

Agriculture in Iran



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The rural economy, for millennia the economic and social basis for all Persian governments, is characterized by a series of ecological and economic restraints that have hampered its development. While the natural limitations of the country have effects on the extent of agriculturally usable land and the kinds of crops grown, the socioeconomic structure of Iran and its historical foundations are important for the organization of agricultural production and for economic development. Of special importance, for the understanding of the historical development of Iranian agriculture is the theory of rent-capitalism (Rentenkapitalismus) developed by the Austrian geographer H. Bobek (1959, 1961, 1974, 1976-77).

Ecological foundations of Iranian agriculture. Limited availability of agriculturally usable soils and the lack of water are the most important natural barriers for agriculture in Iran. Due to topography and unfavorable climate, only the mountainous north, northwest and west receive sufficient precipitation to carry out spatially extended agriculture. That the agriculturally usable land is limited is shown by the survey by Pabot (1967), according to which only 15 per cent may be considered as farmland and another 25 per cent of the total land of the country as rangeland. The biggest part of the country (approx. 50 percent) is sterile desert or desert-steppe, which may be usable only for periodic pasturing, while the rest is mainly degraded forests.

The agriculturally usable lands of Iran can be divided into four categories:

Areas of intensive and widespread natural irrigation agriculture are characterized by adequate precipitation and natural water potential. In Iran, only the Caspian lowlands can be considered of this type. Gīlān and western and central Mazandaran receive extensive precipitation (up to 2,000 mm) and are covered by such a dense network of brooks, ravines, and rivers that the whole strip between Āstārā east to the great delta fans of the Bābol, Harāz, Taġjan, and Tālār rivers in central Māzandarān are characterized by intensive agricultural land use.

Areas of dry farming are the most characteristic and can be found in most parts of the country. Grains are grown on the basis of winter rains without additional irrigation; such lands are found especially along the mountainous fringes of the central Iranian plateau between Azerbaijan, Khorasan, and Fārs (cf. Bobek 1951). The plateaus of central Iran, as well as the eastern and southeastern parts of the country, are so arid that agriculture can only be carried out by irrigation.

Areas of artificial irrigation, typical for much of the central Iranian plateau, are characterized by relatively small patches of intensive agricultural land use amid unused or little used environments. There are different forms of artificial irrigation (see Ābyārī). The oldest form, still common, is to divert river water; equally common is the canalization of springs and brooks, especially along the foot of high-rising mountains. Most famous and ingenious of all forms of artificial irrigation in Iran is the capture of circulating ground water by means of qanāts (q.v.). Dam-regulated irrigation, although known since Achaemenid and especially Sasanian times, has grown in significance in recent years. So has the large-scale construction of wells, due to which many qanāts have dried up.

Pasture and rangeland, in terms of spatial distribution, represent the most common form of land use; animal husbandry is carried out both by the farming and the tribal population. Areas of animal husbandry cover,

horizontally as well as vertically, the fringe areas of dry farming and include the dry farmed lands themselves. The fallow fields serve as stubble pasture, thus receiving a natural manuring. Of special importance is the animal husbandry in the high mountains beyond the limits of agriculture. Here grazing occurs not only on slopes too steep for agriculture but even more in those parts which, due to long snow cover or short vegetation period (i.e., at approximately 2,400 to 2,600 m altitude), cannot otherwise be used.

Farmer Information

Iran has well-established services for research and extension working basically on a top down transfer of technology model. This has been successful with larger farmers but has done less for the mass of smallholders. The separation of crops services from livestock and forestry services has led to overlap, gaps and a fragmented approach to farmers' problems. There has been no encouragement of private participation in research and extension. The Study recommends a progressive change of approach, to put research and extension at the service of the farmer, including consolidation of MoA and MoJ research and extension, joining MoA's structured approach and technical expertise to MoJ's bottom-up philosophy.

It is recommended that research and extension work together with farmers in a Farming Systems Approach (FSA).

