Indira Gandhi National Open University
School of Continuing Education

MRD-101
Rural Development:
Indian Context

Rural Development — Agrarian Issues 3

UNIT 1 AGRARIAN MOVEMENTS

Structure

1.0 OBJECTIVES

After studying this unit, you should be able to:

- identify the agrarian classes in India and their main features;
- enumerate the features of agrarian movements;
- identify the conditions in the social system which give rise to or are associated with agrarian movements;
- critically analyze the forms that agrarian movements take, and their implications for change; and
- describe their features.

1.1 INTRODUCTION

Agrarian movements are an integral part of an agrarian system and reflect the changes which are developing internally in the structure of the agrarian system or in relation to it. In this unit, concepts pertaining to the agrarian system, the agrarian class and social movements are discussed. A reasonable understanding of these is necessary for appreciating the context which gives rise to agrarian movements. The unit will also identify the main agrarian movements, trace their development and describe their features

Considering the size of the country, the diversity, the long history of agrarian struggles and their inadequate documentation, it is very difficult to present and explain details about all the agrarian movements in India. It is still possible, however, to capture some of the major movements, examine their significance with reference to the context within which they developed, and the consequences they had for the agrarian conditiona in particular and for the Indian society in general.

This unit will give you a brief account of the key concepts regarding the ***Agrarian system***, relationships between movements and change, the framework for the analysis of movements and some of the basic concepts of agrarianism. Further, we will describe the phenomenon of the agrarian movements that came up in our country, both before and after Independence.

1.2 THE INDIAN AGRARIAN SYSTEM AND AGRARIAN CLASSES

Agrarian movements do not take place in industrial or urban settings, although they may draw support from sections of population in these sectors, or may even have alliances with them for achieving a larger political goal. Basically, these movements arise within agrarian systems. The dictionary meaning of the word ***'agrarian'***, stated briefly, is *that pertaining to cultivated or agricultural land (and its tenure); related to cultivated land or its management or distribution.* The term ***'agrarianism'*** refers to *movements* for the division of land and changes which would improve the economic status of the farmers, *methods*, more or less controlled, to bring about changes in the existing pattern of land ownership and *operations* that involve not only the diffusion of wealth, income and productive capacity in the economy, but also the creation of new incentives and opportunities for increased productivity, income and employment. Finally, ***'agrarian outrage'*** is an act of violence originating in discords between classes with antagonistic relationships.

1.2.1 Agrarian Class

The manner in which the members of an agrarian population are related to each other in the social organisation of agricultural production describes a given agrarian system, and also determines the agrarian classes. These relations include ***attributes*** such as:

- Crop share (rent) given by a tenant to his landlord;
- Unpaid labour of the tenant agricultural labourer;
- Non-market wages;
- Bondedness of labour;
- Customary exactions;
- Rights over the women of inferior tenants and labourers for sexual gratification of the landlord;
- Various expressions of deference used for the landlord symbolizing subordinate and lower caste/class status of the tenant.

The agrarian class structure is, thus, a reflection of the relations of production in agriculture. The variation in the forms and content of agrarian class structure depends upon the level of technological development and the nature of the ownership of the means of production such as land, machinery, cattle, etc.

Check Your Progress I

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Explain the terms *agrarian*, *agrarianism* and *agrarian outrage*.

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1.2.2 Agrarian Classes in India

The agrarian class composition varies depending upon social, economic, geographic, political and administrative conditions of the region. Nature of land control and land use varies, from place to place and even at one and the same place, depending upon the productivity of the region, largely because of the type of soil, availability of water, adoption of improved agricultural practices, development of communication, integration of market forces, political and administrative set up, etc. These factors affect agrarian relationships everywher in the country. Today ***penetration of market forces and adoption of technology are considered very important factors for shaping agrarian composition***.For a large country like India, which has numerous complex combinations of agrarian systems, it is difficult to describe the various agrarian class combinations. Here, we study this system as it obtained under the feudalistic system that existed during the pre-British era and then during the British period when the colonial power had a vested interest in perpetuating it.

With the influence of capitalists, changes began to take place in the agrarian field. These changes were stimulated by anti-feudal movements leading to the ratification of abolishing landlordism and the introduction of land reform measures after independence.

1.2.3 Agrarian Classes: Feudalistic Agrarian System

Feudalists are the families generally owning or controlling substantially large areas of land, but they do not engage in cultivation directly. They lease out their lands to tenants who cultivate those lands. Their principal source of income from land comprises the rents paid by the tenants. The rents they receive are either in kind (*produce rent*) or in cash (*money rent*). Produce rent, again can either be a fixed amount or a specified share of the crop grown by the tenant. Money rent is generally a fixed amount. Such rent collecting landowners constitute the ***rentier classes*** of landlords who often are ***absentee landlords,*** depending upon where they normally reside. In addition to income through rent, the landlord class is often associated with earning through usury (interest on lending). The ***peasant class*** is generally identified with self-cultivating through family labour, subsistence and small farm cultivator households. The distinguishing feature of this class is the contribution of the peasant householder's family labour to its own activity of cultivation. The feudalistic character of the agrarian system reside in the nature of interrelationships among the various class categories.

1.2.4 Agrarian Classes: Capitalistic Agrarian System

Farmers, owning or controlling substantial landholdings, who get their land cultivated with the help of wage labour under their own direction and/or delegated supervision, , can be described as ***capitalist farmers***. They themselves do not engage directly in cultivation.

The rich and family farmers can be distinguished by the contribution of their family labour to cultivation under self supervision. They operate on land holdings which can be cultivated almost entirely through their family labour. They do not hire themselves out as labourers.

1.3 MOVEMENT: MEANING AND FEATURES

Since movements and change are closely related, it is important that you understand the meaning of the term *'**movements'***. Almost any collective mobilisation tends to get described as a movement of one kind or the other—of peasants, labourers, students, women, backward classes or tribal communities. Movements have recognisable structures and can best be understood in terms of their features. Here, we will outline their features as we discuss the contributions made by some of them:

- A *movement* attempts to bring about ***change***, even in the sense of an entirely new social and economic order. It generally involves some goal oriented sustained mobilisation of a collectivity, in a relationship of conflict with some other group(s), and is directed towards the achievement of its objectives.
- A *movement*, particularly the one which has far reaching implications for change, must develop, sooner or later, ***a comprehensive ideology*** which will present a rationale for bringing about (or resisting) change(s) for which a struggle is considered necessary.
- *Movements* usually have ***a strategy*** for achieving their aims and also employ tactics as a part of the overall strategy. Sometimes, movements tend to achieve their legitimate rights through persuasion. When the state shows no concern, these may lead to organised demands for changes pertaining to some specific aspects of their lives or for total transformation.

A distinction is often made between ***peasant movements and farmers' movements.*** Herberle (1972) observes that *"**Farmers' movements**, as a **rule, do not develop elaborate ideologies but raise concrete demands; in this respect they come closer to being mere protest movements.***

Check Your Progress II

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) What is a *movement*? Enumerate any three features of a movement?

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1.4 MOVEMENT AND CHANGE: THE FRAMEWORK

1.4.1 Classification of Social Movements

Social movements have been classified in a number of ways using one criterion or the other***—ideology, strategy, nature and extent of change/reform in the structure.*** The main categories of people involved in such movemtns are peasants, workers, students, caste group, women, etc.

Mukherjee (1983) has classified movements on the basis of the kind of change they seek to bring about:

- Those that seek to bring about (or resist) quasi-structural changes within the system (i.e, they may have some of the appearance of a structural change but in fact are not so). These are *quasi movements***.**
- Those that seek to bring about (or resist) alternative structural changes by addition or deletion of some structures. These are ***social movements*.**
- Those that seek replacement of existing structure(s) by alternative structure(s). These are ***social transformatory movements***.

It is obvious that most social mobilisations are quasi-movements seeking redressal of grievances or staking claims for a better bargain in the transactions that take place within and between structures that constitute the system. These are mobilisations not for changing the system, but for changes within the system. Such mobilisations are often viewed as *system correctives*.

