
UNIT 25 LAND: ACCESS, CONTROL AND MANAGEMENT

Structure

- 25.0 Objectives
- 25.1 Introduction
- 25.2 Physiographic Features of Land in India
- 25.3 Land Utilisation and Related Ecological Problems
 - 25.3.1 Grazing Lands and Problems of People Dependent on Animal Husbandry
 - 25.3.2 Wastelands and their Effect on Rural Population
 - 25.3.3 Croplands, the Main Source of Sustenance for the People
- 25.4 Access to Land and its Control and Management by the People
 - 25.4.1 Inequitable Access to Landholdings by the People
 - 25.4.2 Legal Measures for Land Reforms, Implications for Cultivators and for Effective Use of Land
- 25.5 Rise of the Agricultural Labourers and Other Consequences of Land Reforms
- 25.6 Land and Urban Development in India
- 25.7 People's Participation in the Control and Management of Land in Rural and Urban Areas
 - 25.7.1 Peasant Movements
 - 25.7.2 People's Awareness of Problems Related to Urban Land Use
- 25.8 Let Us Sum Up
- 25.9 Key Words
- 25.10 Further Readings
- 25.11 Answers to Check Your Progress

25.0 OBJECTIVES

After reading this unit you should be able to:

- Describe physiographic features of land in India;
- Discuss the land use pattern and ecological problems related to grazing lands, wastelands and croplands;
- Outline the nature of access to land and legal measures for land reforms;
- Explain the rise of agricultural labourers;
- Relate land use to urban development in India; and
- Analyse the form of people's participation in control and management of land in the rural and urban areas.

25.1 INTRODUCTION

This is the first unit of Block 7 on **Ecology and Resources**. As has been explained to you in the Block Introduction, we need to act well in time to stop depletion of such resources as land, water and forests. This is to maintain the ecological balance on which rests the survival of life on the earth. Unit 25 is devoted to a discussion of land as a basic resource. Land is a significant factor in any society and in India it is in a special way tied to people's imagination and livelihood. In this unit we have shown the difference between availability of land and its access to people. Similarly, we have also discussed the problems related to control and management of a resource. As Indian people are still dependent on an agricultural economy, relatively more attention is paid to rural land use.

The first section of the unit describes physiographic features of land in India. It is followed by a long discussion of ecological problems related to utilisation of grazing lands, wastelands and croplands. This discussion provides a context to analyse access to land, its control and management by the people. Agricultural reforms, meant to improve people's access to land has in fact resulted in creation of a class of agricultural labourers (Section 25.5). The next section of the unit draws our attention to issues related to land and growth of the urban sector in India. Finally, we have discussed people's participation in the control and management of land in rural and urban areas.

25.2 PHYSIOGRAPHIC FEATURES OF LAND IN INDIA

The landmass comprising the Indian subcontinent is a large peninsula, which covers an area of 328 million hectares (mha). It is the world's seventh largest country and supports a population of 1002 million (2001 figure). Its physiographic features (see Chaturvedi 1985: 13-19) are as follows:

- i) In the north, India is bordered by the Himalayan mountains which stretch 250 kilometres in length and 200 to 400 kilometres in width. It has a coastline 5,700 kilometres long. India, a large peninsula with high mountain on the north, presents an unparalleled hydrologic-climatic environment.
- ii) The great Indo-Gangetic Plains stretch at the feet of the north Himalayan mountains. These plains are built up from rivers flowing from the Himalayas. The alluvium, or the sedimentary matter deposited in the valleys of large rivers, was laid down in many geological phases. The plains are thousands of metres deep and form one fourth of the total land area of India. They have an area of 652,000 square kilometers.
- iii) The Central Highlands comprise a block of mountains, hill and plateaux. The area is intersected by valleys which are covered with forests (now disappearing at a fast speed). The Centre Highlands cover one-sixth of the total land area of India.
- iv) The triangle shaped peninsular plateau covers a little more than one-third of the total land area of India. Its elevation ranges from 300 to 900 metres and extensive plains cover its surface. The area is fairly well drained by several rivers which flow from west to east.

25.3 LAND UTILISATION AND RELATED ECOLOGICAL PROBLEMS

The land mass, described above in terms of its physical features, can be broadly divided into four categories from the point of view of land use. These parts are:

- i) grazing lands,
- ii) wastelands,
- iii) croplands, and
- iv) forests.

Of these, the forest lands are the subject of Unit 27. This is the reason why we will talk in this unit only about grazing lands, wastelands, and croplands. Our focus in this unit is on the human and environmental problems arising out of the present state of India's land, its access, control and management. Most of the information about the three types of land given in this unit, is based on *The State of India's Environment 1984-85*, the Second Citizens' Report (1985) and Report of the National Commission on Agriculture, 1976 (volume XV). We now begin with the present state of the grazing lands.

25.3.1 Grazing Lands and Problems Dependent on Animal Husbandry

Of all the components of India's land, especially the grazing lands face the greatest danger of losing their identity. Large portions of former grazing lands have not come under regular farming. You may ask 'Where are grazing lands in India?'

The best grazing lands in India exist in areas which report an unusual rainfall of more than 1,200 mm and a dry season of just about four months. Grazing lands or vegetation formation of typical grasslands are found in the temperate climate zone of the Himalayas. The remaining grass lands of India are the steppes and savannas.

At altitudes of about 1000 metres, grazing lands take the shape of savannas. A savanna is an extensive open grassy plain or meadow with scattered shrubs and trees. Savannas with trees and all tall grasses shelter large wild animals (cattle). The steppes are extensive level plans without trees. They are found in areas of sandy and saline soils in western Rajasthan. Here, the grass layer is quite thin and woody plants are few and far between. The forage or fodder in the steppes is available only during the brief wet season.

Forage in the savannas (extensive open grassy plains or meadows with scattered shrub and trees) of central and eastern parts of Rajasthan is mainly available from grasses which grow during the wet season. Some fodder or forage in the dry months is also obtained from the regrowth of grasses, in the dry months. As a result of overgrazing, the savannas reach a stage of degradation which makes them look like steppes. For example, in the Deccan the largest savanna comprises shrubs, but the soil has now become almost bare on the slopes of hills.

The ecosystems of both savannas and steppes are generated under pressure from human populations. In India only in inaccessible and remote hill areas

we do find a naturally formed savanna or a steppe. Mostly due the extensive use by animals and/or human beings various forest ecosystems degenerate and take the shape of savannas. The savannas in turn degrade into pseudo-steppes.

Activity 1

On a map of India, indicate first the areas where you find the presence of savannas and steppes in their natural form. Then show the degraded forests which have now become savannas and also show the degraded savannas which have become pseudo-steppes.

