

---

# UNIT 14 SOCIETY AND AGRICULTURE

---

## Structure

- 14.1 Introduction  
Objectives
- 14.2 Infrastructure Development
- 14.3 Policy Support
- 14.4 Institutional Capacity Building
- 14.5 People's Participation: Some Case Studies
- 14.6 Summary
- 14.7 Terminal Questions

---

## 14.1 INTRODUCTION

You know that agriculture is one of the most important economic sectors of South Asian Countries. It contributes significantly to the gross domestic product (GDP) and employs a large section of the population. The GDP shares of agriculture sectors of the SAARC countries are: Bangladesh-30 per cent, Bhutan-45 per cent, India-31 per cent, Nepal-45 per cent, Pakistan-25 per cent and Sri Lanka-25 per cent. In comparison the shares of industrial sectors are: Bangladesh-14 per cent, Bhutan-25 per cent, India-29 per cent, Nepal-14 per cent, Pakistan-24 per cent and Sri Lanka-26 per cent. The figures for the labour force engaged in agricultural sector in SAARC countries are: Bangladesh-65.5 per cent, Bhutan-90 per cent, India-63.2 per cent, Nepal-91.7 per cent, Pakistan-47.4 per cent, Sri Lanka-49.1 per cent. The SAARC average is 67.8 per cent. Agriculture provides the bulk of various goods required by the non agricultural sector as well as numerous raw materials for industry. The direct and indirect share of agricultural products in exports is quite high.

The increase in agricultural productivity improves the well being of our people. When rural people have enough left over in their storage bins after satisfying their food requirements, they sell it and in turn buy non-agricultural goods. This creates markets for industrial goods and services. Since small cultivators and workers comprise a significant proportion of the poor, an increase in agricultural productivity directly increases the family incomes of small cultivators and resource-less households, and hence their purchasing power.

Increase of agricultural productivity is one of the key to poverty alleviation in the SAARC countries. Therefore, the stimulating factor in economic growth is agricultural production. Thus, there is a considerable stake of the agriculture-based economies of South Asia in providing economic, infrastructural and social support to increase agricultural productivity and competitiveness in the world markets. In this unit, we shall discuss the aspects of infrastructure development, policy support, institutional capacity building and people's participation that delineate the interface of society and agriculture.

### Objectives

After studying this unit, you should be able to:

- analyse the need for infrastructure development in agriculture, particularly, storage facilities, markets, roads and irrigation in your region/country;
- outline the policy support required to improve agricultural productivity;
- discuss the need for institutional capacity building in support of agriculture; and
- appreciate the importance of people's participation in agriculture related activities and programmes.

---

## 14.2 INFRASTRUCTURE DEVELOPMENT

---

Rural areas in the countries of South Asia and South-east Asia have serious inadequacies in physical infrastructure which limit their prospects of rapid growth in agriculture. An equally, if not more seriously limiting factor for socio-economic growth in rural areas is the low level of human resources development. Factors such as low literacy levels (much worse in the case of women), high levels of morbidity, and shortage of skills demanded by a competitive, globalizing economy pose serious hurdles for sustaining levels of growth necessary for eradicating poverty. Unfortunately investments in developing infrastructure and human resources in rural areas have been neglected as compared to the urban areas.

More than half of rural households in these countries do not have access to electricity even though a large number of villages are reported to be electrified. The power supply is erratic and unreliable. Most villages in dry land regions and in inaccessible mountainous regions face shortage of good quality agricultural inputs. Implements and facilities for post harvest operations like threshing, winnowing and storage and transportation are lacking resulting in high on-farm wastages. For agricultural perishables like fruits and vegetables, there is lack of cold chain due to which distress sale and spoilage is quite common in agriculturally under-developed areas. The facilities for marketing them are meagre.

Unrealistic pricing policy and inefficient management of movement, storage and distribution system creates problems for farmers as well as consumers. Weekly *haats* in rural areas are the mainstay of rural poor for marketing produce and purchasing their daily necessities. The first and foremost aid to agricultural development is "information". Due to lack of information on prices and markets, farmers in agriculturally backward areas suffer from exploitation by middlemen and local traders. Sound information infrastructure is thus essential for agricultural marketing research, education and extension.

We now present an overview of the issues involved in the development of infrastructure in the agricultural sector viz. rural transport and irrigation facilities, storage facilities, marketing etc.

### **Transport in Rural Areas**

There is a wide disparity in connectivity among various regions of the South Asian countries. Countless villages in these countries still rely on tracks that are unsuitable for motorized traffic particularly during the rainy season. Much of the rural road network is under-developed, of low standard and poor quality, structurally weak, poorly maintained, and extremely deteriorated. The lack of roads means that an estimated 20-30 percent of the agricultural, horticultural and forest produce gets wasted because of inability to transport the produce to marketing and processing centres.