1.4.2 Framework for the Analysis of Movements and Change

We can broadly identify two orders of means adopted by movements to bring about or resist change(s). These are ***institutionalized and non-institutionalised means and pertain to a system defined by the 'established power' governing that system***. If it declares a given means adopted by a movement as illegal and subject to severe penal action, it has to be considered as non-institutionalised. There are three aspects of the use of means: (a) that related to the use of ***violence***, (b) that related to its ***social legitimacy*** and (c) that related to the question whether they are ***institutionalised or non-institutionalised***. Means are employed by the state (or the establishment) for overall social control, and also by movements emerging out of contradiction within the societal system.

It may be noted that a given set of means is considered institutionalised or otherwise in relation to the nature of the structure of established power. The state also has the authority to define it is as legal or illegal. Thus an identical mass protest may be accepted as part of the political culture and structure of India or U.S.A. but not so in China or South Africa.

We can now arrive at a framework for analysis by which we can assess more precisely the following:

1) the nature and quality of a movement;
2) the change it aims to bring about; and
3) the means (strategies and tactics) it may use.

In this context six kinds of situation can be identified as presented and explained below:

Means	**Change promoting/resisting goals**	
	Intra-systemic	**Systemic**
Institutional	Quasi-movement Example: Strikes, lockouts, protest marches, meetings etc. for legitimate demands and redressal of grievances. *Stable State (A)*	Quasi-movement tending towards social movement Example: Trade union claims for decision making powers. *Unstable state (B)*
Non-institutional	Quasi-movement tending towards social movement Example: Tebahga movement in Bengal involving peasant revolt for one third crop share by tenants. *Unstable State (B1)*	Social movement tending towards revolutionary movement Example: Naxalite movement, Charu Mazumdar phase—totally underground. *FLUX (C1)*
Institutional Non-institutional	Quasi-movement tending towards social movement Example: Riots, rebellions, peasant revolts against exploitation. *Unstable (B2)*	Social and revolutionary movements Example: Structural changes associated with rebellions, satyagrahas, etc. *FLUX (C2)*

Situation (A): This refers to movements using institutional means to achieve ends, which do not involve any structural changes of the system. For example, farmers'

associations pressing for various subsidies, procurement prices for crops, loan waivers, etc. are not intended to bring about changes in the agrarian system. Such movements are quasi-movements.

Situation (B): This refers to collective mobilisation which seeks systemic changes through institutionalised means. Peasant associations demanding abolition of the institution of tenancy and grant of land to the tiller through legitimate modes of demand articulation, would be the examples. The ***All India Kisan Sabha's*** large scale mobilisation of the peasantry for the abolition of intermediaries (zamindars) is also a good example of this case. This is indicative of an unstable state of the social system with a possibility that non-institutionalised means could surface at a later stage.

Situation (B1): This is characterised by a collective mobilisation which adopts non-institutionalised means for the attainment of intra-systemic goals. The ***tebhaga peasant movement*** in pre-partition Bengal demanding two-thirds share for the tenant cultivator in place of one half of the crop share can be cited as an example of this case. This is an unstable situation as it necessitates non-institutional means to fulfil demands, which apparently do not seek to alter or transform the system. Instead they work for a more equitable sharing of the produce.

Situation (C1): In this, systemic changes are sought solely through the use of non-institutional means, and it points to anomic conditions of total flux. This is a condition in which changes take place with such rapidity that it is difficult to make out the existence of any system(s) or the outlines of any emergent system in between. When the Naxalites decided to annihilate class enemies through conspiratorial means, the situation was a real chaos.

Situations (B2) and (C2): In this combination, institutional and non-institutional means are employed for the realisation of intra-systemic and systemic goals respectively, thus indicating a large participation rate and a greater degree of instability of the social system. The last situation is exemplified by the earlier phase of the ***gramdan sarvodaya*** movement seeking to replace private ownership of village lands by communal ownership of its members, and also by the Maoist ***movement*** seeking to replace the landed rich in power by the numerically larger deprived categories of landless and poor peasants. The movements for national liberation also illustrate this situation.

Check Your Progress III

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) How would you distinguish between a ***quasi-movement*** and a ***social movement***?

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1.5 MOVEMENTS ARISING OUT OF FEUDALISTIC AND CAPITALISTIC CONTRADICTIONS

In a real-life situation, elements of both feudalistic and capitalistic systems can be traced and any given concrete agrarian situation may be predominantly of one type or other or even somewhere mid-way between the two.

Following this conceptual understanding of the process of changes in agrarian systems, we can say that most agrarian mobilisations arise out of :

a) contradictions embedded in the feudalistic structures of agrarian society; and
b) contradictions emerging from capitalistic penetrations in agriculture.

In the former situation, the major contradictions are to be found within the feudalistic agrarian system—the exploitation of and discrimination between agrarian classes and communities. This results from the institutionalised customary practices of surplus appropriation mainly in the form of rent, usury, unpaid labour and other forms of economic oppression pursued by the land owners.

In the capitalistic agrarian system, the major contradictions are between the rural and the urban-industrial, between the farming (community) and the urban industrial capitalist classes, and the conflicting classes within the rural community guided by purely economic factors.

First, we shall briefly discuss the ***Champaran*** (Bihar) 1917 and ***Kheda*** (1918) movements, which were greatly influenced by Gandhi. Thereafter, we shall discuss the two large scale Marxist peasant mobilisations—the ***Tebhaga*** and the ***Telengana***. Later, we shall have a look at the post-independence agrarian movements—the ***Gramdan-Sarvodaya***, and the Naxalite movements. All these would qualify as products of colonial-feudalistic agrarian structures. Thereafter, we shall discuss the farmers' agitations as typical of areas in which capitalistic market influences have become pronounced, including the ***green revolution belts*** and lastly the movements triggered by the opening of domestic markets under WTO agreements.

1.6 MOVEMENTS ARISING OUT OF FEUDALISTIC CONTRADICTIONS (BEFORE 1950)

Between 1860 and 1950, with the exception of half a decade between 1930 and 1935 when prices of agricultural produce did indeed fall, the prices rose continually over this entire period. The single greatest impact, which such a rise in prices produced was manifest in a developing struggle between landlords and peasants for control over the increased value of agricultural surplus. The landlords raised rents. The tenants protested. The landlords asserted their proprietary rights by emphasising their power to evict tenants, while the latter claimed, and were occasionally and with increasing frequency granted, occupancy rights. Over the century, the peasants' ability to resist landlords' control over rent rates and the produce increased and the structure of landlordism stood considerably weakened by the end of the British rule.

The agrarian struggles, which emerged during the British period, are usually classified into two major phases:

i) Revolts upto and including 1857 were launched largely by the tribals and the peasants in a less organised manner. We are not discussing them here.

ii) Revolts after 1857 up to the first half of the twentieth century, intensified in the face of the British economic and political policies, recurring famines, a new land revenue system that proved to be a burden on the peasantry, a new administrative machinery, and new civil laws.

The early twentieth century struggles had two parallel currents in the history of the peasant movement. One was the spontaneous economic struggle against more immediate oppressors like money-lenders, traders, zamindars, British administrators, etc. The other was the more conscious and organised agitation led by the Indian National Congress, mainly by Gandhi, and other movements under the leadership of the Communist Party, both of which were operating on an All India basis.

1.7 MOVEMENTS ARISING OUT OF FEUDALISTIC CONTRADICTIONS (AFTER 1950)

Some movements arose out of the feudalistic contradictions, mainly because the implementation of land reforms was tardy and their progress was hampered by feudalistic forces with covert support from the bureaucracy and the power elite, though the said reforms had been accepted as a matter of state policy.

i) Gramdan 1952

With the coming of Independence, and after the death of Gandhi, on the anvil of Tebhaga and Telengana movements, emerged the **bhoodan** and later the **gramdan** movements as alternatives to the **Tebhaga** and **Telegana** movements. **Gramdan and bhoodan** were extensions of Gandhi's concept for the replacement of private ownership of property by trusteeship, particularly in the case of *land*. Trusteeship implied that owners of the means of production (i.e. land, machinery, etc.) should become trustees of their wealth and enterprises (i.e. land, machinery, etc.), which should belong to the community which labours on it. ***Bhoodan and gramdan*** are based on this concept.