Much of India’s grazing land is now under agriculture. Only about 13 million hectares are officially classified as permanent grazing lands. If you look at India’s animal population (see Table 25.01), you can easily make out that this large mass of livestock population would need fodder in really huge quantities. The available 13 million hectares of grazing lands are simply not enough. As a result, the animals search or look around for fodder. They eat whatever they can find on fallow and uncultivated lands. They also scrounge in tropical forest lands and uncultivable wastelands. It is claimed (see CSE 1985: 3) that ‘almost all accessible vegetation in more than half of the total land area of the country is grazed by livestock’. Only one district in Mizoram and a few in Gujarat, Haryana, Maharashtra and Punjab have enough green fodder. In the rest of India, most animals feed on crop residues and forage on follow lands, unused *panchayat* lands, riverbanks, roadsides, wastelands and forests. Surviving on this kind of access to food, nine out of ten animals in the country still go hungry.

Table 25.01: Livestock Population in India (in millions)

	1951	1961	1972	1977	1982	1991	2001
Cattle	155.24	175.56	178.87	180.00	192.50	203.50	219.64
Buffaloes	43.40	51.20	57.94	91.96	69.80	82.70	94.13
Sheep	38.96	40.22	39.99	40.91	48.80	49.70	58.20
Goats	447.00	60.08	67.52	75.62	95.30	114.20	17.50

Source: Data from 1951 to 1961 from the National Commission on Agriculture and the rest from the Twelfth All-India Livestock Census. In this unit, the table is, with due acknowledgement, taken from Agrawal 1985: 3); for 1991, 2001 FAO cf. www.cifti.com

Degradation of land owing to overgrazing generates desert-like conditions. This causes a chain reaction because of lack of grazing lands reduces animal productivity, which in turn proves to be economically disastrous for human beings who practice animal husbandry. This is the process through which pastoral nomadic groups are forced to become landless labourers. The culprit is ‘overgrazing’ which is caused by the fact of too many animals and too little grass.

As the grazing lands have decreased in area, the planners, policy makers and implementers in the government have taken little action to save the quality and extent of even the existing grazing lands. Many irrigation schemes launched into croplands without paying attention to the rehabilitation of graziers. Lastly, we can also say that extreme pressure on grazing lands was built up because of

no organised and sustained programme of producing and managing fodder in India.

Check Your Progress 1

i) How much of India’s land is covered by the great Indo-Gangetic Plains?

.....
.....
.....
.....

ii) Identify the name of the one-sixth of India’s total land area, comprising a block of mountains, hills and plateaux. It is intersected by valleys which are covered by forests.

.....
.....
.....
.....

iii) From the point of view of land use, in how many parts can you divide the land mass of India?

.....
.....
.....
.....

iv) What is the difference between a steppe and a savanna?

.....
.....
.....
.....

25.3.2 Wastelands and their Effect on Rural Population

An area of uncultivated or devastated land is generally called wasteland. It is the land affected by salinity, alkalinity and wind and water erosion. An estimated area of one third of India’s land is covered by wastelands. It measures well over 100 million hectares. This estimate does not include data relating to degradation of forest lands into wastelands.

i) **Salinity and Alkalinity:** Nearly 7.17 million hectares of wastelands are affected by salinity and alkalinity. This kind of land is generally referred to as barren and unculturable waste.

PROTECTION OF TREES BY AN ENVIRONMENTAL GROUP



- ii) **Wind Erosion:** The total area eroded by wind comes to 12.93 million hectares. Because of lack of properly worked out data, this figure does not include the estimated one to two million hectares of coastal land, affected by sand dunes. Shifting sand dunes, coastal sand dunes and extreme moisture stress cause wearing away of land by wind. Eleven western districts of Rajasthan and three districts of Gujarat and Haryana are affected by wind erosion.
- iii) **Water Erosion:** Land is also eroded by water in the form of sheet erosion, ravines, waterlogging, revering lands, gully erosion and shifting cultivation. Such erosion of land totals to about 73.6 million hectares. Of the above forms of erosion of land by water, ravine and gully erosions are most spectacular along the river Chambal in Madhya Pradesh, Yamuna in Uttar Pradesh, Sabarmati in Gujrat and their tributaries. A few words about ravines.

Ravines also affect the adjoining productive flat lands. Because of ravine formations more than ten per cent of villages in the districts of Chambal valley have been depopulated. People in such villages have gradually moved to unaffected villages which were already overcrowded. You may be curious to know how ravine and gully erosion take place. See box 25.01 for interesting details of ravine and gully formation.

Box 25.01

Ravines are formed when it rains on soil which is not protected by a cover of sustained growth of vegetation. The rain creates muddy water and particles of soil flow down along the moving body of water. This movement of sheets of water is called 'sheet erosion'. Instead of being absorbed into the soil, rain water concentrates and makes small brooks or streams. These brooks develop into gullies. When small gullies grow bigger they turn into ravines. Ravines are deep gorges which have many gullies running paralld to each other and carrying a heavy load of soil particles. They flow much lower than the nearby table lands and enter a nearby river depositing alluvial soil into it. This kind of fall of water into a river cause the river to cut deep channels along the banks. This process again forms more ravines.

It appears that India loses nearly 8,000 hectares of land to ravines annually. Ravines cause erosion and affect the stability of table lands. Besides this loss

of soil by erosion, ravines of the Chambal valley are notorious as hideouts of dacoit gangs. The production potential of the area lost to ravines in Uttar Pradesh, Madhya Pradesh and Rajasthan is estimated to be the extent of Rs. 157 crore per year. By failing to retain and develop the area lost to ravines, the potential of growing 3 million tones of foodgrain and other products like fruit, timber, fodder is lost each year. Experts advise that a process of reclamation should be started on a war footing.

iv) **Mining:** Besides the above processes, the mining too turns arable lands into wastelands. Apart from land, mining affects also water, forests and air. Here we will talk about how it affects land. The total land used for mining in India is a few million hectares. In addition, every mining enterprise needs lands for roads, railways, ropeways, townships for housing miners and executives administrative offices, stockyards and for initial processing operations. This results in wastage of land many times larger than the simple lease are allotted for mining.

In the initial stages of surface mining, vegetation and topsoil are removed and after the mining operations are completed the mined area is abandoned. As a result, over time land under mining becomes infertile. Additionally, also land surrounding mines becomes barren because mini debris is disposed off in this area. Often rain water washes out this waste material into the nearby fields and streams. On drying the residue becomes hard and makes the fields difficult to cultivate.

v) **Underground Mining:** Crater-like depressions are formed in the land by underground mining. After as much ore as possible is extracted the mine is abandoned, the land sinks and becomes unsafe for living, farming and grazing. Such land is officially treated as derelict land. It is unfit for productive purposes.

vi) **Mining of Minerals:** In the arid lands of Rajasthan, mining of minerals depriving the land of its biological potential. This leads to the creation of desert like conditions. Removal of vegetation and topsoil increases the arid land’s susceptibility to erosion and starts the process of desertification. For some examples of this kind of erosion of land see Box 25.02.

Box 25.02

Soil salinity due to mining in the districts of Jodhpur, Udaipur, and Barmer has reduced the fertility of land in these areas. Uncontrolled quarrying for limestone in the Doon Valley has reduced the area’s tree cover to 12 per cent. As a result, grazing lands are lost and the number of cattle in the area has dropped.