A good infrastructure of rural roads and means of transport is required for transporting agriculture produce and for rural industrialization. It is vital for improving the quality of life and socio-economic transformation of the majority of people in the rural areas. It is important to have rural areas linked with markets through all weather roads with motorized transport. Improvement in rural transport leads to substantial reduction in freight charges, increase in household incomes, more employment opportunities, and expansion of cultivated land.

**Keeping in view the socio-economic benefits accruing from providing road connectivity to the villages, there is a need to impart greater thrust to provide road connectivity and means of transport to rural areas.**

The key issues in the sector include: inadequate funds, outdated planning, programming and budgeting, outdated design and construction standards, poor construction quality, gross neglect of maintenance, lack of inter-agency coordination, limited implementation capacity, and lack of accountability. In view of these problems and constraints, it is necessary to prepare rural master plans and develop national policies for rural roads and transport.

### Irrigation

Most of the agriculture in South Asian countries is monsoon dependent. The dependence on seasonal variations in rainfall leads to bumper harvests in some seasons and crop failures due to drought in others. The importance of irrigation cannot be overemphasized. The overall strategy so far has been to concentrate public investments in surface systems, such as large dams, canals, and other large-scale works requiring huge outlays of capital over a period of years, and in deep-well projects that also involve large capital outlays. Ecological and socio-economic implications of large irrigation projects are being studied and compared with sustainable localized efforts on water harvesting and conservation, which are being encouraged and supported. You have read about these issues in much more detail in Unit 7.

Many areas receiving water through irrigation are poorly managed or inadequately designed; the result often is too much water and water-logged salt affected fields incapable of production as very little efforts are made to integrate drainage with irrigation projects. To alleviate this problem, more emphasis is being placed on using sustainable methods of irrigation. Use of sprinkler irrigation over flood irrigation is being encouraged. But we still have a long way to reach the stage when agriculture will be free from the dependence on monsoon.



Fig. 14.1: Electricity, transport, irrigation and markets are some of the major areas that need to be strengthened in rural areas

## Marketing and Storage

The agricultural marketing system operates primarily according to the forces of supply and demand in the private sector. Government intervention is limited to protecting the interests of producers and consumers and promoting organized marketing of agricultural commodities. For example, in India there are regulated markets to which the central government provides assistance in the establishment of infrastructure and in setting up rural warehouses. A network of cooperatives at the local, state, and national levels assist in agricultural marketing. **There is a crying need for technical improvement, financial management, raw materials development, and inventory control in processing and marketing of agricultural produce.**

Warehouses and other storage facilities for storing agricultural produce and farm supplies have played an increasing role in price control programs and in distributing farm commodities and farm supplies. Since the public warehouse issues a receipt to the owners of stored goods on which loans can be raised, warehouses are also becoming important in agricultural finance. The growth of the warehousing system has resulted in a decline in weather damage to produce and in loss to rodents and other pests.

Most agricultural produce in these countries is sold by farmers in the private sector to money lenders (to whom the farmer may be indebted) or to village traders. Produce is sold in various ways. It might be sold at a weekly village market in the farmer's own village or in a neighbouring village. If these outlets are not available, then produce might be sold at irregularly held markets in a nearby village town. Farmers also can sell to traders who come to the work site. Where the farmers have access to telecommunication facilities such as STD telephones and INTERNET, they have been found to make good use of these to price and sell their produce. Establishment of cold chain, low cost pre-cooling facilities near farms, cold stores and grading, sorting, packing facilities to reduce wastage, and improve the quality and shelf life of products are very much required.

**To sum up, to meet the transitory and emergency food requirements of the developing countries, increased attention is required to develop storage facilities and adequate transport infrastructure and strengthen existing collective food reserves as well as development of agro-processing facilities to meet emergencies. Implementation of long term integrated programmes for disaster mitigation and strengthening the basic elements of disaster preparedness must be given priority in disaster prone areas. The acute problem of arsenic contamination needs to be addressed collectively.**

You may like to consolidate these ideas before studying further. Attempt the following SAQ.

---

### SAQ 1

Outline the major infrastructural needs for improving agricultural productivity in your area.

---

---

## 14.3 POLICY SUPPORT

---

The well-being of the people of any country depends in a significant way on the adequate and sustained production and distribution of food. The problem of low agricultural productivity and lack of access to food continues to persist in South Asia. Nearly 37 percent of the world's malnourished are in South Asia. A major concern of these countries is to ensure adequate food for all at reasonable prices at all times with special provision for the chronically undernourished, underprivileged and other vulnerable groups of the society,

Greater investment in agriculture and rural development is necessary to move towards the desired goal of attaining food security for all. It is a well known position of the governments of South Asian countries that **public policies and programmes must ensure access to land, credit, water, agricultural inputs, technology, information, employment and markets for the rural poor and the small farmers.**

The Governments of the SAARC nations need to undertake sustained measures to extend micro-credit and cooperative programmes with focus on farmers and the disadvantaged groups of the society. Due emphasis has to be laid on the promotion of indigenous skills, small scale and cottage industries to address rural poverty, as well as cooperation in agricultural research and extension. The adoption of improved agricultural technologies and farming practices can have a direct impact on household food security provided they are suitable to the poorest farmers, generate net income growth and address the needs of the community.

