
UNIT 16 COOPERATION AND PARTNERSHIP

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16.1 INTRODUCTION

Sustainable development is the basis of a new society that is based on humanistic values, democratic politics, respect for the natural world, human welfare and socio-cultural developmental goals. In order to realise this, the cooperation and participation of the individuals and communities are extremely important.

The declaration of the historic Earth Summit at Rio de Janeiro proclaimed that:

‘Human beings are the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. The right to development must be fulfilled so as to equitably meet developmental needs of the present and future generations. States should cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the earth ecosystems. They should cooperate to strengthen indigenous capacity building for sustainable development by improving scientific understanding through exchange of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies. States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries to better address the problems of environmental degradation. Environmental issues are best handled with the participation of all concerned citizens. At the national level, each individual should have appropriate access to information concerning the environment that is held by the public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision making processes. States should facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy shall be provided. Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development. The creativity, ideals and courage of the youth of the world should be mobilised to forge a global partnership in order to achieve sustainable development and a better future for all’.

Sustainable development involves socio-economic development and the environmental issues linked with it. It is potentially measurable according to the attributes of non decrease of natural resources over time and increase or improvement in measures of human well being such as income, education, health and basic freedoms. The process of sustainable development encompasses many sectors and disciplines including water, energy, agriculture, biodiversity, industry, education, science and technology and others. Realising this developmental process requires an organised and coordinated effort in an institutionalised way that involves all sectors. In order to achieve all the broad goals of sustainable development, diagnosis of the problems, formulating environmentally sound policies and sustained commitment is required. These institutions need to be linked with their counterparts in other countries through a network of international partnerships that reinforce and strengthen national efforts and permit cooperation with respect to larger issues of global sustainability.

Partnerships of ministries within governments, partnerships within governments, partnerships between governments and civil society and most importantly partnerships among governments, the world of finance and the private sector are required. Partnerships that link business, science, education, professional associations, community and grassroots organisations with each other are also required towards realising this goal. This unit deals with cooperation and partnerships among various organisations towards sustainable development.

Objectives

After studying this unit, you should be able to:

- discuss the efforts of the governmental and non governmental organisations towards sustainable development;
- explain the importance of cooperation and partnership by the local people for sustainable development; and
- suggest methods at the grassroots levels to bring about sustainable development.

16.2 PARTICIPATION OF THE GOVERNMENT

The governments have a major role to play in formulating and executing policies related to environmental issues and sustainable development. Therefore, they must prioritise where to begin the process based on their individual environment. Some of the pressing concerns that need to be addressed are:

1. Population control through generation of awareness and active promotion of development opportunities for women.
2. Reduction of unemployment through strategies and indigenous methods adapted to local culture and environment.
3. Protection of clean water and air, arable land and food crops.
4. Reversal of the rapid extinction of species and measures to protect and enhance the biodiversity of local ecosystems.
5. Development of energy and transportation systems that rely on renewable sources and a phase out of the use of fossil fuels.
6. Redesign of the urban areas for sustainability.
7. Sustainable rural development.

Although the governments are already engaged in sustainable development at various stages, the following measures need to be adopted to accelerate the programmes related to environmental protection.

1. National level conferences of ministers of different departments, senior officials, cooperative leaders and other prominent leaders and environmentalists should be held periodically to follow up, discuss and formulate a national policy on the subject. The government should encourage and motivate the cooperatives, non-governmental organisations and representatives of local indigenous communities to participate in such programs.
2. Legal support should be provided by the government, to individuals and organisations engaged in environment related activities.
3. The government should encourage, promote and financially support some of the pilot projects in these sectors and if found successful, replicated in other parts of the country.
4. The government should collaborate extensively with other countries for development of technology that is required for sustainable development and environmental protection.

16.3 NON-GOVERNMENTAL ORGANISATIONS

Non Governmental Organisations (NGOs) are a form of private voluntary organisations. The term NGO was used for the first time in 1953 by the United Nations (UN) and refers to those non-state organisations that interface with the UN agencies and serve as their sounding boards. Today, NGOs mean any voluntary formation not part of the government including those that are a part of social movements. They are composed of volunteers or paid career professionals who serve the poor and influence the public policy. These independent organisations possess expertise, experience and capability in various fields that can be tapped for use in sustainable development programmes. In recent years, they have formed national federations and built international linkages that give them a strong voice in national and international affairs.

