into irrigation canals have been exhausted. Plans for future development aim at impounding the surplus river flow during the monsoon for use during dry weather. A large number of multi-purpose dams are under construction. Our progress and achievement in this field is unique. The Bhakra Nangal project will irrigate 3.6 million acres, the Hirakud Dam project about a million acres, and the Damodar Valley project another million acres. We have 26 other projects.

While the development of agriculture is vital for feeding and clothing the ever-growing population of our country and is a topmost concern of the Government of India, the problem is intricately related to the general economics of the country. More job opportunities must be created in urban professions. Improved implements and fertilizers must be made available at reasonable cost. More profitable uses for indigenous agricultural raw materials must be found. All this calls for industrial development. The solution of our problems, therefore, lies in such growth of the economy that the development of industries and agriculture marches forward in close correlation. For this reason the country is simultaneously giving great emphasis to industrialization. Heavy industries have been planned with a long-range view, while small-scale industries are being developed with a view to utilizing the inexpensive indigenous raw materials and surplus manpower.

The task is huge and has scores of hurdles in the way. It needs concerted effort from within the country and assistance from friendly nations in this humane cause. We are working toward the goal with a sense of national awakening and are looking forward to the future with hope, faith, and confidence.