Vinoba Bhave's bhoodan movement began in Nalgonda, the hot-bed of the Telengana movement. Vinoba asked the landed families to consider the landless as their one additional unborn children and to gift their shares to them. In the next stage, land owners in the villages were requested to gift their entire land(s) in the villages. The lands would then belong to the village and not to the individuals. This was no doubt a revolutionary step amounting to demanding an end to private property.

The response to the programme naturally came from tribal communities and the landless and poor peasants of Bihar and Uttar Pradesh. The tribal district of Koraput in Orissa, however, responded almost as one body. The means adopted to mobilise for such changes were based on volition, persuasion and non-violence.

In the initial stages, some remarkable results were obtained. For example, in 1958 about 88 households embraced gramdan with only 18 acres of land in village Berain (Bihar), which was inhabited only by SCs and STs. All villagers were agricultural labourers except one middle class peasant family.

The village then set about creating new institutions—the ***Sarvodaya Sahyog Samiti*** (cooperative society) and the ***gramsabha*** (village assembly). Decisions involved collective farming on 18 acres of ***gramdan land***. Sharecropping contract with landowners had now to be routed through the cooperative society. A community centre, cattle shed and community garden were established through ***sharamdan*** (Voluntary gift of labour). The village children slept at the same place in the community centre complex irrespective of caste differences. A package of village industries was started—the oil press, bee-keeping, production of toddy molasses and, of course, the ***Charkha*** (spinning wheel) for spinning and the ***kargha*** (loom) for weaving. An egalitarian social system evolved rapidly.

The better off farmers started demanding certain concessions for their conditional entry into gramdan which was acknowledged. This led to a chain reaction with other poor peasants demanding similar conditions, which had to be granted. In due course the smooth egalitarian functioning of gramdan was impaired.

The ***gramdan sarvodaya*** movement did not directly engage in struggles against feudal forces of exploitation. It attempted a structural option for the exploited sections of the peasantry and agricultural labourers to build an alternative egalitarian system of production and distribution, which would replace the feudalistic agrarian system.

ii) Naxalbari and Naxalite Movement, 1967 onwards

The Naxalbari movement in the Siliguri subdivision of Darjeeling district, which matured in 1967, derived its name from Naxabari, a village in North Bengal. It was a continuation of prolonged struggles by the peasant association against feudal exploitation and subversion of land reforms. From the mid fifties, the ***Krishak Samiti*** (peasant committee of the Communist Party) engaged in relentless struggles against the landlord class. They would not allow them to evict tenants, or to levy non-legal exactions. They advised tenants not to give the landlords any crop share unless they furnished documentary evidence of the land under tenant cultivation.

Leftists emerged victorious in the 1967 elections in West Bengal. On 2 March 1967, a non-Congress United Front Government was established jointly by the Communist Party of India (CPI), the Communists Party of India (Marxist) [CPI(M)] and a breakaway group from the Congress (the Bangla Congress).

The crux of the problem in West Bengal, like in any other state, in the struggles within the feudal order, was concentration of the ownership of land in hands of landlords. The United Front Government was pledged to bring about long due land reforms—a small plot of land for each poor and landless peasant and their release from the burden of usury.

Soon after swearing-in, the minister in charge of land revenue, a veteran CPI(M) peasant leader, announced a policy of speedy distribution of surplus land among the landless and the stopping of eviction of sharecroppers. The parties had promised land redistribution but were not in complete control of the state, and thus not yet sure how to recover the land transferred malafide by the landlords.

On the ***malafide (benami)*** transfer the minister said, "the government had not yet been able to take any decision. The hurdles put by the Constitution and the court papers and documents are stupendous." (Sumanta Bannerji 1986). The government also realised the strength of the landlords, their control over economic and social affairs and their ability to delay the process of land distribution. This they could do by resorting to the courts, which had no provisions meant to support any progressive laws or easy implementation of those specially pertaining to land.

The Kisan Sabhas had political influence, but organisationally they were not in total control of the villages of Bengal. Thus, the base of the organisation was not strong enough to face the onslaught of the landlords who could draw support of the judiciary and the police in many ways. The landlords took all the possible measures to delay the identification and distribution of surplus land (land above ceiling).

A section of the Kisan Sabha (the North Bengal District Committee owning allegiance to the CPI (M)) could not come to terms with the situation. They attacked the minister in charge for his having submitted to the bureaucrats.

This section of the Kisan Sabha was already active among the peasantry in North Bengal. On 18 March, 1967, after the formation of the United Front Government, in a peasants' conference held by the Siliguri Subdivision Committee of the CPI (M), the leadership gave a call to carry out the following directives:

a) end the monopoly of ownership of land by the landlords;

b) redistribute land through peasants' committees and organisations; and

c) destroy the resistance of the landlords.

Thus, this committee decided to go ahead with a tactic which was quite different from the one envisaged by the CPI (M) party as a whole. As the two differed, ***the Siliguri Committee*** expected opposition from the state government; to counter which they prepared the peasants to fight both the Central and the State opposition.

From March-April 1967, all the villages in that subdivision were organised and 15,000-20,000 peasants were enrolled as whole time activists. Peasants' committees were formed in almost all the villages and they were transformed into armed guards. They soon occupied land in the name of the peasant committees, burnt all land records which had been used to cheat them of their dues, cancelled all mortagage debts, passed death sentences on oppressive landlords, formed armed bands by looting guns from the landlords, armed themselves with conventional weapons like bows, arrows and spears and set up a parallel administration.

The movement was crushed. Contradictions surfaced at various levels. The tactics adopted by the Siliguri Committee differed from those of the Party as a whole. The Party, as we mentioned earlier, was bound by certain legalities. This resulted in a split in the Party and the consequent formation of CPI (ML) in 1969. The Party, however, pointed to the legitimacy of the demands made by the North Bengal District Committee during the clashes that ensued between the peasants of the subdivision and the police. The other partner of the government (the Bangla Congress) and the Central Government, however, discussed the events in terms of a law and order problem. Finally, the circumstances were used by the Central Government to crush the United Front Ministry, and an all out attack was launched against the Communist Parties irrespective of their differences.

Today, the Naxalite movement is not carried out by any single party. Countless groups espouse Naxalite politics and operate autonomously in their chosen areas maintaining, at best, tenuous links with some other groups.

iii) Operation Barga

When the Communist Parties and other leftist forces were voted to power and to form government in 1977, many measures were adopted to relieve the rural population from land related problems, hunger, lack of credit facilities, unemployment and insecurity of tenure. Of the various land reforms in West Bengal, here we are going to concentrate only on Operation Barga, a programme for the registration of sharecroppers, which was both a culmination of prolonged struggles and a movement in its own right.

Bargadars exist in large numbers in West Bengal and they, along with the agricultural labourers, are the backbone of agriculture there. Operation Barga has been a major campaign in West Bengal since 1978, after the Left Front government came to power in 1977.

The Bengal Bargadars Temporary Regulation Bill introduced at the end of Tebhaga movements, for example, was an expression of the problems faced by bargadars. Operation Barga was an operation for materialising the provisions of the then existing laws. One of the major aspects of this operation was the registration of bargadards. This was a stupendous task before the peasant organisations headed by the left forces. West Bengal had a long history of Zamindar settlement. Forms of tenancy had been inbuilt in the system in which there were no records. Oral contracts were the order of the day and any papers worth maintaining were with the landlords and the more well to do landowners. Thus, identification of barga land was a major task before the peasant organisations.

The bargadars were bound to the landoweners economically, politically and even socially. The temporariness and ***tenant at will*** status forced them to live with the fear of eviction and, therefore, made them subservient to the power of the landowner. The peasant organisations had to first breakthrough this relationship and later after the registration, to give protection to the bargadars from any attack mounted by the old power groups, like the bargadar landlords. Of course, these efforts received a boost from the political and administrative support that these organisations received from the state government.

'Operation Barga' appeared to be the culmination of all the anti-feudal struggles of the past; the programme itself was a struggle, a movement which received support from the state, a state which had the political will to implement the laws. As a result, by 30th June, 1985, 1.31 million barga recordings were completed out of an estimated total of 2 million bargadars. The registration of bargadars provided the sharecropper with legal security of tenure, but they continue getting affected by poor living conditions and are compelled to sell their certificate (patta) sometimes. Of course, institutional finance and other poverty alleviation programmes have been introduced to stop this trend. By 1983, nearly 300,000 sharecroppers were provided with such credit.