The existing research policy needs to be reviewed and a master plan and an investment program need to be worked out. Extension needs to develop participatory approaches, learn diagnostic skills, promote farmer groups, and use highly geared and innovative delivery media. Human resource development is vital – education, training, incentives – to maintain morale and to raise production standards. The involvement of the private sector and of the universities in both research and extension could also be actively promoted.

The role of women in farming is important and there is scope to focus current initiatives in women's extension by an improved data base feeding into a women-oriented research and extension agenda. Training facilities for women farmers and technicians are a priority. Technical training for agriculture produces about 1,500 graduates annually but few are ready for employment or go to work as farmers. A review of the system is recommended to upgrade quality and to match the training to demand from potential employers.

Livestock, Forestry and Fisheries

The separation of natural resource management and livestock from crop production caused by the transfer of departments to MoJ, has created a fragmented approach to mixed farming. Animal husbandry and range management are two areas that have suffered most. In general, there is a need to redefine the role of public services in these subsectors, to privatize some services and parastatals and to increase cost recovery. In livestock, a start has been made to privatize breeding and veterinary services. Other areas for privatization are: feed production and meat imports. There is scope too for using registered technicians for drug provision and for subcontracting public services like meat inspection and compulsory vaccinations. Charges for clinical treatments and non-compulsory vaccinations are being raised to increase revenues and allow the private sector to compete. In range management, the priority is to reverse the degradation of range lands and to recover marginal land that was ploughed for arable crops in the 1980s. This requires more concerted efforts on extension, training and enforcement of rules. The Government program has already made significant demonstrations in this direction and need to be expanded-with direct involvement of range users. Watershed management needs to be improved by accelerating conservation programs; the fusion of MoA and MoJ services would help this process.

In forestry, there is scope to privatize the state-owned forest industry plants. Government role in afforestation can move progressively to providing the incentive framework and management support, particularly in social forestry where socio-economic studies and pilot projects are suggested to help define a national strategy.

Fisheries are a large resource and fishing is a fast growing industry. The Government has made significant progress towards privatizing these operations. The Study recommends that the privatization of large-scale operations be completed and that public services focus on developing a viable cooperative artisanal fishing industry.

Rural Development

To counter rural-urban drift, Government has invested in rural development, including infrastructure, economic diversification and job creation. MoJ implements the program, working through traditional and modern structures to obtain participation in programs and in costs. Traditional user groups are common in Iran and it is recommended that the potential for more participatory development programs based on these structures be studied.

The physical achievements of MoJ's rural infrastructure program (costing Rls 132 billion, US\$88 million in 1992/93) are considerable: potable water in 18,000 villages, electricity for two-thirds of the rural population, 60,000 km of rural roads. Now the challenge is to ensure sustainable operation and maintenance through transfer of responsibility to village communities. It is suggested that MoJ also review the whole program to determine a cost-effective strategy for the next decade.

Small-scale industry, including rural handicrafts, accounts for over half of industrial employment. MoJ services include extension, procurement, marketing and rural industrial estates. During the dirigiste 1980s, this support was essential, but now public support could focus more on providing information, training and marketing support. Private promotion of rural enterprises is being encouraged by Government and should be accelerated. Associated finance and procurement services could be provided by the market. Priority should be given to reviewing the industrial estates program, where progress has been slow and costs high. MoJ's support to nomads is moving into a new phase with an ambitious voluntary settlement program. It will be necessary to ensure the economic viability – without continuing subsidies – of the settled production systems. Services to nomads need coordination among departments and between MoA and MoJ, which would be aided by the fusion of MOA and MOJ services.

Marketing and Processing

Government remains dominant in the marketing, processing and pricing of wheat and many industrial crops – sugar, oilseeds, cotton and tea. Policy is liberalization and privatization, but the scope for this depends on economic viability and on the extent of any remaining subsidies. For industrial crops, it is recommended that early analysis should be made of competitiveness in order to define the most appropriate phased development approach. First, a review of their viability could be conducted and decisions taken on protection levels; in any case, protection would be better effected through tariffs rather than quantity restrictions.