Check Your Progress 2

i) Name the areas in India, affected by wind erosion.

.....
.....
.....
.....
.....

ii) Identify the various losses suffered by the people due to erosion caused by ravines. Use four lines for your answer.

.....
.....
.....
.....

iii) How do the mining operations create wasterlands? Use four lines for your answer.

.....
.....
.....
.....

25.3.3 Croplands, the Main Source of Sustenance for the People

India’s land utilisation pattern is characterised by a continuous increase in the net sown area. This has been at the expense of grazing and forest lands. For example, large areas of land in the Ganga Valley, previously covered by forests till the Moghul Period, have been brought under cultivation of crops to meet the food need of the region’s fast growing population. The net sown area cover nearly half of the country’s total area. In 1960-61, the net sown area was 133.1 million hectares. It increased to 141.6 million hectares in 1972-73. In 1998-99 it has increased to 192.6 million hectares (CMIE 2004).

You will be surprised to note two processes happening in opposite directions. I have already mentioned that land use in India is characterised by a continuous increase in the net sown area. This mainly caused by reclaiming barren and uncultivable lands.

The persistent need for growing more food will lead to either an increased cropped area or to an intensity of cropping. As there is little scope for further expansion of the net sown area, food production is increased by growing more than one crop per year. This is exactly what we find if we look at land utilisation figures for 1986-87. The total cropped area is 177 million hectares. This achieved by sowing an area of 37 million hectares more than once. This how the total cropped area registered an increased of 12 per cent on the existing 46 per cent.

i) Population Supporting Capacity of Land in India

You may ask what is India physically capable of producing? Or, what is population supporting capacity of land in India? This is not an easy question to answer because there are numerous ecological variables to consider while trying to put a figure to the number of human or other living beings, a piece of land can support. Agrawal (1985: 157-162) has discussed in details in a study, *Potential Population Supporting Capacity of Lands in the Developing World*, published by the Food and Agriculture Organisation (FAO). This study is the result of research of a decade. According to this study, in 1975 ‘India had 119 million more people than its land could support’ (Agrawal 1985: 158). The

study shows that with appropriate management of the agricultural land's potential capacity to support population can increase three and half times its present level in India.

But you will be surprised to find that in actual term, India is at present experiencing the 'familiar phenomenon of diminishing returns to inputs in agriculture' (Shah quoted in Agrawal 1985: 160). This means that inputs in agriculture are higher than outputs. Between 1970-80, inputs increased at the rate of 4.2 per cent per annum. Expectations were that the outputs in agriculture would also increase in the same proportion. The real output increased by only 2.3 per cent annum. Let us look at the way agricultural production increases. It is usually achieved by increase in (i) the area under cultivation and (ii) yield per hectare using advanced technology.

As half of India's geographical area is already under cultivation, we do not have much scope for increasing it further. Agricultural production has not indicated any major increase. In fact, the current rate of growth in agricultural production is just about equal to the rate of growth in population. In other words, per capita agricultural production is stagnant.

Table 25.3: Extent of Desertification in Some of the Countries in Asia

Country	Total surface Area (in mha)	DEGRADATION (in mha) %		Total Population (in millions)	Population Density (No./Sq. km) (in ha)	Cultivated Area per Capita
China	932	260	27	1150	123	0.08
India	328	173.6	-	1012	324	0.18
Kazakhstan	271.1		60	16.9	6.2	2.13
Mongolia	156		41	2.3	1.5	0.16
Turkmenistan	48.8		66.5	4.2	8.6	0.35
Uzbekistan	44.7		59.2	21.7	48.5	0.21
Pakistan	79.6		52	131.6	165	0.16
Syria	18.5		75	14.3	77.3	0.42
Jordan	8.9		96	4.2	48	0.1
Islamic Republic of Iran	163.6		43	67.2	41	0.27

Source: UNCCD, 1998: The Social and Economic Impact of Desertification in Several Asian Countries

Table: 25.4: Decline in Arable Land in the World, in Asia and in India

Per capita area of arable land	1950-55	1981	1992	2000	2025	Source of Inf.
World	0.32	n.a.	0.25	n.a.	n.a.	M/o Agriculture, GOI
Asia	0.48	n.a.	n.a.	0.25	n.a.	CCD Report, Beijing 1997
India	0.9	0.5	n.a.	0.15	0.08	M/o Agriculture, GOI, 1997

Source: Status of Drylands and Deforestation in the world.

ii) Indifference of Ecological Base of Agriculture in India

According to Agrawal (1985:160), agricultural technology of India does not

take 'into account the ecological base of the country's agriculture'. What we need is a thorough understanding of ecological resources and constraints. For example, the FAO study argues that there is a close link between rates of soil loss and loss of productivity. This study considers soil conservation an integral part of agricultural management. As India has large tracts of arid and semi-arid lands and lands under higher slopes, it is not surprising that it has a serious problem of soil loss. If soil loss is not checked, it causes fast decrease in rainfed croplands. As a result, production of rainfed crops falls. This is exactly what we face in India.

It is well known that around seventy per cent of farmers in India practice dry-farming and only one-third are engaged in irrigation farming. Dry farming requires conservation of both soil and water. Very little of budgetary allocation is devoted to dry-farming. More than seventy per cent of India's expenditure relating to agricultural development goes to irrigation-based farming. The low level of inputs in dry-farming results in taking no measures for soil conservation. This has implications for loss in productivity and also for the choice of crops. At low level of inputs where the rate of soil loss is 51 to 100 per cent, farmers engaged in dry-farming grow a mixture of crops regardless of the total calorie-protein production. Only at the intermediate level of inputs (where the rate of soil loss is only 50 per cent), one can expect grow crops with high calories. At the high level of inputs (where the rate of soil loss is negligible) a minimum protein requirement is always present in the optimal cropping mixture.

iii) Problem of Soil Erosion

It is apparent that India has enough natural resources in terms of climatic suitability for agriculture. Eighty-five per cent of India's land has both rainfall and temperature conditions adequate for growing crops. A number of restraints to this ecological resource exist and they provide the level of productivity on a sustainable basis.

Most important factor in agriculture, as mentioned above, is degradation of land in India. This occurs from soil erosion. In other words soil conservation can stimulate agricultural production. So far we have discussed the natural aspects of land resources. Now we turn to the complexities of social organisation and land reform in India.

Access to land, its control and management in India cannot be fully understood without a birdseye view of land policies and land reforms. Much has already been documented on the topics in socio-economic histories of India. You will come across many reference to these works in the following section. If interested in knowing the details you should consult the references. As our focus in this block is on ecology and resources, we have discussed the resources of land mainly from the point of view of ecological balance which ensures sustainable development. Agrawal (1985: 162) writes, "If India's people were to go hungry, it can be said with authority that it would not have anything to do with their number but with the callous mismanagement of the country's natural resources."

Check Your Progress 3

- i) What is the phenomenon of diminishing returns to inputs in agriculture?

.....
.....