There are several international NGOs in Asia that have taken up the issues of environment and sustainable development. Some of them are Oxfam, CARE, Ford Foundation, etc. These NGOs are working towards various developmental projects in the field of health and family welfare, human resource development with special attention to women, education, information, ecology, biodiversity conservation, energy etc with funds from the government and international agencies. They are also working with the people at the grassroots level towards generating awareness regarding environmental issues. Two of the biggest NGOs in Asia are the Sarvodaya Shramdana Movement (SSM) founded in 1950s by A.T. Ariyaratne of Sri Lanka and Bangladesh Rural Advancement Committee (BRAC) founded by F H Abed. The activities of BRAC cover 15,000 villages of Bangladesh and that of SSM cover 8000 villages in Sri Lanka.



Fig.16.1: a) The founder of BRAC (Source: www.brac.net); b) the founder of Sarvodaya (Source: www.sarvodaya.org)

In India, voluntary work began in the nineteenth century with social reform movements. It became more popular during the British rule as Indians joined the fight for independence. The philosophy of Mahatma Gandhi further strengthened the voluntary movements and inspired thousands of young women and men to work among the rural poor, scheduled castes and those deprived of education, health, employment and income-generation. In 1950s several voluntary organisations were established for relief and rehabilitation of people affected by drought, floods and other disasters. In the 1960s and 70s, the issues of education, health care and drinking water were taken up by these organisations. During the mid 1970s a new kind of voluntary agency arose called the Social Action Groups. These groups comprising of four to five men and women worked with the poor and oppressed to fight against poverty, deprivation and unemployment. They analysed the socio-economic conditions of the poor and helped them in becoming organised besides educating them on their legal rights.

Today there are several thousand voluntary agencies in India performing a wide variety of roles like relief and rehabilitation, providing alternative services in education, health, employment avenues to youth, afforestation and other environmental issues etc. Many of them are involved in training, documentation and networking and have helped in encouraging cooperation and linking of different grassroots activists and organisations on issues of common concern. These organisations play an important role in raising awareness among the poor and the oppressed. They encourage these people to develop the sense of collective empowerment in order to demand their rights for their upliftment.

The Earth Summit emphasised the active participation of the NGOs in the process of sustainable development. A network of such organisations is essential with cooperation between NGOs and the people at the grassroots level, NGOs and the government and NGOs with other NGOs. The involvement of these organisations at all levels from policy-making and decision-making to implementation is required.

SAQ 1

Select an area (e.g., health, natural resources, agriculture, etc.) that is relevant for the developmental needs of your region and discuss the kind of partnership that should be fostered between the government agencies and the NGOs to meet the goals of sustainable development in that area.

16.4 COOPERATIVES AND SUSTAINABLE DEVELOPMENT

Cooperatives constitute the core feature of community based economic development. Communities taking the initiative of sustainable development must understand how their economic enterprises (agriculture and industry) that contribute to meeting basic needs (food, health, education, transportation etc.), promote local quality of life while sustaining the ecological base. There have been several cases of collapse of the local economies due to the depletion of the natural resources. Towards this, many local groups have come together as collective communities and are formed as cooperatives to devise and develop new ways to live in a sustainable manner. They undertake projects that work with a participatory approach and aim to restore and revitalise the cultural institutions and practices.

16.4.1 Cooperation in Ancient India

Cooperation has been practiced in India since time immemorial. In ancient India, four predominant forms of cooperatives existed: *Kula*, *Grama*, *Sreni* and *Jati*.

Kula was the first form of cooperative activity to emerge at the individual level. It was a political and socio-economic organisation in which kinsmen, friends and relatives worked cooperatively to promote their economic, social and political interests.