**Policies of decentralisation and building up of grassroots level institutions** can sustain efforts of food security programmes. The effective implementation of programmes for social mobilisation and decentralisation and for strengthening institution building is a very important issue along with good governance, rule of law, transparency and accountability.

SAARC countries should harmonise individual efforts and forge a common action plan to combat mal-nourishment, under-nourishment, rural and urban hunger through **appropriate policies that promote sustainable agriculture and food production with ecological conservation.**

Trade in food within and between countries is also important for world food security. While South Asian countries should welcome globalisation, they need to move with caution and protect the vulnerable groups from the adverse impacts of liberalisation of food markets.

Among the least developed South Asian countries there must now be effective cooperation on social and economic policies. No single country can act effectively and alone. Going beyond this, there must be coordination in national social policies, agricultural policies, measures to meet environmental needs and the other substantive programmes of these poor countries in the new millennium.

Subsidies should be targeted to benefit the poor and marginal farmers who grow food for the domestic market. International community should strive to ensure removal of subsidies on export-oriented agricultural crop production to prevent dumping of agricultural products.

Effective partnership of governments, international bodies, NGOs, civil-society and private sectors can ensure synergies in resources and actions to address poverty and food security. Donor countries, international financial institutions, as well as UN Specialized Agencies, including FAO, should support, facilitate and encourage transfer to and access by developing countries of new farming technologies through preferential terms and concessions. NGOs and civil society organisations in South Asia are playing an important role in social mobilisation and advocacy for agricultural and rural development, empowerment of women and the marginalised groups. They are also partners in implementing social development programmes. NGOs should complement government efforts to reverse the declining trend in the flow of resources to the food and agricultural sector.

To increase crop yields in South Asian Countries, the governments have devised specific policies and programme to provide agricultural inputs, such as seeds, fertilizers, power and irrigation water at subsidized prices and have made public investments in agricultural research, and extension. The governments also formulate national agricultural policies of price support, procurement, subsidies, investments,

credits, insurance, taxation and trade and fix minimum support prices for major commodities each year.

The policies seek to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of the countries' natural resources-land, water and genetic endowment to promote sustainable development of agriculture.

**Water** is a prime natural resource, a basic human need and a precious national asset. Planning, development and management of water resources need to be governed by national perspectives.

A well developed information system, for water related data in its entirety, at the regional, national level, is a prime requisite for resource planning. Standards for coding, classification, processing of data and methods/ procedures for its collection should be adopted. Advances in information technology must be introduced to create a modern information system promoting free exchange of data among various agencies and countries.

**Seeds** are the most important determinant of agricultural production potential, on which depends the efficacy of other agriculture inputs. Seeds of appropriate characteristics are required to meet the demand of diverse agro-climatic conditions and intensive cropping systems. Sustained increase in production and productivity is dependent, to a large extent, on development of new and improved varieties of crops and an efficient system for timely supply of quality seeds to farmers.

The creation of a facilitative climate for growth of a competitive and localized seed industry, encouragement of import of useful germplasm, and boosting of exports are core elements of the agricultural policy of the new millennium.

We also need to have policies to motivate farmers and food processors, and to provide an interactive coupling between technology, economy, environment and society for speedy development of **food processing** industries. We need to build up a substantial base for production of value added agro food products for domestic and export markets with a strong emphasis on food safety and quality, enabling the farmers especially to realize direct benefits of new technology and marketing network and to ensure adequate availability of quality food products for the consumer at economic prices. It will also generate employment potential and safeguard environmental sustainability.

Low margins, seasonality and high perishability being the distinct features of this industry, the access to seed capital and working capital is not easy. With the coming in of WTO regime the countries have to prepare for meeting the requisite quality standards in order to compete with imported goods in the domestic as well as the market.

Appropriate environment for entrepreneurs needs to be created to set up Food Processing Industries through

- fiscal initiatives / interventions like rationalization of tax structure,
- harmonization and simplification of food laws,
- strengthening extension services to the farmers and co-operatives in the areas of post harvest management of agro-produces, and
- simplification of documentation and procedures under taxation laws.

### **Agricultural Credit**

Cooperative agencies, commercial banks and regional rural banks have gradually ensured that credit reaches the most remote agricultural and rural areas. Cooperative societies not only serve as a channel for providing credit but are also a means of broadening the experience of villagers in activities like marketing, community

farming, and consumer purchasing. Credit societies are the most extensive and important group of cooperatives. Cooperatives have also played a significant role in the production and distribution of agricultural inputs such as fertilizers, pesticides, and agricultural implements.