-
-
- ii) What are the ways to increase agricultural production in a country like India?

.....

.....

.....

.....

25.4 ACCESS TO LAND AND ITS CONTROL AND MANAGEMENT BY THE PEOPLE

The majority of the people in India live in its rural and the majority of its working population is engaged in agriculture-based economics activities. You can fairly conclude that agriculture plays a significant role in India's economy and in its people's social life. Agriculture is basically dependent on three factors of production namely, land labour and capital. A discussion of three factors in terms of agrarian reforms in India can give us a good idea of people's access to and how they control and manage it. In the context of this unit, by the term 'access' we mean capacity or ability to obtain or make use of a particular resource.

We have already talked about the land use pattern, and the productivity of each. We will now look at the landholding pattern.

25.4.1 Inequitable Access to Landholding by the People

Since ancient times, cultivation has been the main occupation of the people in India. This is why access to land has been a matter of foremost importance for the people and for cultivators in particular. Unit 10 of our elective course, **Society in India (ESO-02)**, gives, in its sections 10.3, 10.4, 10.5, a sketch of rural economy during the various phases of Indian history. I will not repeat the contents of these pages and would advise you to refer to them and form an idea of the importance of land for the people of India.

i) High Degree of Concentration of Land with Upper Levels of Society

According to the Report of the National Sample Survey in 1954, in India households owning land up to 5 acres or 2.02 hectares constituted 74.21 per cent of the total households and they held only 16.77 per cent of the total land. On the other hand, households with 25 acres (10.12 hectares) or more constituted 3.71 per cent of the total households but owned as much as 34.27 per cent of the total land. In an unequal society that India is, such skewed access to the resources of land by the poor as shown above indicates meager impact of the legislation of the last four decades for the rural poor.

The table 25.2 shows that the pattern of land ownership, at all India level has been characterised by the unevenness with the high concentration of the marginal cultivators at the bottom on the agrarian hierarchy. Their proportion in the rural households has been increased from 62.62% in 1971-72 to around 72% in 1992. These 72% of the households controls only 17% of the lands. While the increase in the percentages of these households has been to the

extent of over 9% in this period and their control over land increased only by 7%. On the other hand the large and the medium land owners accounting for only 5.5% of the household has a combined share of about 40% the total lands. There, however, has been a steady decline of the large cultivators from 2.12% to 0.88%; their area of the ownership has also decline from about 23% to less than 14% over these period. It is significant that, there has been a marginal decline in the proportion of the households in the categories of small and semi-medium cultivators. However, there has been noticeable increase in the percentage of the area owned by these categories.

Table 25.5: Percentage Distribution of Households and Area Owned by Categories of Households in Rural Area in India in 1971-72, 1982 & 1992

Categories	% of Household			% of area owned		
	1971-72	1982	1992	1971-72	1982	1992
Marginal	62.62	66.64	71.88	9.76	12.22	16.93
Small	15.49	14.70	13.42	14.68	16.49	18.59
Semi Medium	11.94	10.78	9.28	21.92	23.38	24.58
Medium	7.83	6.45	4.54	30.73	29.83	26.07
Large	2.12	1.42	0.88	22.91	18.07	13.83
Total	100	100	100	100	100	100

Source: NSS, 1971-72, 1982 & 1992.

ii) Land Policy during the Pre-British Periods

We find that during the pre-British phases of Indian history, the land policy was geared either to maintain or expand agricultural production or to gain political power. This policy allowed the agriculturists some freedom to control and manage their holdings. During the British rule the prevailing land tenures were transformed to secure the maximum revenue from land tax. The legislation/agreements on land, during the British rule in different parts of India created conditions of pauperisation among the cultivators, leading to recurring famines. Traditional systems of control and management of land were allowed to crumble down. Indian peasants protested against this injustice in the form of mass revolts – big and small in nature.

Even before India achieved independence, a strong public opinion had been formed against the role of feudal landlords. It was felt that a class of big landowning intermediaries was wasting away the country’s agrarian wealth by the directing it into unproductive channels. A National Planning Committee of the Indian National Congress with Jawaharlal Nehru as its president was formed in 1936. It had a sub-committee on Land Policy. On the basis of its interim report, presented in 1940 by the National Planning Committee, the latter decided to derecognize intermediaries between the State and the cultivators.

The Congress Agrarian Reforms Committee, with J.C. Kumarappa as its chairperson, submitted its report in 1949. The Report made a number of recommendations, including those on the size of the holdings. (For the details of this committee’s report see the Report of the National Commission on Agriculture, Vol. XVI 1976, pp. 21 to 23.). The report introduced the concept on an economic holding which refers to a holding ‘which affords a reasonable standard on living to the cultivator and provides full employment to a family of normal size and at least a pair of bullocks.

Before ending this sub-section, it is important to mention that the rural poor have also a limited access to common property resources (CPRs). A Study by Jodha (1990) defines the CPRs to include “community forest, pasture/wasteland, pond/tank, river/rivulet, watershed, drainage/river banks and river/tank beds”. This shows that common lands are of vital importance for income-generation by the rural poor. In other studies (see Rao, 1992), it has been found that the rich have better access to CPRs and only in backward villages (where there are no rich farmers) the poor are able to make use of CPRs. Driven out of their landholdings by the rich, now the poor have to face competition even in the use of CPRs.

Land reform policy recommendations, made by successive Five Year Plans, beginning in 1951, present a new perspective on land use, land tenure and agrarian relations. We will, therefore, analyse and evaluate, in the next sub-section, legal measures for land reforms introduced after India’s Independence in 1947.

Check Your Progress 4

- i) Define, in two lines, marginal and small land holdings in terms of acreage.

.....
.....
.....
.....

- ii) Who can legislate about land tenure and rights in land?

.....
.....
.....
.....

- iii) What were the main aims of land policy in British India?

.....
.....
.....
.....

- iv) What initiated the conditions of pauperisation among the cultivators in India?

.....
.....
.....
.....

- v) Define the concept of 'economic holding'.

.....

.....

.....

.....