After *Kula* became a stabilised unit, cooperation at the level of community was called *Grama* emerged. The *Grama Sabha* was a cooperative organisation which looked after the improvement and maintenance of the village lands, forests, pastures and gardens, roads, highways and was concerned with the economic and social progress of the village. Artisans and cultivators worked jointly for the purpose of cultivation and the manufacture of tools, equipments and other goods required by the community.

The *Sreni* developed later and was a cooperative and economic organisation of artisans, industrial and handicraft workers, merchants, traders, bankers, agriculturists, construction workers etc. It also functioned as a charitable institution.

The *Jati* was a cooperative organisation mostly for social purposes such as education, charity and relief work; economic activities were also carried out.

16.4.2 Cooperative Movement in India

After the attainment of Independence in 1947, India adopted the policy of planned economic development, providing individual liberty, equality and economic minimum to its citizens. Cooperation was considered to be an effective instrument for achieving the objectives of economic development of India and emphasis was given to cooperation in all the Five Year Plans. As a result, the cooperative movement has grown in size and has diversified primarily from agriculture to other sectors like milk production, processing and distribution, fertilisers, sugar and oilseed production and distribution. Other important sectors where cooperatives are found are credit, marketing, industries, storage, processing, consumers, farming, housing, transport, irrigation, electricity supply, engineering, cooperatives for weaker sections, cooperative rural banks, poultry, fishery, coir, silk, honey, handloom, labour control, forest labourers, taxi, auto and rickshaw drivers, washermen, barber, printing press and special cooperatives for hill and tribal areas. Some cooperatives have also adopted villages for the all round development. The most illustrious and successful cooperative movement for the sustainable development of rural poor in India is the Operation Flood that has been organised by the cooperatives AMUL and National Dairy Development Board (NDDB).



Fig.16.2: Amul is a very successful cooperative in the milk sector in India

16.4.3 Structure of Cooperative Institutions

The apex body of the cooperative movement is the National Cooperative Union of India (NCUI), and all state and national level cooperatives institutions are affiliated to it. There are approximately 4, 00,000 societies and 20 national and 260 state level organisations and federations. There is a national union, national council for cooperative training and a national training institution. There are 90 cooperative training colleges and centres for training and education and 2389 cooperative and land development banks.

The cooperative movement in India is three tiered and comprises of Primary Societies, State-level Cooperatives and National Cooperative Federations.

1. **Primary Society:** It consists of individuals who constitute the society and is at the grassroots level. In rural areas it consists of farmers and artisans and in urban areas it is formed by consumers, workers and artisans, taxi and auto operators, banks, employees etc.
2. **State Level Cooperative Societies/Federations:** It is formed from the primary societies that federate into district level societies. It comprises of the cooperative and land development banks, agricultural marketing federations, industrial federations, housing federations, sugar federations etc. There are state cooperative unions that undertake activities like education, publicity and coordination of various activities. They also act as liaison between the government and the cooperative movement.
3. **National Level Cooperative Federations:** These federations have come up in many sectors like agricultural marketing, industry, consumers etc. However, their primary activity is to promote and coordinate various societies and also to provide technical support to them. They also undertake business contracts with other organisations in India and abroad for import and export.

16.4.4 Function of Cooperatives

The cooperatives can be broadly divided into two types based on their functions:

- A. Agricultural credit cooperatives
- B. Non-Agricultural credit cooperatives

- A. **Agricultural Credit Cooperatives:** The cooperative movement in India originated with the agricultural credit cooperatives with an aim to uplift the poor agriculturists, artisans and other persons of limited means. Agriculturists are economically poor and are exploited by the village moneylender. So they formed cooperatives or credit societies at the village level. The government opened central cooperative banks at district level and state cooperative banks (Apex Banks) at the state level for agricultural credit to the farmers to buy implements, seeds, fertilisers etc. These banks also fund programmes that are ecological development oriented.

The primary cooperative land development banks at sub divisional level and state cooperative land development banks at the state level provide the farmers with long term credit for agricultural development.

- B. **Non-Agricultural Credit Cooperatives :** The Non-Agricultural credit cooperatives include cooperative marketing, housing cooperatives, dairy cooperatives, consumer cooperatives etc.
 - 1) **Cooperative marketing:** A group of producers come together in this system to carry out the processes involved in delivering goods to the consumer. In other words, a cooperative marketing society is a voluntary association of cultivators, organised under the principles of cooperation for profitable

marketing of their produce. The cooperative marketing agency promotes economic growth and welfare of the member producers.