A recent phenomenon witnessed in these countries is that of micro-credit through people's participation. The Grameen Bank of Bangladesh is a success story that stands out and we shall take it up in Sec.14.5.

### **Agricultural Insurance**

Crop insurance schemes are instruments of risk management in agriculture and act as measures of providing relief to farmers whose crops are damaged due to natural calamities. Certain crop insurance schemes also cover small and marginal farmers. There are also livestock insurance schemes for the value of the animal at the time of death.

During the last one decade there has been a significant change in the economic and trade policies around the world. In order to cope with fast changing global economic and trade scenario, the national policies have been suitably modified. An example is **the export and import (EXIM) policy** of the Government of India.

The objectives of the EXIM policy are:

- To facilitate sustained growth in exports to attain a share of one percent of the global merchandise trade.
- To stimulate sustained economic growth by providing access to essential raw materials, intermediates, components, consumables and capital goods required for augmenting production and providing services.
- To enhance the technological strength and efficiency of Indian Agriculture, industry and services, thereby improving the competitive strength while generating new employment opportunities and to encourage the attainment of internationally accepted standards of quality.
- To provide consumers with quality goods and services at internationally competitive prices while at the same time creating a level playing ground for domestic producers.

To sum up, appropriate policies and programmes have an important role in not only boosting agricultural productivity but also ensuring maximum returns to the farmers and food security for the people and environmental safety. You may now like to attempt an SAQ on this aspect of society and agriculture.

---

### **SAQ 2**

Discuss the policy measures required to boost agricultural productivity and to usher in rural prosperity in the current international trade regime.

---

## **14.4 INSTITUTIONAL CAPACITY BUILDING**

---

You have studied that the fight against poverty and food insecurity, necessarily a long-run effort, is based on agricultural development fuelled by growing productivity and supplemented by suitable policies in South Asian countries. Modern agriculture is knowledge-based, in which education at all levels, particularly higher and vocational education has an important role. The developments in science and technology have created immense possibilities of reaching information and education to billions of

rural masses irrespective of geographic, administrative, socio-political and economic constraints. The Information and Communication Technologies (ICTs), which essentially are about increasing productivity and information access anytime, anywhere, thus appear to have an important role in this effort. The new technology also has the potential to link policy makers, administrators, researchers and commercial set-ups to the farmers, thereby putting agriculture in the front line of economic growth of these countries.

In recent times, several initiatives have been made in the countries of Asia, Africa, and Latin America, which primarily aims at use of ICT for **governance, increase of agricultural production**, and **poverty alleviation** which lead to overall development of humankind. Several governments in the world have implemented ICT projects which promote **e-governance, government online** and **automation of office administration** with an overall aim of providing **transparency, accountability** and **peoples' participation** in governance. The importance of ICTs is recognized as a tool that serve the poor in rural areas who predominantly depend on agriculture by improving the access, quality and current relevance of information to support their livelihood and food security strategies.

The ICT plays an important role in providing timely and right information awareness to the poor to participate in and take advantage of globalization. The ICT also allows producers to interface directly with the client to know the demands and accordingly change the production and marketing strategies in a manner most suitable for their capacities and socio-economic conditions.

The SAARC countries, whose economic backbone is agriculture, have greater role in implementing ICT applications for improving the agricultural productivity / production with an ultimate aim to eradicate poverty in the region. Realizing the potentials of ICTs, the countries in the south Asian regions started several projects each with a different approach such as **e-governance, information villages, grameen phones, wired villages, rural information kiosks, agricultural marketing portals, knowledge networks** and many such initiatives. Cyber parlours have been started to cater to information needs of rural people such as land needs, markets, social aspects etc. These experiments have been appreciated by the people and have helped them to improve their knowledge in various aspects of agriculture and markets.

Issues relating to **ICT capacity building, sensitizing and training people to take advantage of Internet connectivity, e-governance, e-commerce, e-learning, networking, and knowledge management, and public-private sector partnerships form the major dimensions of institutional capacity building.**

The ultimate objective is to improve the quality of life of the populations through digital democracy and e-governance. In a decentralized democracy the IT could have the following applications:

- Resource mapping at the micro and macro levels.
- Seminars aided by internet on pooling of resources and effective utilization of resources, based on social justice and social development oriented priority.
- Electronic conferencing at every level of policy analysis, project preparation, planning, implementation, monitoring, evaluation, project/ plan modification, and referrals and consultation.
- Teaching and training at various levels through internet, web publishing, and e-mail.
- Transparency in governance, quick access to data and speedy retrieval.

The paradigm shifts in the agricultural production systems which foster the diversification of farming based on sustainable use of natural resources and input management have highlighted the role of education as an essential resource for agricultural development. The increasing recognition for integration of farmers' knowledge and innovations with the agricultural research strategies has necessitated for the creation of forward and backward flow of relevant information in the agricultural system. Knowledge-based agriculture propelled by the precision farming mechanism is becoming future age agriculture in all countries.