25.4.2 Legal Measures for Land Reforms, Implications for Cultivators and for Effective Use of Land

Legislative enactments for land reforms during the nineteen fifties, nineteen sixties and the seventies focused on (i) abolition of intermediary tenures, (ii) security of the tenancy rights, (iii) fixation of ceiling on land holdings, and (iv) consolidation of holdings. Enactment of legislation has to be followed by its implementation. We will now consider this aspect with regard to each of the above programmes.

i) Abolition

In the context of land reforms, intermediaries refer to holders of property which had its origin in the system of landlordism instituted by the British. Land reforms is a subject included in the State List. This means that each state of the Indian Union had to implement the legislation. This why we find that abolition of intermediaries took place with slight variation in each state. Here we will not go in the details of enactments in each states. It is however to be noted that in such states where statutory landlordism was deeply entrenched as Uttar Pradesh, Bihar, West Bengal and Orissa, legislation for abolition of intermediaries was criticised for two reasons. The first reason was that the intermediaries were given a very high rate of compensation. The second reason was that they were allowed to retain in their possession large areas of land in the name of self-cultivated holdings.

ii) Tenancy Rights

During the initial years of land reforms after Independence the then existing tenancy laws were amended giving tenants more protection. This stimulated another social process. Landlords evicted tenants, sub-tenants and sharecroppers on a mass-scale. They did this in the name of saving for themselves the maximum land as self-cultivated land. Their drive was so strong that very soon the old system of tenancy broke down (see Khusro 1958: 73-75; Dandekar and Khudanpur 1957-187). To counteract this situation which had fairly spread by the middle of the sixties, the State amended tenancy laws. Tenancy reforms affected tenants of farm lands of the intermediaries, sub-tenants of the intermediaries, tenants holding land from the ryots in the ryotwai areas, and sharecroppers who were mostly not considered tenants. The objectives of tenancy legislation were related to (a) security of tenure, (b) fair rents to be fixed for tenants, (c) landowners to retain only limited measure of land for self-cultivation and (d) on non-resumable areas, landlord-tenant relationship to be ended and tenant cultivators to become peasant proprietors of these areas.

Because the term tenant could not be defined properly the tenancy legislation could not be implemented effectively. Besides this, landlords managed to evict tenants of many grounds, making their tenancy rights ineffective. Again,

landowners used the provision of 'voluntary surrender' and in reality coerced their tenants to surrender their tenancies voluntarily. In addition to this, in many states (Madhya Pradesh, Maharashtra, Kerala, Gujarat, Karnataka and Orissa) landowners were allowed to resume tenanted land within a limited period. Under this provision, many landowners had made tenancy rights of tenants insecure and ineffective.

Regarding fixation of rents, we have not yet come across a uniformly set fair rent. The procedure of fixing rent is cumbersome and a tenant demanding fixation of fair rents faces the threat of ejection from land. Lastly, a tenant can acquire the status of peasant proprietor only after occupation of a holding for a number of years. Landlords manage to manipulate records, rotate tenants from plot to plot etc. These result in a break in occupancy. Obviously, tenants do not then actually benefit from legislation on tenancy rights, until and unless there is a political will to implement the tenancy reform, on the part of the state.

iii) Fixation of Ceiling on Land Holdings

As a redistributive measure, fixation of ceiling on land holdings has been viewed as an almost compulsory step. For nearly fifteen years after independence ceiling on large land holdings continued to be an important item but was not taken up seriously for implementing. Even up to 1960 it was only a vague concept, a possibility. Between 1960 and 1972 ceiling laws were enacted and enforced in each state. Some states applied ceiling on the individual as the unit while others accepted the family as the unit for fixing ceiling limits. Each state has its own list of the classes of land which did not come under the ceiling laws.

Big land holders were able to escape these legislative measures which were full of the loopholes. Anticipating implementation of ceiling laws, big landowners partitioned their holdings and resorted to 'benami' transfers. The ceiling limits were usually fixed quite high. As a result land was still largely in the hand of rich cultivators. Exemption from ceiling made ceiling laws useless. In 1970, the then Prime Minister of India emphasised the need for land reforms. This did not facilitate the process of implementation of land reforms. In 1973, the failure in the area of land reforms was admitted in the Task Force Report of the Planning Commission, 1973 (Report of the National Commission on Agriculture, 1976-79).

The following have been identified as the main cause of ineffective legislation:

- a) exclusive dependence on legislation as an instrument of agrarian reforms
- b) the lack of political will
- c) sole responsibility for land reforms put on certain administrative agencies
- d) low degree of consciousness and organisation of the potential beneficiaries
- e) use of laws and implementation procedures in their own advantage by powerful landowners.

As a result, we find that even in the nineties, the Prime Minister of India has to give a call for seriously assessing the impact of land reforms on recipients (see The Time of India, 10.10.62, p.1). In a very clearly written article, Land Reform Experiences, Rao (1992): A-50-A64) has shown that 'the performance so far

various measures for land reforms,....., has ranged from modest to disappointing.’ Now we turn to the last part of legislative enactments for land reforms, i.e. consolidation of holdings.

Activity 4

Read the above-mentioned newspaper reporting of the Prime Minister’s speech (referred above) on land reforms and his call for implementation of legal measures in this regard. Write a note of 250 words about your own views on this Specify if you agree with the Prime Minister that land reforms have not been effectively carried out in India. Give reasons for your agreement or disagreement.

iv) Consolidation of Holdings

Successive Five Year Plans recognised the value of the consolidation of holdings for increase in productivity. In India, the law of inheritance among both the Hindu and Muslim communities refers to the succession to immovable property by all the heirs. This leads to excessive fragmentation of land, resulting in the small size of the average farm in India. Fragmentation produces the following disadvantages.

- a) small size of holdings is uneconomical to cultivate
- b) wastage of resources of money, time and labour in carrying out different operations from one plot to another
- c) supervision of farm operations is not easy
- d) expenditure on irrigation, drainage, farming increases
- e) during crop season, access to different plots is difficult and a source of quarrel and tension over trespass
- f) division of holding causes loss of land on demarcation of boundaries.

Recognising the problems arising out of fragmentation of land its consolidation was sought as far back as 1905 when Central Provinces undertook consolidation. Later other states too introduced measures to consolidate land under the Cooperative Societies Act. After Independence, almost all the States opted for compulsory consolidation. States such as Punjab , Haryana and Utter Pradesh have made considerable progress in this field.

The total area to be consolidated is about 137 million hectares . Of this , by the end of the Fourth Five Year Plan , the total area covered by the consolidation programme was about 39.3 million hectares. The Planning Commission (1989) reported that about 40 per cent of total cultivated land had been consolidated by 1989.

In the Southern and Eastern States, this programme has not found much favour. Most of these states have very small sizes agricultural holdings. It has been argued that land use capability, classification and consumption patterns of the local population as well as the topography of the land in these states present problems in the way of consolidation. One can also argue that many paddy growing areas in these States have a uniform cropping pattern, thereby providing an ideal setting for consolidation. That is why we can only hope that in due course of time the consolidation programme should find favour in these parts.

Let us now consider another important aspect of this programme. It relates to the cost of consolidation.

It depends on such factors as topography of the region, extent of division of agricultural holding, level of agricultural technology and participation of beneficiaries. Obviously, the cost in the hill tracts would be more than it would be in the plains. The cost of consolidation in each area is bound to be linked with several complex issues and therefore cannot give a uniform figure applicable throughout India. In many parts of the country, the cost of consolidation is partly met by the beneficiaries. This reduces the burden of the consolidation process of the State. All the same, it is expected that the State government would not make the small and marginal farmers share the cost of consolidation.

It should also be kept in mind that the advantages of consolidation are neutralised if fragmentation is not curbed. The cost of consolidation is justified only if there are curbs imposed on fragmentation by sale, gift and mortgage.

Check Your Progress 5

i) Who introduced the system of landordism (zamindari) in India?

.....
.....
.....
.....

ii) Why did landlords evict, after Independence, their tenants, sub-tenants and sharecroppers on a mass scale? Use three lines for your answer.