Its main functions are to:

1. Market the produce and assure regular trade outlets for the produce.
2. Facilitate storage, pooling and transport of produce.
3. Supply the farm requirements like fertilisers and agricultural implement.
4. Provide credit facilities to members.
5. Act as agents of the government for procurement of food grains and implementation of price support policy.
6. Promote and protect the economic interests of its members by encouraging self help, better production and best possible price.

- 2) Consumer Cooperative:** It is a voluntary organisation of consumers that procures goods in bulk directly from the production centre and distributes them among the members at fair price. These cooperatives undertake not only production but also the wholesale and retail processing of consumer goods. Departmental stores or Super Bazaars are examples of such cooperatives.

Their objectives are:

1. To serve the members and customers by providing good quality household consumer goods at a reasonable price.
2. To stabilise the price line and check the exploitation of consumers by private businessmen.
3. To protect the interests of its members.

- 3) Industrial Cooperatives:** The cottage and small scale industries occupy a significant position in our economy. They generate income and employment with small capital investment. The artisans, craftsmen, skilled workers, industrial labourers and small industrialists have come together to form cooperative organisations known as industrial cooperatives. They have been formed either for undertaking production and marketing or for providing services to the members. The prime objective is to develop or improve the socio-economic position of the members. The main functions of the industrial cooperatives are to:

1. Supply raw materials, tools, equipments, machinery etc. and provide basic and technical training facilities to the members.
2. Market goods produced by the members.
3. Provide loans for production of goods, accept deposits and develop the habit of thrift and savings among the members.

Some of the industrial cooperatives are Weavers Cooperative Society, Spinning Mills, Industrial Cooperative Banks and Industrial Estates.

- 4) Dairy Cooperatives:** The dairy cooperatives are organised into a network of primary, district, state and national level federations involving around six million producers. The tremendous success of the Anand pattern of dairy development in Gujarat has led the NDDB to replicate the pattern across the country. The functions of these cooperatives are to:

1. Create a network of policy makers, farmers, professionals and technologists.

2. Make available the best technology to the rural milk producers.
3. Provide a support system to the milk producers without disturbing their agro-economic systems.
4. Establish marketing and distribution system reaching the farthest corners of the country.
5. Ensure fair profit to the members and quality products to the consumers.

The economic development brought about by the dairy revolution also brought about social and institutional developments. Members of the cooperatives receive a dividend along with the profits and the staff gets a bonus. Out of the profits, funds are given for education, health and family welfare, charity, animal husbandry development, tree plantation and cooperative propaganda.

5) **Housing Cooperatives:** These cooperatives provide affordable housing with the users' participation. There are more than 60,000 housing societies in the country. The cooperative provides:

1. A forum for dealing with the technical, financial and practical problems of housing and means to solve them.
2. Coordination in planning, construction, expert advice and services.
3. Financial and organisational guidance.



TYPES OF NON-AGRICULTURAL COOPERATIVES

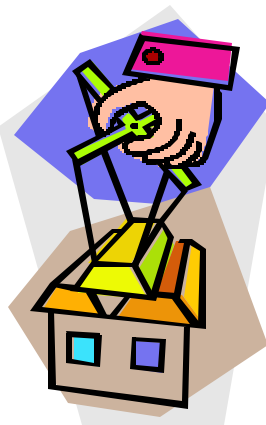


Fig.16.3: Non-agricultural cooperatives

16.4.5 Role of Cooperatives in Sustainable Development

Cooperative societies, as we have seen, are organisations that connect the people at the grassroots level to the highest level of the government. Therefore, the cooperatives have an extremely important role to play in the process of sustainable development. They can generate awareness among the people and educate and inform them regarding the environmental issues. They can encourage the people to participate to mitigate the problems and establish a sustainable society. These cooperatives can play an important role in the following ways:

A) Creating awareness among people on :

1. The consequences of increased population and collaborate with the governments to take up population control measures.
2. The consequences of indiscriminate felling of trees, wasteful use of water, indiscriminate mining and digging up soil for brick kilns.