This mode of agriculture uses information and knowledge based management systems to increase production efficiency by adjusting farmer inputs to specific agro-ecological situations within each area of a field. The new worldwide agricultural extension policy framework that promotes public – private partnerships with emphasis on participatory approaches has increased the multitude of agricultural institutions and information sources.

The integration of research, education and extension is important to modernize the practice of agriculture. Technologies developed for commercialization need to be transferred to the farmers who should also have the capacity to understand and use them. We find today that farmers continue to struggle with out-dated implements and if at all they have made improvements, it is on their own.

SAARC countries, of course, have made significant contributions in agricultural research as a whole but there are still such areas which need more attention and priority. Cost effective post-harvest technology is one of them. In practice, even the accepted technologies are not being utilized due to various reasons. One of them is lack of awareness and absence of well established information network.

There is also a need to think of teaching about agriculture along with health care and sanitation in schools, colleges and Universities. It is time that we make agriculture as an integral part of university and school education and broaden the outlook of teachers and students.

### **Women in Agriculture and Environmental Protection**

Women in South Asian Countries play an important role in all walks of life in general and in agriculture in particular. Due to unabated degradation of life support systems particularly land, water and forests, the drudgery of women is increasing. The pre- and post- harvest technologies are not sensitive to the requirements and convenience of women; hence intensification or diversification in agriculture results in increased work loads for them. In spite of significant contributions made by women to household income through on and off farm activities, there is least social and economic recognition and their work as family labour is grossly underestimated. There are great variations in gender roles in agriculture across the region influenced by culture, agriculture, physiographic and climatic factors.

A sharp decline in common property land resources on one hand and the deterioration of the remaining land have contributed to hardship for the rural community, particularly for women of the poor households. Deforestation has increased time and distance involved in grazing and collection of fuel and food. Due to shrinking forests, the distance from rural human habitats to forests has increased considerably. Moreover, it has also threatened availability of fuel and fodder and income generating opportunities for women by affecting livestock rearing and collection of Non-timber forest products (NTFP). Reduced or non-availability of NTFP has shifted women from self-employment to wage employment.

Women in rural areas generate income in various ways. This includes basket, broom and rope making, tussar silk cocoon rearing, lac cultivation, oil extraction, and bamboo works, etc. Women constitute the larger of the total employed in forest-based small-scale enterprises. Women's key role in the production of major grains and minor millets illustrates their valuable contribution to the food security. In addition, women play a crucial role in ensuring supply of food as food vendors and post-harvest processors of livestock and fishery products. As major buyers of family food and meal-makers, women ensure adequate food security. As primary providers of nutrition to the young children, women are the major decision-makers in ensuring nutrition to the next generation.

Therefore, planning at the local level should be gender-sensitive and should have gender-segregated information to support local development efforts. Existing policies related to targeting women and gender-equity should be widely communicated to all involved in development work including women clientele.

Women-managed rural production and marketing ventures should be supported in horticulture, floriculture and post-harvest processing in commodities and provided technology training and input support to women to take advantage of emerging high-value agribusiness sector including bio-technology and forest products.

---

### SAQ 3

Discuss how institutional support can help in improving agricultural productivity and bettering the lot of farmers, and women in particular.

---

---

## 14.5 PEOPLE'S PARTICIPATION: SOME CASE STUDIES

---

So far you have studied about measures like infrastructure development, support through appropriate policies, education of farmers, e-governance etc. required to improve agricultural productivity as well as the economic conditions of the farmer. But the peoples' active participation in all such initiatives is the most important ingredient as the following case studies illustrate.

### The Pani Panchayat Experiment

The experiment of organizing the local population to harness the available water resources for agriculture was initiated by Mr. V.B. Salunkhe in a drought prone area characterized by high levels of poverty in Pune district of Maharashtra, India. In order to optimally utilize the locally available meagre water resource for protective irrigation and in order to fulfil the need of food and shelter of the local people on a sustained basis, the initiative for water conservation and utilization of water by organized collectives of water users known as **Pani Panchayat** was taken by Mr. Salunkhe and his wife during the early 80s.

In a country where rural people failing to get returns from their agricultural lands migrate to the big cities in search of jobs, in the 30 odd villages of Pune district where Vilasrao Salunkhe's pani panchayats are in operation, reverse migration is the order of the day. Farmers who were getting barely 50 kg of bajra and jowar per acre and whose annual income was Rs.2500 to Rs.4000 now earn Rs.10000 to Rs.1 lakh from the same land. In addition to the traditional cereals, farmers in this area grow wheat, onions, vegetables, and a variety of flowers like marigolds, lilies etc., fruits and a cash crop that is not a water guzzler. The villagers practice organic farming. They have been able to provide employment to people from the adjoining villages and farmers who had gone to Pune and other cities for work no longer migrate.