The cropshare norm seems to be settling for 75:25 with the bargadar providing the bulk of the inputs into farming. ***The structure of tenancy has been 'secured'*** through security of tenure provided to the bargadar, and this has created such conditions for the bargadar as 'free' him from the many economic and non-economic obligations that 'tied' him to the landowner earlier.

Check Your Progress IV

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Bring out the main features of Bhoodan and Gramdan movements.

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2) List the main features of Operation Barga.

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1.8 MOVEMENTS ARISING OUT OF CAPITALISTIC CONTRADICTIONS

Agrarian mobilisations upto the sixties took place largely in response to contradictions within the old agrarian systems dominated by feudal relations. Thereafter, the agrarian situation seems to be changing in certain areas where ***market forces and prices have*** tended to play an ever increasing role in the lives of the farmers. Over a period of time, areas growing cash crops in ***Tamil Nadu***; areas under onion, sugarcane, cotton, beedi and tobacco cultivation in ***Maharashtra***; areas under cotton, sugarcane, hybrid jowar, etc. in ***Karnataka***; and wheat growing states of ***Punjab*** and ***Haryana*** which were the earliest to reap the benefits from the green revolution, began witnessing a new consolidation of rural power. Strong farmers' organisations have emerged in these areas.

By August 1980, the ***Ryota Sangahas*** active in ***Shimoga, Belgaum, Bijapur and Bellary*** districts in Karnataka consolidated themselves on a non-party basis. The outcome was the establishment of the new ***Karnataka Rajaya Ryota Sangha (KRRS***), the same name as that of CPI led KRRS, with the leadership in the hands of Rudrappa, Sundaresh and Nanjundaswamy (a professor of law and a Lohia inspired socialist). This crystallisation was facilitated by Narayana Swamy Naidu who earlier toured the State under the sponsorship of Shimoga leaders. Thenceforth, an ideology of *ruralism* would guide the future expansion of the movement. Specific issues and area-specific problems submitted from time to time, were being replaced by a new framework, which *"made clear that agriculture had to be treated as a commercial unit as in industry. The same treatment was demanded for agriculture in respect of price policy and supply of electricity and other inputs as was given to industry"*.

The KRRS inspired movement is described as a 'village movement' rather than a farmers' movement. There is emphasis on the 'identity and self-respect' of the villagers, which the KRRS has brought to them.

i) Recent Peasant Movements in Orissa

The peasants of Orissa have been agitating over the issue of low prices for paddy or rice since 2000.

The question of 'under-rates' has been there for long, but the origin of this protest is quite difficult to trace. According to Surendra Sahu of the ***Jharsuguda Anchalika Krushaka Sangathana*** (Regional Peasant Organisation), the protest started in November 2000 in Jharsuguda. Initially, the peasants organised themselves to press for their demand for famine relief. (This district was affected by famine during the year 2000-2001.) The next season, that is during the monsoon of 2001, the district was inundated by floods caused by local rivers. Since then, i.e. July-August of 2001, the demand of the peasants shifted to flood relief. Later, towards October–November 2001, the issue in front of the peasants was the proper sale of whatever little paddy they had produced despite the vagaries of nature. And now their organisation seems to be growing in strength.

But the people in the district of Bargarh, which is irrigated by the Hirakud Dam, had been fighting for the proper sale of their paddy. In fact, they clearly remember the protest they had registered during the year 2000. On 2nd November, 2000, at Godbhaga and on 10th November, 2000, at Debahal, there was a *Rasta Roko* (Road Blockade) on National Highway No. 6, to have paddy sold in the premises of the Regulatory Market Committee (RMC) for the stipulated minimum support price. This led to some relief for some days as the paddy was purchased at the minimum support price in the RMC premises. But again after some time this practice fell into disuse. In Barpali on 3rd February, 2001, as the paddy was not purchased from the farmers in the RMC premises, the peasants stuffed the Block and *Tahsil* Offices with their paddy in protest. This became a method of protest and was tried again on 8th May, 2001, at Attabira Block. On 10th May, 2001, after a *Rasta Roko* protest (involving National Highway No. 6), which was preceded by a massive rally of peasants from the various parts of the district and numbering around 10,000, they assembled at Bargarh and the district administration was brought to its knees. An agreement was reached between the protesting peasants and the district administration. The important points in the agreement were as follows:

1) *The sale and purchase of paddy was to be effected in the RMC arena.* This was to put a check on the mill owners. Earlier, the practice by the mill owners was to buy paddy from outside the RMC, at a price much below the stipulated minimum support price and sell it to the Food Corporation of India at a much greater profit.

2) *The second important point in the agreement was regarding payments.* In case the sale is as little as 15 bags of paddy, the buyer is to make payments immediately. If it is higher than that, then 30 per cent of the price is to be paid at the

RMC and the rest within the next week. Besides, the Fair Average Quality standard or FAQ analysis is to be done at the RMC premises and not at the rice mills.

Apart from these, there are various other local problems. The Bargarh district administration/collector had the grand idea of introducing photo-identity cards for peasants who would sell paddy at the RMCs. The objective was to identify and put a check on the ***'beparis'*** who collect paddy from peasants at a cheaper price and sell it at higher rates at the RMC.

Then there was the question of the poor-peasants, marginal peasants, or landless and dalit peasants. This was addressed squarely by the socialist leadership of the *Orissa Rajya Krushak Sangathan* (Orissa State Peasant Organisation) at Bargarh. According to Lingaraj, a popular peasant leader of the *Orissa Rajya Krushak Sangathan* of the region, this section of the peasantry has very little surplus to sell in the market. Very often, the necessities of cash make them part with some of their own food (so it can hardly be called surplus). Usually, they have between 5 to 15 bags of rice to sell.

When they were under the pressure of the movement, the mill owners preferred to buy in bulk from peasants who could bring between 100 to 500 paddy bags to sell. In this situation most marginal peasants preferred to sell their paddy to their village ***'beparis'*** or agents of the mill owners. In fact in the far flung villages, these ***beparis*** and agents provide the required cash to peasants, and in return receive from them paddy during the harvest-season. In places like Talsigagd**,** Gaisima**, *and*** Khuapali, in the district of Bargarh**,** the socialist activists set an example by forcing the mill owners to purchase from the small-sellers/marginal peasants first, and then from the rest of the sellers. This sacrifice led to some activists being rebuked by their own family members for not helping their own sales.

ii) Recent peasant movement in Karnataka

It was about 15 years ago, i.e. in 1991, that the Congress Government, then ruling at the Centre, had initiated the *"new economic policy"* of *privatisation, liberalisation and globalisation.*

Gulbarga district was in the news those days because of *kisan* struggles for remunerative prices for *tur dal* and other agricultural products. These activities acquired significance in the wake of ***suicides committed by some of the peasants*** as this class of people was not getting remunerative prices and its members were unable to repay the loans they had contracted.

As a part of the statewide agitation called by various *kisan* organizations to protest against the Union Government's import policy and to show their wrath against the anti-people policies of the S M Krishna government in the state, a *Rasta Roko* agitation was successfully held throughout Gulbarga district.

At Bangalore, the state's capital, hundreds of activists belonging to *kisan,* women's and working class organisations held a *dharna* in front of the Chief Minister's official residence. The response was reminiscent of the tumultuous days of the peasant agitation two decades ago, popularly known as the *Navalgunda-Nargunda peasant struggle*, which in its wake brought to power the first non-Congress government in the state.

In view of the agitations by *tur dal* growers in the northern parts and by coconut and areca nut growers in the western parts of Karnataka asking for the state government's intervention to stop the collapse of prices in the case of these crops, the milk producers' struggle and the agitation against the steep hike in electricity tariff announced by the state government, the ***Karnataka Prantha Raitha Sangha (AIKS), Karnataka Rajya Raitha Sangha, Karnataka Prantha Krushi Kooli Kaarara Sangha (AIAWU***) and the state unit of AIKS (Ajay Bhavan) called for a *Rasta Roko* agitation on February 5-6, 2001 and *Jail Bharo* agitation on February 7, 2001. They thus endorsed the call

given by seven Left-led peasant and agricultural workers' organisations which had organised an all-India convention and March to Delhi earlier.