B) Educating and informing people on:

1. Handling of chemical fertilisers, insecticides and pesticides.
2. Use of alternative sources of energy for cooking, heating and lighting like encouraging the use of biogas for cooking.
3. Disposal of garbage and recycling of waste.

C) Encourage people to:

1. Develop social forestry programmes and management and reclamation of wasteland.
2. Participate in community development programmes like rural sanitation, cleaning of schools and village premises, installation and repair of water taps etc.
3. Developing health, hygiene and family welfare and education programmes.

SAQ 2

Discuss the role of cooperatives in sustainable development. Give examples or case studies in favour of your argument.

16.5 TECHNOLOGY NETWORKS

Science and Technology (S&T) and Information and Communication Technology (ICT) have revolutionised the pace of development of the society. In order to reach the farthest corners of the country and to bring about sustainable development in these areas, a strong network of S&T, ICT and the common people needs to be established.

16.5.1 Science and Technology

A coordinated effort has to be made to harness modern S&T for rural development with the active cooperation and participation of the rural people. New innovative technologies that suit the rural milieu need to be developed with the active participation, knowledge and feedback from the rural people. In order to take these technological inventions to the remote undeveloped rural communities, a strong network and participation of scientists, research and development (R&D) institutions, technology transfer agencies, universities, social scientists, environmentalists and the rural beneficiaries needs to be set up. The Indian Council of Agricultural Research (ICAR) and other agricultural universities have contributed significantly by involving the farmers and helped in achieving self sufficiency in food grains. Similar efforts should be carried out in other sectors like handlooms, leather, pottery, woodwork,

ironwork and other such craft-based occupations. The National Institute of Science, Technology and Development Studies (NISTADS) has evolved a viable technology delivery model by creating a link between the scientists of national laboratories, local administrations and the rural artisans. The experiments on the feasibility of this model were conducted in two states of Haryana and West Bengal. The experiments were extremely successful and this interactive model of technology transfer to rural areas can be adapted effectively in other parts of the country. NISTADS has since worked towards familiarising the rural artisans with the scientific and technological development of their wares with the help of scientists of R&D laboratories. Efforts are underway by the other laboratories of the Council of Scientific and Industrial Research (CSIR) to generate and transfer technologies suitable to upgrade the indigenous practices. The Central Institute of Medicinal and Aromatic Plants (CIMAP) has developed and transferred technologies for cultivation of medicinal plants to the rural farmers with an aim to generate employment among the rural youth.

16.5.2 Information and Communication

Information and Communication Technology (ICT) comprises of telecommunications, computers and the Internet, combined with the broadcasting media that help to connect the remote and underdeveloped societies into the global mainstream. ICT has, at present, the strongest impact on the society worldwide. It affects all of us on four levels: individuals, groups, organisations and networks. Networking on a global scale is leading to strong cooperation of large enterprises and countries. The economies of many countries are becoming dependent on electronic commerce or e-commerce.

ICT is seen as an effective tool to empower and educate communities especially in rural areas in India. The setting up of the telecommunications and Internet facilities in the Indian villages has led to better connectivity of the rural people with the mainstream. This enhanced connectivity will lead to strong participation of these people in several decision making processes related to their welfare. They can share their experiences, ideas and indigenous innovations with the mainstream policy makers, funding agencies, scientists, social scientists and environmentalists. Better connectivity would ensure economic prosperity and strong awareness about issues concerning them and they can voice their opinions on the decisions affecting them. Thus ICT can bring about an increased participation of the rural people in sustainable development.

16.6 REGIONAL COOPERATION AND PARTNERSHIP IN SOUTH ASIA

As early as 1987, the South Asian Association for Regional Cooperation (SAARC) conducted a study on the Causes and Consequences of Natural Disasters and the Protection and Preservation of the Environment and in 1988 it conducted a joint study on the effects of greenhouse gases and their impact on the region. It was concluded that cooperation between the countries is required to manage and avert the natural disasters like floods. These involve providing real-time hydrologic information on floods for disaster prevention or providing other structural means of flood control. It was also concluded that the mountain regions with their forests have a significant role to play in mitigating greenhouse gas effects by acting as carbon sinks. The rivers originating from the mountains can provide cost effective and clean hydro-energy options for the development of the region.