Fig.14.2: Shri Vilasrao Salunkhe (1937-2002)

The man who pioneered the radical technological and social innovations that repair and restore degraded water sheds and guarantee each family within the community an

equal share of the water harvested, was an engineer with his own factory. It was in 1972, after the terrible drought that affected some 4-lakh people of Maharashtra that Mr. Salunkhe realised the need to intervene. There was just no water available for agriculture of any kind. Even drinking water was scarce and tankers would supply water for basic needs. Travelling extensively in the drought affected area, he found villagers breaking stones for road construction in a desperate bid to earn subsistence allowance from the government. The engineer in him realised that environmental regeneration and water shed development with the full participation of the community was the only solution.

Rainfall in this region fluctuated between 250 mm and 500mm. He initially tried his ideas of water shed development on a 16-hectare plot of hillside in Naigaon village in Purandhar block. The land belonged to the temple trust but it was barren and uncultivable. He got the land from the trust on a 50-year lease and built a hut where he and his family lived and worked with the community.

Conserving soil and harvesting water was given top priority. A series of contour bunds were raised to trap water and check soil erosion. At the base of the hill slope, a percolation tank that could hold up to a million cubic feet of water was constructed. A well was dug below it and water pumped from there up the hill slope for irrigating the fields. Trees were planted in the rocky areas; fruit trees grown in the more fertile areas and grass and shrubs regenerated on lands not being cultivated. Slowly production from the land increased. As against two to four bags of grain in a year, 100 quintals was harvested and enough employment was generated for the survival of five households and their cattle. Half an acre of irrigated land could provide a man's food needs for the whole year.

The Naigaon experiment was ready for duplication in other parts of the state. Water had to be treated as common property resource with all villagers having equal rights and access to it. So the basic principles of the pani panchayat or Gram Gaurav Pratishtan were evolved. These are in operation to this day:

- Irrigation schemes are undertaken for groups of farmers, rather than for individuals. Water is allocated on the basis of number of members in a family, rather than in proportion to the land holding. A family unit five is given water rights for irrigation of one hectare of land.
- Cropping is restricted to seasonal crops with low water requirement. Crops that require perennial irrigation and large amounts of water like sugarcane, bananas and turmeric cannot be cultivated in pani panchayat areas.
- Water rights are not attached to land rights. If land is sold, the water rights revert back to the farmers' collective.
- All members of community, including the landless have right to water.
- The beneficiaries of the panchayat have to bear 20 percent of the cost of the scheme. They have to plan, administer and manage the scheme and distribute water in an equitable manner.

With farmers paying 20 percent of the cost of lift irrigation, the government provided another 50 percent and the remaining 30 percent was provided by pani panchayat as interest free loan.

In about ten years the number of lift irrigation schemes has gone up to more than 100 and most of them are functioning in a sustainable fashion. As a result of these schemes, now the villagers are able to produce two crops a year with an irrigation provision of eight months whereas earlier the land could sustain only spare amount of rain fed cultivation.



(a)



(b)

**Fig.14.3: a) An area where water harvesting was initiated by people; b) pani panchayat in progress**

Another direct impact of the pani panchayat has been the increase in employment opportunities. Many pani panchayat members were formerly working as agricultural labourers, construction workers, and stone breakers under the Government employment schemes. But after the formation of pani panchayats in the villages, employment was generated in the village and as a result, people left their jobs in order to work and settle on their own lands. The process also induced reverse migration. The reason behind the success of these schemes and their sustainability is the unity amongst the villagers and strict adherence to the rules and regulations laid down by the pani-panchayat, which is a unanimously elected body among the villagers.

### **Grameen Bank: Bangladesh**

The Grameen Bank of Bangladesh has become one of the most well-known micro credit banks in the world. Its fame is well deserved. Started in 1976, the Grameen Bank today has roughly 2.3 million borrowers. Grameen Bank has reversed the conventional banking wisdom by removing collateral requirement and created a banking system which is based on mutual trust, strict supervision, accountability, participation and creativity. Grameen Bank sees credit as an empowering agent, an enabling element in the development of socio-economic conditions of the poor who have been kept outside the banking orbit on the simple ground that they are poor and hence not bankable. According to Professor Muhammad Yunus, the founder of Grameen Bank and its Managing Director if financial resources can be made available to the poor people at terms and conditions which are appropriate and reasonable, “these millions of small people with their millions of small pursuits can add up to create the biggest development wonder”.

The “Grameen Bank Project” (Grameen means rural) came into being with the following objectives in mind:

- To extend the banking facilities to the poor men and women;
- To eliminate the exploitation of the money lenders;
- To create opportunities for self employment for the vast unutilized and under-utilized manpower resources;
- To bring the disadvantaged people within the framework of some organizational format which they can understand and operate and can find socio-political and economic strength through mutual support; and
- To reverse the age-old vicious circle of “low income, low savings, low investment” into an expanding system of “low income, credit, investment, more income, more credit, more investment, more income”.