The sad plight of the growers of *tur dal,* areca nut and coconut and also that of the milk producers was a direct outcome of the import policy dictated by the WTO and more than willingly followed by the Central Government. The agitating organisations demanded intervention from the state government to arrange support for the growers of *tur dal,* areca nut, coconut, paddy and maize. They also demanded withdrawal of the steep hike in electricity rates announced by the state government as per the IMF-World Bank dictates. Another demand was that the state should halt dismantling its public distribution system, elimination of which too had worsened the plight of the *kisans* and other poorer sections.

iii) Other recent Agrarian Crisis and Agrarian Struggles

In recent time a serious crisis has emerged in the field of Indian agriculture. The crisis is most glaringly manifested in the growing incidence of starvation deaths and farmers' suicides. While the largest number of starvation deaths are still routinely reported from the backward regions of the country, especially ***Andhra Pradesh, Orissa and now increasingly from Rajasthan***, the ***trend of suicides*** generally prompted by heavy indebtedness, crop failures, or inability to find a market for the produce, is noticed even among the well-to-do farmers in the agriculturally developed areas of ***Punjab, Maharashtra and Karnataka.***

The crisis has also led to a new phase of agrarian unrest. Peasants and farmers have strongly opposed the WTO, growing penetration of giant agribusiness firms and attempts to corporatise agriculture. Once again powerful farmers' movements are being witnessed in the areas of green revolution, Punjab and Haryana in particular.

While the WTO agreements, especially the removal of quantitative restrictions (QRs) on imports, and as a result, the thoroughly unequal competition with heavily subsidised big corporate farmers from the Western countries has aggravated the present crisis, at the root of it lies the accumulated anomalies of the underlying landlord path of capitalist development in Indian agriculture.

Sections of big farmers have started dreaming about exporting to the world market and securing super-remunerative prices. And then the corporate sector has started demanding **'**level-playing field' even as it began forging closer ties of collaboration with the MNCs, but the big farmers have came up with the demand for insulation from the WTO.

The AIKSS organised a peasant conference at Faizabad in UP against the new agricultural policy in March 2001. This was followed by a '***lutera bhagao, krishi bachao'*** (stop this plunder, save agriculture) campaign in the course of which mass signatures were collected on a 'freedom charter' against the WTO. In September 2001, an impressive 'freedom from debt' conference was held at Mansa in Punjab and finally on November 9, 2001 a massive anti-WTO rally was held in Delhi to protest the launch of a new trade round at the Doha summit of WTO.

iv) Conclusions

The most recent manifestation of farmers' mobilisation has seen the emergence of Mahinder Singh Tikait, himself a small/medium farmer, projecting the aspirations of the farmers of West Uttar Pradesh. One after another, newer areas of capitalistic market penetration is throwing up leadership which speaks more or less the same language, makes more or less similar demands, applies more or less similar strategies and tactics and always involvs large rural masses.

What kinds of change are involved with such large scale farmers' mobilisations? Firstly, the ***"peasants"*** are becoming ***'farmers'*** with their entry into cash economy. This entry implies use of chemical fertilizers, pesticides, hybrid varieties of seeds, irrigation, electricity,

diesel tractors, power tiller and so on, which are all monetized. So there arises the question of a ***'remunerative'*** market price for the produce.

The second point to note is that in these areas of cash economy, farmers get their credit from formal institutions like banks, cooperative credit societies, etc. So, the role of the money-lender (usurer) is more or less eliminated or considerably reduced. When debts accumulate, the farmer does not face 'bondage' threats. He has an association which gets him a debt relief or a waiver or a deferral of repayment.

Thirdly, the landowning farmers are not characteristically related to each other through a hierarchy of rights and obligations. They increasingly tend to get related to each other as members of the common interest groups, viz. the 'farmers' associations'. Such membership, based as it is primarily on economic interests, tends to reduce or alter the distinction of caste. In this sense the association plays a secularising role and comes out clearly in terms of class interest.

Fourthly**,** the farmers' mobilisations have been by and large open and non-violent, in contrast with unrest and conflicts in feudalistic agrarian systems. The movements of the feudalistic agrarian system had attacked the foundations on which the system rested, whereas in the movements just discussed, the quest has been for gaining a larger share of the existing system without upsetting the power balance drastically.

Fifthly, almost invariably in these areas, peasant associations, which had earlier fared well fighting against feudalistic oppression and exploitation within the agrarian systems, have been overtaken by farmers' associations that have located the major contradiction between the rural and the urban. This is especially so in the areas where the impact of market forces is being experienced.

The principal participants in this contradiction are the agricultural labourers and poor peasants on the one side and the rich peasant and landlords on the other. It is the agricultural wage labourer who seem to be emerging as the class whose interests are least accommodated within the framework of the *'ruralist ideology'* so far. Freed from attachment and bondage which were associated with the security of some patronage, the agricultural wage labourer is still distant from the security of patronage, which the formal industrial sector provides to his counterpart, or in keeping pace with the benefits for which farmers are struggling.

The ideologues and champions of the ruralist ideology prefer to conveniently overlook the fact that consistent with their *logic the agricultural labourer also should get the same security of wages as his urban/industrial counterpart*. Instead, whenever there is a movement asking for a rise in agricultural wages, it is met with violence from the rich peasants and the landlords. Many a time these attacks on the agricultural labourers are treated as caste wars overlooking the class contradiction. On the whole, the changes taking place in these areas range from quasi-structural to structural depending upon the stage of transition an agrarian system is in between the feudalistic and the capitalistic orders.

Check Your Progress V

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) List the main features of the farmers' mobilisations of the seventies and the eighties.

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2) List any four changes caused by large scale farmers' mobilisations in recent times.

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1.9 LET US SUM UP

In this unit we have identified, very broadly, two kinds of agrarian contexts which are associated with correspondingly different kinds of agrarian movements.

The first is where mobilisations are taking place in response to ***feudalistic oppression.*** In the feudalistic agrarian system, status discrimination and the system of exploitation are fused within a system of patronage. It is this system, which the agrarian mobilisations are attacking. Whether it be the share of tenants produce, unpaid labour, minimum agricultural wages, customary exactions, bondage of agricultural labourers, right over their women for sexual gratification and other symbolic behaviours of deference expected of inferior peasants, these are the attributes which characterise the feudalistic structures against which agrarian movements are directed.

The second kind of agrarian movements are taking place in areas where the ***market forces*** have introduced cash economy. This has forced the farmers to calculate their costs, and has made them sensitive to the prices which their agricultural produce must fetch if they have to survive or prosper ***(capitalistic agrarian system).*** It contends that the exploitation of the rural community by the urban industrial elite is the root cause of the plight of the farming communities. Consistent with this logic, it does not accept that the farmers/peasants are differentiated among themselves as small, medium and big farmers. The talk of such differentiations they contend is a cleverer use of the urbanites to divide and rule over the farmers. ***The farmers demand that the state should extend to them the same kind of benefit structures, facilities, concessions, infrastructures, etc. as they extend to the urban-industrial system***. Interestingly, when it comes to agricultural labourers, the farmers have so far shied away from fighting for their wage and other employment securities.

These two types of agrarian systems may be considered as 'pure' or 'ideal' types. This means that in concrete empirical situations they are likely to co-exist with varying degrees of predominance of one over the other. This is so because our agrarian scene is undergoing changes with the release of market forces and rural development programmes. In an important sense, ***conflict is endemic to development.***

To sum up, we have discussed a number of agrarian movements arising from both feudalistic and capitalistic contradictions to demonstrate their nature and variety in terms of the contexts which gave rise to them, the means (strategies and tactics) adopted by them, and the quality of change with which they are associated.

1.10 KEY WORDS

Bargadar : is a person to whom land is alloted through registration under certain conditions.

Barga land : Land alloted to Bargadar is called Barga Land.