.....
.....
.....
.....

iii) How can a tenant acquire the status of peasant proprietor? Use two lines for your answer.

.....
.....
.....
.....

iv) Is it possible of effectively carry out such agrarian reform as ceiling on landholdings by legislation alone? Give reasons for your answer.

.....
.....
.....
.....

v) What is the rationale behind consolidation of landholding?

.....
.....
.....
.....

25.5 RISE OF THE AGRICULTURAL LABOURERS AND OTHER CONSEQUENCES OF LAND REFORMS

The foregoing discussion on the implementation of land reforms does not give us much hope for the well being of cultivators of small sized landholdings. Their problems have not been solved despite extensive legislation on agricultural reforms and despite the so-called green revolution in some parts of India. Consequently, we find rapid growth of the class known as agricultural labourers. It is a result of a process of disintegration of the rural economy. Marginal farmers and destitute artisans have been forced to become agricultural labourers. The wages are low and they are subjected to innumerable exploitative practices in the regions of the ‘green revolution’.

In the rural economy, land is not only a site – it is the prime means of production. As such it supports the owner, his servants, the village artisans. The merchant who buys the produce and a host of others. When the cycle of agriculture is disturbed, all these activities are disrupted and the livelihood of all the landless endangered (NCHSE 1986: ii).

However, those who do not own land, but depend on it for instance, are rarely taken into consideration. For example, data relating to changes in agricultural wage rates over the decades of 1960-61 to 1969-70 show that each State has reported an increase in money wage-rates. But in real terms, the wage-rate declined in most places. This means that the money received as wages did not carry enough purchasing power. In other words, wages did not match increase in the prices of essential commodities. So even if the money wage increased, it did not benefit the labourer who had to pay more to purchase food and other things. The rate of change in money and real earnings is mostly affected by the level of agricultural development, availability of agricultural labour and the organisational power of agricultural labourers. For example, Punjab has registered an increase in both money and real wages. This has been so because of the fast development of a agriculture in this State. Similarly, in Kerala, we find that effective unionisation of agricultural labour has helped agricultural labour to get increase in wages.

Another feature of the wages of agricultural labour is the male-female differential. Women are paid at a lower rate. Secondly, you may be surprised to know that on an average, in as many as 12 out of 17 States, on average a male agricultural labourer earns more than a small cultivator earns. This shows the poor socio-economic conditions of marginal farmers, most of whom are eventually forced to become landless agricultural labourers. Further, it has been found that casual workers receive the highest wages, followed by seasonally attached and permanently attached labourers (see Johri and Pandey 1972).

Relatively speaking, wages in the agricultural sector are less monetised than in the industrial sector. Although we find a considerable degree of monetisation in the rural areas, even then in many cases, wages are paid in kind in different part of India. This is more likely to be the case during the harvesting season.

The household income of wage earners depends largely on the level of wages, duration of employment and the number of earners in the household. This is why no generalisation can easily be made in this regard.

It was assumed by policy makers that the supply of agricultural labour exceeds its demand. It was felt that if there were no rules of the minimum wages the labourers would get only the bare subsistence wages. Here come several factors relating to the variety of labourers, their employers and regional peculiarities in the way of deciding the minimum wages for agricultural labour in India. It also includes conditions which make for persistent poverty in agriculture, in both absolute and relative terms and those conditions which enable the employer to exploit the labourer. Obviously, the policy for upgrading wages in agriculture needs to consider wide variety of the problem.

There are already programmes to mobilise surplus labour in the rural areas. This labour is directed to upgrade such agricultural and other rural structures as roads, wells, check dams etc. Welfare programmes are aimed to upgrade drinking water supply, sanitation, health and housing in the rural areas. Economic rehabilitation programme operate to reclaim any wasteland. There are other programmes to help agricultural labourers to move out of agriculture by training them to take to village industries. To remove caste and cultural biases and spread literacy there are social rehabilitation programmes. These programmes mentioned here only by name. For detailed information on them you may refer to Block 3 and 4 of this course.

After the above section on agricultural labour, we will briefly mention, in the next section, problems relating to land in the urban areas.

Check Your Progress 6

- i) In terms of economic status, whom would you place higher – a marginal farmer or an agricultural labourer? Why?

.....
.....
.....
.....
.....
.....

- ii) Explain the differences between money wage-rates and real wage-rates.

.....
.....
.....
.....
.....

25.6 LAND AND URBAN DEVELOPMENT IN INDIA

Considering the rate at which the urban sector is developing in India, we need to look at problems arising out of tendencies of land-grab, encroachment, unauthorised structures on government and non-government land, slum dwellings as well as skyscrapers without adequate precautions against fire and the other hazards. This can in fact be the subject of another unit. Here we will only touch upon this theme in order to make you aware of these problems in relation to access to land, its control and management. Land use in an urban area indicates the spatial dimensions of urbanisation. Human use of land or human activities on land in a town or city are characterised by a complexity of socio-economic needs of urban dwellers. In India, most urban areas reflect a pattern of land use marked by the area's past history. Further growth of these areas is guided, under varying pressures by contemporary functional needs. Intricately interwoven patterns of land use develop in today's towns and cities of India.

In the urban areas, a large chunk of better quality land is occupied by the state/central government administration the armed forces and other defence departments. The fast developing sector of commerce, trade industrial manufacturing, transport etc. take up the remaining land. These organisations develop both horizontally and vertically. Many bodies set up their offices, warehouses on the outskirts of towns, thus extending their boundaries. Such organisations also house themselves in multi-storeyed buildings. Then you have the various educational recreational and the other services which need accommodation to function in a congenial atmosphere. With urbanisation, we have to make land available for all these purposes.

As the urban population is fast increasing, both the residential buildings and the amenities remain short of demand. As a result, shanty towns multiply to accommodate the poor. The more the urban affluent sections indulge in land grab the higher the prices of urban properties soar. Some of these problems have been touched in Unit 6 of Block 2 of this course.

Here, we may indicate that laws regarding ceiling on urban property need to be implemented more vigorously and social justice be given to slum dwellers who contribute substantially to the growth of the urban sector in India. Corresponding to legislation imposing ceiling on agricultural lands, the All India Congress Committee adopted, in 1964 a resolution on suitable legislation to impose ceiling on urban property. More than a decade later, the Urban Land (Ceiling and Regulation) Act, 1976, came into force on February 17, 1976. Towns and cities, classified into four categories, come under the purview of this Act which is viewed by its critics as a watered down version of the proposal earlier presented in 1969. The purpose of the Act seems to be confined to better use of land resources. With the contemporary practice of multi-storeyed construction of urban buildings, there is now need for a different type of legislation on ceiling on urban property. More than land, we need not to look at the users of land in the urban areas.

Activity 5

Imagine you are in-charge of land use in an urban area. What three steps will you take for making ecologically balanced land use in that area? Write a short not on 250 words on your plans.