The project demonstrated its strength in the village Jobra (a village adjacent to the – Chittagong University - the initial site of the action research project) and some of the neighbouring villages during 1976-1979. From there, with the sponsorship of the central bank of the country and support of the nationalized commercial banks, the project was extended to Tangail district (a district north of Dhaka, the capital of Bangladesh). With the success in Tangail, the project was extended to several other districts in the country. In October 1983, the Grameen Bank Project was transformed into an independent bank by a Government Ordinance with the name Grameen Bank. The Government provides 10% share capital of the Bank while 90% is held by the borrowers of the Bank.

Mohammad Yunus has transformed the lives of thousands of impoverished people through the Grameen Bank. Money is lent only to the poorest of the poor-for tools to husk rice, to buy a cow or a sewing machine. Many of the 1.2 million Grameen

borrowers, 90 percent of them women, had been reduced to begging for a living. Now most of them have a roof over their heads and can support themselves.

“I got really frustrated and out of disgust...began walking through a village just outside the campus” Yunus recalls. “I was trying to find what the poor people’s economics...is so that the village became a university for me.”

One of the first people he met was a widow with two daughters: Sufia Khatun was a landless peasant, one of the 55 million in Bangladesh a country with a population twice that number. She had borrowed money to make bamboo stools which she then sold. But as the loan had to be repaid, her daily profit was a mere two US cents. Yunus says that he “couldn't accept why anybody should make only two cents for such a beautiful skill”.

All Sufia needed to improve her income was the equivalent of four dollars. Yunus lent her the money and her profits soared to one and a quarter dollars every day. The spectacular result prompted Yunus to approach a local bank to lend Sufia money. Sufia repaid the loan and continued to make profits. But the bank refused to deal with her directly.

It was then that Yunus decided to set up a bank which would cater only to those rejected by traditional banks – the poor, the illiterate, and women. What began with a few small grants and loans from international donors has now provided over 100 million dollars in loans. Ninety eight percent of all loans are paid back. The secret of Grameen's success is the trust between the bank and its borrowers, a result of their regular interaction.

The bank also aims to raise health and environmental consciousness. Each of its members must plant at least one sapling a year as part of an afforestation programme.

“Lending money does not help the poor individual,” says Yunus “unless at the same time you help bring out inner potentials that help the individual overcome seemingly insuperable odds.”

The Grameen approach emphasizes the creation of enabling conditions in which every human being may have the opportunity to carve out dignified ways of living for her/him. GB views its loans as a means to gain command over resources. With its effective use a poor person converts her/his latent skills in generating an income and creates self-employment without having to be constrained by the limitations of wage employment. Besides, self-chosen economic activities increase the sense of participation and strengthen the base of self-help. Professor Yunus puts it as “creating favourable conditions for making a living through self-employment is a much more dignified way of solving the unemployment than initiating a system of doles and welfare payments”.

Grameen Bank in recent years has not only expanded its credit operations which are targeted at the poorest of the poor in rural Bangladesh, it has also rapidly diversified its activities. Grameen today is the focal point of a global network of institutions and individuals who provide micro-credit to fight poverty. Within Bangladesh, the Bank has undertaken major investment initiatives in those sectors where the poor have the comparative advantage in terms of their skills, enterprise and productive capacity. A number of social development oriented companies have been established under the Companies' Law to boost economic growth of vital economic sectors like agriculture, fisheries and rural industries.

### India's Milk Revolution: Operation Flood

A White Revolution that holds the promise of raising the nutritional status of underprivileged sections of the people has quietly swept India during the past few



**Fig.14.4: Women have benefited the most from the micro-credit schemes**

decades. India is now one of the largest milk producers in the world and an exporter. Milk has become India's most important farm commodity, the value of its output (in 1994-95) of Rs.500, 000 million exceeding that of paddy. These achievements have been realized against great odds: a national herd of poor yielders, crop residues and agricultural by-products as the main feed, and a lack of adequate marketing support and finance.

### **Amul and the Anand Pattern**

India's White Revolution had its origin in a single small enterprise started in Gujarat State. In 1946, at the suggestion of Sardar Vallabhbhai Patel, the farmers in Khera district formed a cooperative union to supply milk directly to the Bombay Milk Scheme (BMS). Right from the inception of the dairy cooperative, a vital link was established between the producer and Bombay's market, ensuring the incentive of a stable and remunerative price to the farmer.

The structure of the Anand pattern was established from the beginning. Initially it included two tiers, the primary village Dairy Cooperative Societies (DCS) of milk producers at the base, with a cluster of such societies forming a District Milk Producers' Union entrusted with procurement and processing. As Khera District was joined by other unions in Gujarat, an apex Federation of Unions was created to market their produce. They have their own bylaws and are managed by democratically elected boards. The facilities at all levels are entirely farmer owned. By appointing qualified technologists and professional managers, the cooperatives also made sure that the farmers' productive genius was linked to modern management and technology.