The prospects of regional cooperation in South Asia for the sustainable development of this region are mainly in the broad areas of air and water pollution management, water and energy development, flood prevention, scientific collaboration and trans-boundary biodiversity conservation.

1. **Water Resource Sharing:** Many rivers such as Indus, Ganga, Brahmaputra and Meghna originate in the Himalayas and provide sustenance to many millions of

people in the South Asian countries of Pakistan, India, Nepal and Bangladesh. Over 600 million people depend on these rivers for irrigation, hydroelectricity, fishery, inland navigation and the sustenance of wetlands and their biodiversity. The sustainable development of these large river basins requires consensus building and agreements between the countries for sharing and using of the resources. Several bilateral treaties exist between the SAARC countries regarding sharing of the water resources like the Indus Water Treaty between India and Pakistan, Pancheswar between Nepal and India and the Joint River Commission between India and Bangladesh. As the river systems are of trans-boundary nature, regional cooperation is needed to develop water management projects that will benefit all the countries. Collective efforts are needed to exchange data and information as well as to develop projects such as hydropower and irrigation for the economic development of the whole region.

2. **Flood Control:** The Ganga-Brahmaputra-Meghna (GBM) basin is prone to recurrent flood disasters. The economically disadvantaged people, living in the flood-prone lowlands lack other options and the resources to quickly respond and recover from flood disasters. Thus, flooding is one of the root causes of poverty. Therefore, reduction in the impact due to floods is an indispensable component of poverty reduction strategy besides saving the lives of the poor in the GBM region. The preparedness of the people to deal with floods is required. For this, forecasting of floods is extremely essential. This can be achieved through the cooperation and exchange of information and hydrometeorological data between upstream and downstream countries. At present, there are bilateral agreements between India and Nepal and Bangladesh, as well as a recent agreement between India and China to exchange high flow data and information.
3. **Air pollution:** With the discovery of the Asian Brown Cloud (a persistent winter haze extending over much of the Northern Indian Ocean, from the Arabian sea to the Bay of Bengal), concerns about the rising air pollution in the South Asian region increased. These short lived pollutants are considered to be a hazard to the global air quality and contribute to climate change. Similarly dependence on the fossil fuels by the poor countries of the region for cooking, heating and transport has contributed immensely to the air pollution in the region. Regional cooperation is required for the exchange of data and information, air pollution monitoring and formulate policies and measures to alleviate it.
4. **Energy:** Energy resources like hydro-power and natural gas are available in the region, but their development, efficient distribution and utilisation will require cooperation and trade among the region's countries. Cooperating effectively to develop energy resources for mutual benefit will also attract considerable investment required for economic growth. The South Asia Regional Initiative (SARI) on energy development is a programme initiated by United States Agency for International Development (USAID) to encourage the cooperation and eventual trade in energy resources among the countries of South Asia. This programme will encourage private sector investment and develop market that will be required for trade in electricity and natural gas. By promoting regional cooperation, the programme can help ease political tensions between countries, as well as promote the use of clean energy technologies to reduce greenhouse gas emissions. At the same time, the programme will help stimulate economic development in the region.
5. **Science and Technology:** The SAARC study group on S&T cooperation had identified a number of priority areas for cooperation among the regional countries. They are: science policy, R & D in non-conventional and renewable sources of energy, technology transfer and adaptation of appropriate technology, survey of natural resources and remote sensing, forestry development and erosion control, mining, micro electronics, instrumentation, solar technology, genetic engineering,

environment with special reference to pollution control and informatics. Some of the methodologies to be adopted are:

1. exchange of scientific information, materials, designs, etc. and transfer of technology.
2. exchange visits of scientists/technologists and their training.
3. collaborative/joint research projects on common problems and assistance through experts/consultants.
4. creating a network of cooperating institutions.