Corporatise : To run agriculture as an industry

Agriculture : An unit of measurement for measuring land. Generally, 20

Katha *kathas* make a *bigha*. This measure, however, varies from place to place and so does the number of *bighas* that make an acre.

Landlord Path : In line with traditional fuedal structures.

Level-playing field: On equal terms

Sangams : Village level organisations of members participating in the ongoing struggle. The activities and membership is organised and not loosely knit.

Tebhaga : was a movement of the sharecroppers demanding the right to retain two-thirds of the produce for themselves, thus, advocating a reduction in the share they had to pay to the owners of the land known as *jotedars* (landlords and rich peasants). The tenants, better known as *bargadars* (meaning sharecroppers) were entitled to 50 per cent of the gross crop output, but in reality the net crop share which they were able to take back home from the *jotedar's khamar* (threshing floor) was much less. This was because the crop and other loans and also the customary non-legal exactions were adjusted before the *bargadars* could take their share. Sharecroppers had no security of tenure.

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1.12 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Check Your Progress I

1) The term 'agrarian' generally refers to cultivated or agricultural land including its management or distribution. On the other hand, the term 'agrarianism' refers to the movements for the division of land and changes which are supposed to improve the economic status of the farmers. While as the term *agrarian outrage* is simply an act of violence emerging as a result of discords between classes having antagonistic relationships.

Check Your Progress II

1) A movement is a collective mobilisation of people for a particular cause. It brings about changes, which are directed towards the achievement of its objectives. The main features of a movement are:

   i) A movement has a comprehensive ideology;

   ii) Movements have strategies for achieving their aims.

Check Your Progress III

1) Quasi movements are those, which bring about (or resist) quasi-structural changes within the system. Social movements are those that seek to bring about (or resist) alternative structural changes by making additions or causing deletions to some structures.

Check Your Progress IV

1) *Bhoodan* and *gramdan* were attempts to bring about total redistribution of land, leading to the termination of the system of private property, to be substituted by trusteeship arrangemetns. A kind of collective ownership was envisaged. The *gramdan sarvodaya* movement attempted a structural option for the exploited sections of the peasantry and agricultural labourers in order to build an alternative egalitarian system of production and distribution, which would replace the feudalistic agrarian system. In this sense, it was a social-transformatory movement. It sought to bring about this change through non-violent means. Unfortunately, the instrument of satyagraha was not used convincingly whenever these *gramadan* villages had to face a hostile environment. The *gramdan sarvodaya* movement shied away from both militant as well as non-violent struggles, when the feudal interest overtly and covertly attacked the new system. By default, the leadership played into the hands of the established ***status quo*** with ruinous consequence for the movement.

2) Registration of the bargadars; Security of tenure; Record of rights; and Distribution of certificates (pattas).

Check Your Progress V

1) The farmers' mobilisations of the seventies and eighties arose out of the contradictions which developed following the strategy adopted for the green revolution in the sixties. Today, the main features of these mobilisations are as follows:

   They are under the leadership of rich and middle level farmers who are the actors in these movements and also the principal beneficiaries or losers;

   - They are interested in promoting their sectional interest and not in raising questions pertaining to the agrarian system as a whole.
   - They do not incorporate the interest of the landless agricultural labourers and poor peasants.

- Their issues relate to the operations of market forces and are guided by the development of productive forces, e.g., technology, etc.
- By and large, these mobilisations have been non-violent.
- They have not formalized as political parties.

2)
- formation of interest groups, e.g. as farmers, cutting across caste affiliations;
- promotion of class interest;
- priority to economic factors of production over non-economic factors;
- transformation of peasants into farmers due to the process of penetration of market forces in agriculture.

UNIT 2 LAND REFORMS

Structure

2.0 OBJECTIVES

After reading this unit, you should be able to:

- describe and explain the generic issues involved in the process of land reforms;
- enumerate the different components and the features of land reforms; and
- identify the problems which need to be attended to.

2.1 INTRODUCTION

Since independence, the objectives of the Land Reforms Policy have been as follows:

— restructuring agrarian relations to achieve an egalitarian social structure,

— eliminating exploitation in land relations,

— realising the age-old goal of land to the tiller,

— increasing agricultural production, and

— infusing equality in society.

Each state in India has its own legislation and programme of land reforms. It will not be possible for us to go into the details of these variations, given the scope and space of this unit. This unit aims at a brief review of the developmental changes regarding land reforms in India. It discusses the meaning of land reforms, the historical context in which they were introduced, the measures we have adopted and finally the new developments. While you read about land reforms in this unit, you will read about the Green Revolution in the next unit of this block. Taken together, they give you a reasonable understanding of the agarian issues confronting rural development in India.

2.2 MEANING AND OBJECTIVES OF LAND REFORMS

The term ***'land reforms'*** specifically referes to land tenure reforms. The word tenure, derived from the Latin word "*teneo*", means 'to hold'. Therefore, land tenure is used to refer to the conditions under which land is *held*. Or, we may look at it as an arrangement by which farmers hold or control land and the conditions that must be observed for its use and occupancy. Land is expropriated or confiscated and redistributed in order to maintain this system.

Land reforms are visualised as an instrument of social justice as they seek to do away with exploitative relationships characterised by sharp class division between rich landowning classes and impoverished peasants with no security of tenure. It is a step against the concentration of land holdings in the hands of a few absentee/non-cultivating owners, through imposition of ceilings on the size of holdings, which can be owned by a family. Although land reforms are popularly understood to mean redistribution of land, their scope is much wider (see Box 1).

Box 1

Components of Land Reforms

Land Reforms encompass mainly five components:

i) Abolition of intermediary tenures;

ii) Tenancy reforms;

iii) Ceiling of land holdings and distribution of surplus land;

iv) Consolidation of holdings; and

v) Compilation and updating of land records.

Land reforms alter the power structure, both economic and political, since land has always been a source of wealth, income, status and a reflection of the interlocking class and caste structure of Indian society. It empowers the actual tillers of the soil, and enables them to seek development benefits from the state. Thus, they are also a means of increasing agricultural production through land development, as the interest of peasants in investing in the land they own grows significantly.

Apart from this, land reforms would also enable a more equitable distribution of land, which in turn will generate incomes on a more equitable basis. The generation of such incomes will lead to greater demand of industrial goods through increased purchasing power among the lowest sections of society who do not posses any land whatsoever. Thus, land reforms are seen as a way of not only increasing income and employment in the agricultural sector, but also in the industrial sector.

Since, the nature of the problem varies widely in different regions, the policy on land reforms requires a flexible approach to respond to the local requirements. For countries with a large agricultural base, it is essential that land-man relationships are properly defined. The Government has strived to change the ownership pattern of cultivable land, but has had limited success so far. The abolition of intermediaries was a significant achievement after independence. Contrary to it, the lack of progress in the other components of the land reforms programme, viz. implementation of land ceiling laws, security of tenure for tenants and consolidation of land holdings, remain a matter of serious concern (10^{th} Plan document) even today. Therefore, agrarian structure in the country still continues to be as unequal as before. Even now, above 60 per cent of the workforce is engaged in agriculture, majority of whom are either marginal farmers or landless labourers living in abject poverty.

We hope that the meaning and objectives of land reforms are clear to you now.

Check Your Progress I

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) List the major objectives of land reforms.

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2) What are the components of land reforms?

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2.3 LAND REFORMS: HISTORICAL PERSPECTIVES

It is important for us to understand the genesis of land reform measures in India. In this section we will present a summary account of the origin and the historical developments, which gave shape to concerns about land reform measures in the post- independence era. In this section, you will come to know about the structural changes in the land related policy during the pre-independence as well as the post-independence period.

2.3.1 The Major Break with the Traditional System

Before independence, India had never been governed by a single ruler. In the late Hindu Period (Ashoka and Gupta periods) and throughout the Moghal period, a large part of North India was under the central rule and, therefore, had uniform land tenure systems. The rest of India comprising several states, however, was separately governed. The tenurial system in the Moghal period was essentially a *ryotwari* system, under which land was held directly by a tenant. ***Todar Mal, the Finance Minister of the Moghal Emperor Akbar (1556-1609***) improved the system of land revenue collection by fixing it at one-third of the average yield of grains and valued at the average of 10 years' price. After the death of Aurangazeb (1707), and with the declining power of Moghal rulers, a class of ***intermediaries emerged***, which entrenched itself ***between the ruler and the cultivators***. They collected the revenue from farmers, gave nine-tenths to the ruler and kept one-tenth for themselves.