### **Operation Flood**

In contrast to Amul's remarkable progress, the government tried various animal husbandry and dairy development schemes during the period 1951-70 at a total cost of Rs. 11,400 million, but none of them yielded the desired results; many were dismal failures. It was at this juncture that the then Prime Minister of India, late Shri Lal Bahadur Shastri, paid a visit to Khera district to inaugurate a modern cattle feed plant, then – as now – the largest in the country. Spending a night in a village in the company of farmers and unaccompanied by officials, the Prime Minister saw and heard first hand from the farmers the transformation brought about by the Anand pattern of milk cooperatives. On his return to Delhi, he set in motion the effort to create Anand in all parts of India. The National Dairy Development Board (NDDB) was formed in 1965 and was charged with the responsibility of building cooperative dairies in India on the Anand pattern.

Operation Flood, the programme to replicate Anand and create a flood of milk in India's villages, was launched in 1970. The Amul experience had established, tested and proved the guiding principles for dairy development: a three-tier cooperative structure owned and controlled by farmers, professionally managed, providing the inputs for production enhancement, purchasing all the farmers milk, processing and marketing it in urban markets.

The objective of "Operation Flood" was to eliminate middlemen in milk trade and to hand over tools of socio-economic transformation in the hands of milk producers. Village-level dairy cooperatives were organized with the required physical and institutional infrastructure to support production and procure milk. Union-owned and managed modern production enhancement, processing and marketing facilities were created and metro dairies were established. The thrust was to link Bombay, Calcutta, Delhi and Madras with the country's 18 best milk sheds.

Operation Flood has helped dairy farmers direct their own development, placing control of the resources they create in their own hands. In the 25 years since the launch of Operation Flood, national milk production has more than trebled and per

capita availability almost doubled. A National Milk Grid links milk producers throughout India with consumers in over 700 towns and cities, reducing seasonal and regional price variations while ensuring that the producer gets a major share of the consumers' rupee.

The bedrock of Operation Flood has been village milk producers' cooperatives, which procure milk and provide inputs and services, making modern management and technology available to members.

Research in products, processes and biotechnologies, both in-house and in collaboration with government and non-government agencies, supports the cooperative dairy industry. Product research is aimed at diversification, extension to the product range and shelf life through suitable packaging. Processes have been established for the mechanized and hygienic production of traditional products, sweets such as well as flavoured milk drinks. These products are now marketed in long-life packaging.

Operation Flood has been one of the largest and most successful rural employment schemes in the world. Cooperative dairying means regular income to millions of small farmers. Cooperative dairying has not been merely the modernization of milk production but has larger technological, economic and social dimensions. It has created and nurtured democratic structures at grass root levels. Such gains should not be endangered.

Though, thanks to Operation Flood, India today is the largest milk producer in the world, milk production still falls far short of national requirements for adequate nutrition. As against the present production of about 74 million tones, national requirement will be as high as 173 million tones by 2020. Milk productivity per animal in India (1,250kg/lactation) is still very poor compared to international levels (2,038 kg/lactation) due to gradual breed deterioration. Thus, while we have every reason to feel gratified with the success achieved so far, there is no room for complacency. We must build on the achievements of Operation Flood.

With these examples of peoples' collective power to tackle the problems of boosting productivity in the agricultural sector and alleviating poverty, we come to an end of this unit and summarise its contents.

---

## 14.6 SUMMARY

---

- The development of infrastructure such as rural transport, roads, and facilities for storage, irrigation and marketing is an area of top priority in order to improve agricultural productivity in developing countries, in general and South Asian Countries, in particular.
- The governments have devised specific policies and programme to provide agricultural inputs, such as seeds, fertilizers, power and irrigation water at subsidized prices and have made public investments in agricultural research, and extension. The governments also formulate national agricultural policies of price support, procurement, subsidies, investments, credits, insurance, taxation and trade and fix minimum support prices for major commodities each year.
- Modern agriculture is knowledge-based, in which education at all levels, particularly higher and vocational education has an important role. The developments in science and technology, particularly information technology have created immense possibilities of reaching information and education to billions of rural masses irrespective of geographic, administrative, socio-political and economic constraints. The new technology also has the potential to link policy makers, administrators, researchers and commercial set-ups to the

farmers, thereby putting agriculture in the front lines of economic growth of these countries.

- The active involvement of people is an important ingredient in bringing about an improvement in the agricultural sector as has been illustrated by three case studies, namely, the Pani Panchayat, Operation Flood and Grameen Bank.

---

## **14.7 TERMINAL QUESTIONS**

---

1. Discuss the major socio-economic factors that influence the agricultural sector in a developing country.
2. Outline the measures that respective governments can take to accelerate the growth of agricultural sector in the South Asian countries.
3. Explain what you understand by institutional capacity building.
4. What are the motivations and common features in the case studies described in Sec.14.5 that led to their success?