The countries of South Asian region have imported technologies for many years and the information on these technologies is available to them. This information could be shared with other countries and appropriate modifications could be made in these technologies to make them suitable for use in the environment of these countries. India has developed considerable expertise in the small scale sector much of which is easily transferable and very appropriate to the needs of other countries of this region especially in leather, textiles, household and consumer goods, agricultural equipments and electronics. In the area of waste product utilisation, a number of techniques developed by the Indian industry could be applied in other countries of the region. Technological know-how in some important sectors like flood control, ground water surveys and oil and natural gas exploration, which have been developed in India, could very easily find application in other countries of the region.



Fig.16.4: Some areas of regional cooperation in South Asia

SAQ 3

Explain the need and importance of regional cooperation for the sustainable development of countries in the SAARC region.

16.7 PEOPLE'S PARTICIPATION AND MOVEMENTS

The developing countries have adopted an economic development policy that is modelled on the western ideology of industrialisation. These developmental processes include infra-structural projects such as construction of hydroelectric dams or roads, extraction of natural resources such as wood and minerals, and agricultural production for trade on the international market. The methods employed are wasteful and destructive to the local environment. This has led to local resistance and global political pressure by social and environmental activist groups.

Indigenous people, the poor and the minority have led popular movements to protest against a number of environmental injustices in the developing countries. During the last two decades, they have mounted protests against the use of poor communities as dumping grounds for toxic wastes or as sites for location of dangerous industries. These groups found their voice at the 1992 Earth Summit at Rio de Janeiro where an understanding was reached that neither economic development nor environmental protection could be reached without people's participation at the grassroots level.

In India, the Chipko Andolan to stop the felling of trees in the Himalayas and Narmada Bachao Aandolan to protest against the construction of dams on the Narmada River are two such movements that involved millions of people who participated to protest against the environmental injustices of the vested interests.

People have participated over the years in several protests that involved the protection of the environment and have taken legal help in attaining justice e.g., the Bhopal gas victims. The public interest litigations (PIL) have helped tremendously in hastening the process of getting justice. In India, the Supreme Court, on the basis of a PIL, ordered the closure of several polluting industrial units and tanneries along the Ganga.

After independence, there has been a growing role of the state in India. Authoritarian forces have gained strength that control resources and developmental processes. In effect, voluntary participation of the people has reduced and people have become heavily dependent on the state. This has slowed the process of development considerably. The meaning of voluntarism and peoples' participation needs to be rediscovered and implemented in order to reduce the dependency on the state. People should be able to exercise their own control on their own environments to adopt the path of sustainable development.

16.8 SUMMARY

- The issues of sustainable development and socio-economic development are closely interlinked and require the cooperation and partnerships between the different sectors of agriculture, natural resources, education, S&T, industry etc. Partnerships that link the government, industry, funding agencies and R&D are required. Indigenous people at the grassroots level need to participate to realise the goal of sustainable development.
- Cooperatives and NGOs help considerably in the upliftment of the socio-economic conditions of the rural poor. These organisations also adopt environment friendly technologies for their functioning and generate awareness among people regarding environmental issues. S&T can be used to further develop the existing rural technologies for their optimum use; therefore, innovations by the indigenous people should be similarly upgraded by collaboration with the scientists. ICT helps to connect the people in remote areas with the mainstream. Thus they can have access to knowledge and information that can be used for their development. Similarly they can share their indigenous knowledge and technologies with the mainstream. This process of exchange of

knowledge and information would lead to the development of technologies that can be used in the local milieu successfully.

- Regional cooperation between the South Asian countries is essential for the development of this region. These countries share water resources that have the potential to generate clean source of energy like hydro electricity. Effective management and cooperation is required to develop the energy sources from water and natural gas and to control flood and pollution in this region. India has developed expertise in small scale industry sector and know-how in groundwater and oil exploration that can be transferred to the countries of this region for their development.

16.9 TERMINAL QUESTIONS

1. Explain the role of non-governmental organisations in sustainable development.
2. How can technology contribute to development?
3. Regional cooperation is required for the development of the South Asian countries. Explain.
4. How have the peoples' movements contributed to the betterment of the environment?

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