25.7 PEOPLE'S PARTICIPATION IN THE CONTROL AND MANAGEMENT OF LAND IN RURAL AND URBAN AREAS

You would recall that in sub-section 25.4.2 of this unit, it was mentioned that one of the main causes of ineffective legislation on land reforms is the low degree of consciousness and organisation of the potential beneficiaries. Some Western scholars as Moore (1976) and Stokes (1978) consider that protest movements are only rarely found among the Indian peasants. Other scholars, like Gough (1974), Desai (1979), Dhanagare (1983), Guha (1983) and Singha Roy (2005) hold that during the eighteenth and nineteenth centuries peasant revolts were quite common in almost every corner of India. It is true that the poor peasants and landless labourers have in many cases successfully fought against their exploiters. Yet, this is also obvious that while organised movements among the Chinese and European peasants led to fundamental changes in their societies, in India peasant movements do not have an all-India character. They have not so far resulted in any remarkable and fundamental change in Indian society. Similarly, in the urban areas too, we have just begun to notice the arrival of some people's movements. They have yet to make their presence felt in the sense of bringing about noticeable social change in terms of control and management of land. In the following two sub-sections, we will only briefly bring to you notice, in relation to land resources, some of the peasant movements and emerging people's movements in the urban areas.

25.7.1 Peasant Movements

Again, as in section 25.6 on urban land, we have here a topic which deserves to be discussed in a separate Unit if not in whole Block. By including this sub-section in this Unit, our intention is to draw your attention to the nature of peasant movements which are found in large numbers in different parts of India.

Regarding people's access to land and their desire to control and manage agricultural operations, we can take as examples those peasant movements which revolved around agrarian conflicts between tenants and landlords. As shown by Dhanagare (1983), Pankhar (1979) and Namboodiripad (1943), the Moplah rebellions of the nineteenth and early 20th century in the Malabar region of Kerala were largely a result of the poor economic conditions of the peasantry. Similarly, the Wahabi and Faraidi (or Farazi) agitation of Bengal in the 1930s was also partly, if not solely, a consequence of agrarian discontent among the Muslim peasants.

More than simply rise in prices of essential commodities, organisational and ideological inputs have triggered and sustained peasant movements (Henningham 1982). Peasant uprising in Andhra Pradesh, from time to time, and especially in its Telengana region between 1946 and 1951, were organised on the basis of the intervention of political parties.

Agitation against forced labour (variously known as beggar, veth or vethi), performed by peasants, marks many a movement. For example, peasant movements in Rajasthan between 1887 and 1941, in Andhra Pradesh between 1922-23 and in Oudh during 1921-22, were basically against forced labour (Surana 1979). Further, control by the landlords in the form of various taxes on the peasants, raised land rents and eviction of tenants as cultivators were some factors in peasant uprising in Rajasthan, Uttar Pradesh and Andhra Pradesh (see Siddiqui 1978, Surana 1983 and Saraswati 1979).

A demand for two third share of the Produced Crops for the sharecroppers and land to the tillers were the main features of such peasant movements as the Tebhaga movement in Bengal in 1946-47 (Dhanagare 1976), land grab movement (Prasad 1986) and the Naxalite movement (Banerjee S. 1980, Banerji T. 1980, SinghaRoy, 2004). The Bhoodan movement was started by Vinoba Bhave in the 1950s. Peasant revolts occurred also due to change in the management of agricultural operations. The shift from subsistence to commercial crops entailed changes in agricultural practices and thereby also in traditional agrarian relationships. This gave an impetus to demands for higher wages by agricultural labourers. The Naxalite movement in West Bengal, Bihar and Andhra Pradesh (Mukherji 1979, Balgopal 1988) mobilised several peasant struggles on this issue.

Most of the revolts among the peasants took up the issues of small peasants, poor tenants, sharecroppers and landless labourers. Regarding active participation in these movements, we have a variety of peasants taking up of roles of leading and active participants. For example, Siddiqui (1978) shows that in the Eka movement in Uttar Pradesh, the rich peasants played a major role. So also was the case in North Bihar where peasant movements during 1917 and 1942 were led by rich peasants. On the other hand, Hardgrave's (1977) study of the Moplah Rebellion of 1926 shows the active participation of the poorest tenant cultivators of Kerala.

Hardiman (1981) shows that the Kheda Satyagraha was mainly supported by the middle peasants who owned three to five acres of land. Clearly, we do not have any basis on which to claim that one or the other class or category of peasants spearheaded and sustained protest movements in India. Because of a lack of documentation we are also not in a position to assess the extent of women's participation in these movements. We do, however, know about their heroic and remarkable role in some cases. For example, SinghaRoy (1992) shows that women played a radical role in sustaining the Tebhaga peasant movement in certain regions of West Bengal.

With this brief account of peasant movements we now turn to movements relating to urban land use.

25.7.2 People's Awareness of Problems Related to Urban Land Use

Acts of human beings, more than those of nature, make their residential land prone to various forms of calamities. People at large become vulnerable to the effects of these man-made calamities. In the urban areas because of lack of planning, slums develop mainly on public land. For example, side space of railway tracks, low-lying undeveloped land, construction sites of building, riverside lands are generally illegally occupied by poor people who migrate to

urban areas in search of jobs. Often these areas provide open ground for their children and space for daily ablutions.

These settlements do not have basic provisions of water, drainage, sanitation, toilets and transport etc. This situation creates a polluted environment. The pollution is further aggravated by air, noise, industrial dust and lead pollution found in cities. We do not have reliable data regarding land pollution produced by solid wastes from household, municipal and industrial operations. Liquid wastes are, of course, not exactly discarded and unusable matter. The earth has inbuilt systems of recycling liquid wastes. In the case of solid wastes, we have to worry a lot because we have to spend our resources of money, time and energy in recycling them. Dumping them may be cheaper but not the final solution. In some urban areas, people are now slowly becoming aware of this problem. In the Western countries, students and other young persons take upon themselves the task of collecting, separating and processing solid wastes. In India, we have yet to wake up to these problems. There are some voluntary organisation, working in the urban areas for improving the environment of slums. For example, in some areas mobile latrines (Sulab Shauchalaya) are provided for slum-dwellers.

Such schemes at the Environmental Improvement of Urban Slums (EIUS, item 10A of Twenty Point Programme) have not been able to make much headway according to a report of the Ministry of Works and Housing Review of the New 20 Point Programme (19.07.1984). This is mainly because

- i) local bodies lack funds and human power to maintain the improvements once introduced in slum areas;
- ii) the state governments do not release funds in time for implementers to carry out improvements; and
- iii) some of the states have not been carried out surveys for identifying the slums in the town and cities of their states.

It is often expected that voluntary organisations will come forward and carry out the improvement programmes. The beneficiaries of improvements do not however participate in such schemes and therefore even voluntary organisation are unable to carry out sustained activity. Many cities have a kind of Comprehensive Development Plan (CDP) to provide better environment (see Gowda and Sridhara 1987). These schemes are by and large, generated at the level of local/state governments and die natural deaths in due course, achieving very little. People's participation in them is not at all visible. Policy-makers and planners hardly seek people's participation. People on their own cannot undertake improvement of the urban environment because it requires large funds, infrastructural support and sustained interest of administration and people.