The relative advantages of sugar cane and sugar beet merit examination and investments in cane should await the outcome of this study. The review might also show which parts of the industrial capacity are surplus to requirements and need to be considered for closure. Removal of price distortions needs to be completed by

eliminating input and consumer subsidies and by bringing prices to border levels. In a second phase, privatization could be considered. For wheat, privatization can be envisaged as Government phases out the bread subsidy. The import and distribution of feed grains could be left to the private sector. For horticulture, a market development program needs to be further encouraged with the private sector.

A Greater Role for the Private Sector

The fundamental prerequisite to private participation is a policy environment that fosters competition and promotes investment. Unification of the exchange rate, liberalization of trade and the removal of subsidies are part of this environment. The completion of this process will contribute to the enabling environment. This could be complemented by defining the objectives and policy for each subsector and stating the role of the public sector and plans for investment and privatization. This should be a mainstay of the Second Five Year Plan (SFYP).

In general, the development of private markets requires equal access, and Government has to ensure that private firms suffer no discrimination in access to banking facilities, licenses, etc. In addition, public enterprises, foundations and cooperatives need to operate under the same competitive environment as the private sector, without subsidies and in a transparent and accountable manner. Other preconditions to private sector participation are the lifting of entry restrictions, elimination of price distortions and, in some cases, legislation to protect private interests, such as intellectual property legislation to protect research results and breeders' rights legislation for seed production.

Government can also encourage the private provision of formerly public services by contracting services to private agents (e.g., some research, meat inspection, vaccination, forest inventory, rural infrastructure), by promoting development of private institutions (e.g., cooperatives, soil laboratories, trade organizations); by increasing charges for public services to make private provision profitable (e.g., seeds, veterinary care); and by privatization (input supply, tractor production and distribution, feed production and trade, and fishery operations).

Development of Public Services

There are significant constraints on the efficient provision of those services that Government should provide. The biggest challenge is cooperation among public institutions. The best solution would be reorganization that would unify planning, research and extension, fuse forestry, livestock and crop production services, and consolidate planning and management of land and water resources. Reorganization needs to be carried through by decentralization and joint practical field activities. Staff of public institutions need to change in both quality and quantity. New skills in economics, business management, sociology and sustainable resource management are required. Staff may be retrained, and many will transfer into the private sector. A human resources development plan is recommended.

In order to meet their obligations to the public and to promote internal efficiency, public services need to develop an information culture.

The cost of public services is high. A public expenditure review is recommended, to identify areas for cutting or for increasing efficiency. Increasing cost recovery would raise revenues and give market-drive to services. Perhaps the most important and all-pervading change recommended is from the previous top-down approach to one that gives priority to farmers' needs. To become responsive to farmers requires an urgent change of culture, development of new diagnostic and participatory techniques, a shift of resources to field level and decentralization

of management responsibility. The development of cooperatives and farmers' groups will be a key element in the future. As better-off farmers respond to market incentives, public services can be concentrated increasingly on smaller farmers, poorer areas and special target groups like women. Part of Government's role will become the protection of vulnerable groups through a safety net that does not distort economic incentives.

Investment Proposals

Some recommendations require simply a policy decision, many require studies, most require some kind of investment. The Study identifies possible project ideas, of which the most important are:

* a program to develop research, extension and farmer organization, with a focus on the neglected smaller farmer and under a farming systems approach.

* a program to assist the process of adjustment through support to the institutional development of MoA and MOJ, a public expenditure review, support to planning, policy analysis and statistics, and support to privatization.

* a program to assist in modernizing and privatizing production and distribution of chemical inputs, seeds, mechanization, and animal feed, and to reinforce Government's residual role.

Sources

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