When the British came to India, they first tried to collect revenue through professional tax collectors and later by auction to the highest bidder. This system failed before long. Between 1770 and 1793, the device of permanent settlement of revenue, with *zamindars* having proprietary rights on land, was introduced. After the British established their

right to collect land revenue, all thitherto *de facto* authority over land became *de jure*. New rights were conferred and new settlements followed. The type of settlements to be made and the criteria on which revenue was to be collected were finalised by the British authorities after many years of debate and deliberations.

Since the British had to consolidate their position in India, need was felt to regularise the revenue collection system, which they did by working out different settlements with the different sections of the peasantry in different regions.

2.3.2 The Settlements

Permanent Settlement System for assessing land revenue was first introduced by the British in Banaras in 1773. Later, the ***Bengal Permanent Settlement Regulation of 1793*** was passed by ***Lord Cornwallis.*** It was applicable to Bengal, Bihar, Orissa and Uttar Pradesh. The traditional revenue collectors, who wielded considerable political, social and economic authority at the local level, were recognised as proprietors of the land and also agents for the collection of revenue on behalf of the government. The original owners of the land (who had the usufruct rights) were reduced to the status of tenants who could be expropriated at the proprietors' will.

The *zamindari* system (as a result of permanent settlement) was resisted at a number of places. As a result, the other variants that came up at different places were as follows:

a) the *Malguzari* settlement, where village headmen were recognised as *malguzars;*

b) the *Jagirdari system* in which the *zamindar* did not have proprietary rights on the soil, but enjoyed the right to collect land revenue;

c) the *Ryotwari* system, whereby the Government settled the rents directly with the ***ryots*** (cultivators) without the intervention of an intermediary. This settlement was applicable to western and southern India; and lastly

d) *Mahalwari* system, by which the land belonged to a small group of families who were usually the most powerful in their region and were responsible for paying rent to the state. This settlement covered the north and north-western provinces of India.

A distinctive feature of the above settlements, that affected agricultural production badly, can be understood better with the help of an example. Between the *zamindar* of a certain estate and cultivating tenants, there were ***four groups of intermediaries***. They were all middlemen and rent collectors, in no way interested in agricultural progress. Each of them extracted a certain sum from the one below him in hierarchy. This system led to social unrest among cultivators. Subsequently, on the recommendation of Select Committees, a tenancy act, the Bengal Rent Act of 1859 was passed. For the first time, an attempt was thus made to define ***occupancy tenancy***. The Act defined occupancy tenants as all those who were continuously in cultivating possession of the land for 12 years.

Between 1859 and 1938, many tenancy acts were passed and abolished by the British to get rid of the system of abuses by giving the tenants a measure of protection. This led to setting up of ***Bengal Land Revenue Commission (1940),*** commonly known as the ***Floud Commission***, which recommended that the *zamindari* system was detrimental to agricultural efficiency and should be abolished. It also went on suggesting that the state should acquire all lands of rent receivers. The British succeeded in some states (Bengal, for instance) but failed in many states.

By the time the British rule came to an end, intermediary tenures in *zamindari* and *jagirdari* areas and sub-leasing in the *ryotwari* areas had given rise to an agrarian structure in which unproductive interest groups held the reins. Simultaneously,

concentration of land in the hands of a few continued to grow and landlessness, hunger, unemployment and indebtedness reached unprecedented hights. Eviction and insecurity of tenancy aggravated the problems, whioch needed to be addressed immediately in independent India.

Having gone through the above details, you must appreciate the context in which the need to recast the land reforms policy was felt after independence. Now, we will discuss the steps taken to address those concerns.

Check Your Progress II

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) What were the different land related settlements drawn up by the British?

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2) What were the main problems in pre-Independence land tenure system?

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2.4 APPROACHES TO LAND REFORMS: A BREAK WITH THE PAST

P.C. Joshi has pointed out that attempts to directly alter the pattern of the distribution of land holdings assumed the form of ***four types*** of approach in land reforms:

i) Land reform '***from above'*** through statutory enactments made and implemented by the state legislatures on the lines broadly indicated by the Central Government.

ii) Land reform due to ***the pressures of militant*** peasant action from below (Telengana and Naxalbari movements, for instance) and to some extent, land grab movement by various left peasant organisations.

iii) Land reform ***'from below'*** by persuading landlords and through peaceful pressure by peasants *(e.g. bhoodan* and *gramdan* movements under the leadership of Vinoba Bhave).

iv) Land reform through ***legislative enactments 'from above'*** in combination with peasant mobilisation 'from below' (e.g. controlled land seizure in West Bengal under the United Front Government during 1967-69 and protection of poor peasants in Kerala under CPI Ministry).

Land reform continues to be a state subject, but the Central guidelines provide the framework and the direction for enactments by the state legislatures and implementation of land reform measures by agencies of the state governments.

We shall now discuss some of the major concerns expressed in these guidelines and the shape that they intended to give to the crucial programme of land reform.

Following the policy directive of the First Five Year Plan, wherein increasing agricultural production was accorded top priority, the Government set up a Central Committee for land reforms to review from time to time the progress of land reforms in different regions and to advise the states on their land reform proposals. The Plan document stressed that the main outlines of the policy would have to be conceived in terms of different interests in land, *viz.* those of a) intermediaries, b) large owners, c) small and middle level owners, d) tenants at will and, e) landless workers.

The first major landmark in *land policy* came with the report of the ***Congress Agrarian Reform Committee, 1949,*** under the chairmanship of ***J.C. Kumarappa*** (see Box 2). The Committee was in favour of abolishing feudal intermediaries. Even the intermediaries that existed below the *zamindars* and *jagirdars* were proposed to be got rid of.

Box 2

Recommendations of Kumarappa Committee

- Elimination of all intermediaries between the state and the actual tillers of soil.
- Subletting of land to be prohibited except in the case of widows, minors and other disabled owners.
- Providing full occupancy rights on the completion of six years of tenancy.
- Restrictions on the resumption of land by the landowner under the pretext of self- cultivation.
- Safeguarding the position of tenants in the cases of resumption of land by land owners.
- Financial (institutional) support for tenants to realise the above measures.
- Fixation of reasonable rent.
- Setting up of a separate Central Land Commission along with an independent machinery vested with the necessary powers to quicken the pace of land reforms.

Before formulating the proposals for the Second Five Year Plan (1956-61), the Planning Commission constituted a Panel on Land Reforms with the aim of reviewing the progress in the implementation of land policy proposed in the First Plan and studying further steps in connection with the Second Plan.

Detailed proposals on land reforms were set out in the Second Plan for:

- The abolition of intermediaries;
- tenancy reforms (regulation of rent, security of tenure for tenants, and conferment of ownership on them);
- ceiling on land holdings; and
- agrarian reorganisation, including consolidation of holdings and prevention of sub-division and fragmentation.

The proposals in the Second Five Year Plan were essentially in the nature of a broad common approach which had to be adapted and pursued in each state with due regard

to local conditions and in response to local needs. In November 1969, the Chief Ministers' Conference, convened by the Ministry of Food and Agriculture, emphasised the need for a Central body for watching the progress on land reforms and providing guidance to state governments.

In September 1970, a subsequent Conference of Chief Ministers on Land Reforms held in Delhi decided that the entire range of problems connected with land should be referred to a Central body. Accordingly, the ***Central Land Reforms Committee*** was constituted under the chairmanship of the Union Minister of Agriculture. It looked into the question of ceiling, exemption, compensation, distribution of surplus land, and implementation of reforms.

The Draft Fifth Five Year Plan (1974-79) gave its assessment of land reforms in the following words:

"… … the laws for the abolition of intermediary tenures have been implemented fairly efficiently, whilst in the fields of tenancy reform and ceiling on holdings legislation, it has fallen short of the desired objectives and implementation of the enacted laws has been inadequate".

The National Commission on Agriculture (1976) in its report on 'Policy and Strategy' emphasised that for optimum results from agrarian restructuring, the programmes of land reform, consolidation of holdings, land development, irrigation and drainage should be integrated and executed in a proper sequence.