Urban forestry, introduced in Mysore city in 1986 (see Gowda and Sridhara 1987: 178-179), needs to be evaluated after a period of eight years. Urban forestry refers to planting and maintaining forests in the urban areas. The urban forestry programme is carried out by a division of the Forest Department, which distributed in Mysore city more than 50,000 seedlings produced in the urban forestry nurseries in 1986-87. The success of this programme depends largely on people's awareness and their support. In some urban areas, we hear of a science movement. This too has a potential of developing an environmental education input.

Check Your Progress 7

i) 'Peasant movements in India share a common organisation and common ideology'. Comment by using three lines for your answer.

.....
.....
.....
.....

ii) Match the following items in the two columns.

a) Equal distribution of land	1. Pollution in the environment
b) Poor condition of peasants	2. Chinese and European peasant movements
c) Fundamental changes in society	3. Tebhaga movements
d) Lack of basic amenities	4. Moplah uprising

iii) What is urban forestry? Use two lines for your answer.

.....
.....
.....
.....

25.8 LET US SUM UP

In this unit, we have in section 25.2, dealt with physiographic features of land in India. This description is followed by a discussion of land utilisation and related ecological problems. This is a rather long section with three sub-sections dealing with grazing lands, wastelands and crop lands. Each sub-section is again divided into sub-sections focusing on particular ecological problems affecting the people. As India is largely a land of agriculturists, we have discussed in some detail the nature of access to land, and its control and management. We have also looked at legal measures for and consequences of land reforms.

In a brief section we have talked about the pattern of land use in the urban areas. Lastly, we have looked at people's participation in the control and management of land in the rural and urban areas. This unit gives you a chance to build your own framework for evaluating the use of the resources in India. In the next two units we will discuss the resources of water and forests.

25.9 KEY WORDS

Access : Freedom or ability to obtain or make use of a particular resource.

Alkaline : A mixture of soluble salts obtained from the ashes of plants and consisting of potassium or sodium carbonate. These salts are present in some soils of arid regions in quantity detrimental to agriculture.

Alluvium	: Deposit of earth, sand etc. left by floods.
Ecosystem	: A complex dealing with the habits of living organisms, their modes of life and relations to their surroundings.
Gully	: A deep artificial channel, gutter, drain/ a water-worn ravine.
Hydrologic	: Of the science of properties, laws etc. of water.
Peninsula	: Piece of land almost surrounded by water or projecting far into the sea.
Physiographic	: Relating to the description of nature, or natural phenomena.
Ravine	: Deep narrow gorge.
Salinity	: The quality of being impregnated/soaked/saturated with salt or salts.
Savanna	: Grassy plain with scattered trees in tropical and subtropical regions.
Steppe	: Level plain devoid of forest.
Unculturable	: Uncultivable; and not capable of development.

25.10 FURTHER READING

Agrawal, Anil and Sunita Narain, 1985. *The State of India's Environment, 1984-85: The Second Citizens' Report*. Centre for Science and Environment: New Delhi.

Singh, Pramod, 1987. *Ecology of Urban India*. Volume II. Ashish Publishing House: New Delhi.

25.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

- i) Indo-Gangetic plains form one fourth of the total land area of India, and cover an area of 65,200 square kilometers.
- ii) The area comprising a block of mountains, hill and plateaux and intersected by the valleys is called the Central Highlands which covers one-sixth of the total land area of India.
- iii) In terms of land use, the landmass of India can be divided into four parts, namely, grazing lands, wastelands, croplands and forests.
- iv) The Savannas are extensive open grassy plains or meadows with scattered shrub and trees while the steppes are extensive level plains without trees. Sometimes, due to overgrazing, the savannas reach a stage of degradation which makes them look like steppes.

Check Your Progress 2

- i) Eleven western districts of Rajasthan, and three districts of Gujarat and Haryana are affected by wind erosion. In India, the total area eroded by wind is 12.93 million.

- ii) Because ravines affect the adjoining productive flat lands, people cultivating those lands and living in that area have to move out of it. Secondly, the ravines are made into shelter places by gangs of dacoits. This creates feeling of insecurity among villagers of the adjoining areas.
- iii) When mining operations are over, the mined areas cannot be cultivated because vegetation and topsoil are removed in the initial stages of surface mining. In underground mining, after extracting ore, the mine is abandoned. Here, the land subsides and becomes unsafe for living, farming or grasing. Mining of minerals deprives the land of its biological potential. This leads to the process of desertification of the area.

Check Your Progress 3

- i) It means that inputs in agriculture are higher than output.
- ii) Agricultural production in India can be increased by either expanding the area under cultivation or receiving higher yield per hectare.

Check Your Progress 4

- i) Marginal holdings measure less than 1 hectare and small holding measure 1 to 2.0 hectares.
- ii) Land tenure and rights in land are governed by the both the central and the provincial apparatuses of administration.
- iii) Land policy in British India was aimed to secure the maximum revenue from land tax.
- iv) The various land settlements in different parts of India during the British rule created conditions of pauperization among the cultivators.
- v) An 'economic holding' refers to a holding which affords a reasonable standard of living the cultivators and provides full employment and at least a pair of bullock to a normal size family.

Check Your Progress 5

- i) The British introduced the zamindari system in India.
- ii) Because, during the initial years of land reforms, after Independence, then existing tenancy laws were amended to give more protection to tenants and other categories of non-owners working and subsiding on land. Landlords were afraid of losing their ownership of land.
- iii) A tenant can acquire the status of the peasant proprietor only after occupation of a land holding for a number of years.
- iv) It is not possible to effective secure land reforms through legislation alone because after the laws are made the administration has to implement them. For implementation, there has to be a political will and an efficient administrative machinery with sufficient resources. Also, the potential beneficiaries of reforms need to organise themselves and demand their legal rights. Only then, the laws can be effective.
- v) The reasons behind consolidation of land holding are as follows
 - a) small size of plots are uneconomic to cultivate;
 - b) money, time and labour are wasted in carrying out different operations from one small plot to another;

- c) supervision of farm operation is not easy;
- d) expenses on irrigation, drainage increase;
- e) during the crop season, access to different plots is difficult and a source of quarrels and conflicts over trespass;
- f) division of a holding causes loss of land for making boundaries.

Check Your Progress 6

- i) An agricultural labourer occupies a higher economic status because he/she gets daily wages which can be at times higher than the earning of a marginal farmer from the produce of his/her land.
- ii) Broadly speaking, money wage rates refer to the rates of money received as wages while real rates refer to the purchasing power of the money.

Check Your Progress 7

- i) Peasant movements in India are organised on local basis with different aims and objective. They do not so far voice their demands from a single forum.
- ii) $a=3$; $b=4$; $c=2$; $d=1$
- iii) Urban forestry refers to planting and maintaining trees in urban areas. It is carried out by a division of the Forest Department.