The Sixth Plan (1980-85) observed that the less than satisfactory progress of land reforms has not been due to deficiencies in the policy but rather due to tardy implementation of reforms and conferment of ownership rights. Both the Sixth and the Seventh Plans stressed therefore, the effective implementation of the land reforms policy covering all the policy instruments (see Box 1). The Seventh Plan enunciated land reforms to be an intrinsic part of anti-poverty strategies and their need has been reiterated in every successive Plan.

The Eighth Plan (1992-97) stressed that *landlessness* is a root cause of rural poverty. The Plan set seven objectives of land reforms as follows:

- Restructuring of agrarian relations to achieve egalitarian social structure;
- Elimination of exploitation in land relations;
- Actualisation of the goal of "land to the tiller";
- Improvement of the socio-economic conditions of the rural poor by widening their land base;
- Increasing agricultural productivity and production;
- Facilitating land-based development of the rural poor; and
- Infusion of a greater measure of equality in local institutions.

Land reforms continued to be an important policy instrument for poverty alleviation in the Ninth Plan (1997-2002). The Plan, thus reiterated the basic ingredients of land reforms policy, and emphasised the following issues:

- To detect and redistribute the ceiling surplus land,
- To enforce the ceiling laws stringently as the small and marginal farms were viable in terms of efficiency and equity,
- Rights of tenants/sharecroppers to be recorded and security of tenure to be provided to them,
- Leasing of land should be made permissible within the ceiling limit,

- The poor should be given access to wasteland and common property resources,
- Land rights of women must be ensured,
- Consolidation of land holdings be expedited with active involvement of village people, and
- Updation of land records was considered a necessary pre-requisites for the success of the reform policy

The Tenth Plan (2002-07) admits that the need for the effective implementation of the existing land ceiling laws can't be over-emphasised. The changes in the agrarian economy warrant a fresh look at tenancy laws, which may need to do away with all restrictive tenancy conditions. Farmers owning land below the ceiling limit may be provided a guarantee that their land would not be taken away. The fixation of rent could be left to the market forces. Given the extent of concealed tenancy in states that have banned tenancy, it is not likely to increase the area under tenancy dramatically in the short run. In the medium- to long-term, however, more land is expected to come on the land lease market which can be accessed by the rural poor.

Keeping this in view, the ***National Agricultural Policy (2000***), *inter alia*, gave emphasis to the following issues to be accorded utmost attention for rural development and land reforms:

i) Consolidation of holdings all over the country on the pattern of North -Western States;

ii) Redistribution of ceiling surplus lands and waste lands among the landless farmers, unemployed youth together with some initial start up capital;

iii) Tenancy reforms to recognise the rights of the tenants and share croppers;

iv) Updating, improvement in and computerisation of land records and issuing land pass-books to farmers; and

v) Recognisation of women's rights on land.

Check Your Progress III

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) List five main recommendations of the Kumarappa Committee on agrarian reforms.

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2) What were the major issues highlighted in the Ninth Plan to accelerate land reforms?

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2.5 ABOLITION OF INTERMEDIARY TENURES

Legislative measures for the abolition of intermediary tenure started with Uttar Pradesh with the *Zamindari* Abolition and Land Reform Act of 1950 of U.P. followed by legislations in other states. The pattern of land ownership is a key element for ushering in change. Since the *Zamindari* Abolition Act of U. P. was hailed as an agrarian revolution, you may be interested in knowing its key elements. These were:

i) It abolished all rights of *zamindars* and *jagirdars* and put a ban on further acquisition of land.

ii) Abolition of intermediary tenures was effected on payment of compensation to the land-owners.

iii) The vast mass of the peasantry was freed from all illegal exactions in cash, kind and services.

iv) Land records were created and survey and settlement was carried out in these areas.

v) Holdings were demarcated on the basis of the individual as a unit.

While the Act ushered in a new era, it was not without any weaknesses. First, an unduly high price was paid by way of compensation to the erstwhile intermediaries, in addition to a number of other benefits like debt settlement and interim compensation. Further, in the name of *khudkasht* of land under self-cultivation, many of the old landlords were able to retain extensive areas under their control leading to dispossession and eviction of a large number of tenants.

Thus, while the tenurial patterns changed, they did not lead to any effective improvement in the position of the poorer (evicted) tenants, the sharecroppers and the agricultural labourers. The Act had not clearly envisaged any radical redistribution of land. Many of the old relationships between the owners of the land and those with tenancy rights were retained.

By 1954 almost every state had passed Land Reform legislation on priority basis for the abolition of intermediary tenures on payment of compensation, as a result of which 20 million tenants were brought into direct contact with the state. Moreover, it is important to note that what is supposed to have been abolished is only the topmost layer of a hierarchy of intermediaries and not intermediaries as a class.

2.6 TENANCY REFORMS

Leasing of land on a large scale in areas where settlement was made directly with the *ryots* and sub-leasing where intermediaries existed, were common practices in the past. Rents were high and there was very little security of tenure. Three important guidelines were laid down by the Plans, which became the major components of tenancy reform. They are:

i) rent should not exceed one-fifth to one-fourth of the gross produce;

ii) all tenancies should be declared non-resumable and permanent (i.e. security of tenure was ensured) except in certain specified circumstances; and

iii) in respect of non-resumable land, the landlord-tenant relationship should be terminated by conferring ownership rights on tenants.

In several states, however, the existing legislation in relation to tenancy reforms falls far short of the accepted policy because of the lack of sharpness in the definition of 'personal cultivation', which did not include family labour as a compulsory element. Large-scale

eviction of tenants, aided by the device of 'voluntary surrenders', was carried out under this pretext.

Many of the 'voluntary surrenders' were open to doubt as bonafide transactions. The Second Five Year Plan had recognised this and recommended that:

i) all so called "voluntary surrenders" should be checked and registered by the revenue authorities before they could be accepted as valid;

ii) landlords should not be enabled to re-possess, even by the tenant's voluntary surrender, areas greater than they had a legal right to resume; and

iii) those legal rights to resume should be restricted by sharply redefining the concept of 'personal cultivation'.

It was felt necessary to strictly enforce the provision of 'personal cultivation' and restrict future transfers of agricultural land to persons residing in the same village or in an adjacent village.

Let us now look at the different aspects of tenancy reform in a somewhat greater detail.

a) **Security of Tenure**

The most important and probably the most significant provision for regulating tenancy has been the measure of security to the tenants. Such security provides incentive for carrying out improvements in land, increase its productivity and enable the tenant to retain an equitable share of the produce. The following steps provide for security of tenure:

- prescription of a minimum period of tenancy;
- restrictions on ejectment;
- reinstatement of wrongly ejected tenants;
- tenants' right for compensation for improvement;
- restrictions on resumption for personal cultivation;
- regulation of voluntary surrenders;
- tenants' right to acquire ownership; and
- tenant's secondary rights to homestead land, grazing land, trees, etc.

The land tenure system (minimum period of tenancy prescribed) in the country varied from state to state. At the beginning, it ranged from 5 to 10 years with a provision for automatic renewal. Such a provision would have been useful if leasing was always on record. In rural areas, however, oral agreements with legally unacceptable terms continue to be a common practice even today.

Restrictions on ejectment of tenants were incorporated in the laws from a very early date in the history of legislation for land reform. It has often been done by prescribing the grounds on which a tenant can be ejected. These include:

- failure to pay rent;
- misuse or non-agricultural use of land;
- subletting or sub-dividing the holding below a prescribed limit; and
- leaving the land uncultivated without adequate reasons (this is applicable in some states).

By the Third Plan (1961-66), legislation providing security of tenure had been enacted in 11 states and in all Union Territories. Insecurity of tenure existed under the garb of

voluntary transfer. The gap between legislation and implementation continued. Legislation for security of tenure had three essential aims. They were:

- ejectments do not take place except in accordance with the provisions of the law;
- land may be resumed by an owner if at all, for personal cultivation only; and
- in the event of resumption, the tenant is assured of a prescribed minimum area.

The Fourth Plan (1969-74), noted with concern that under the system of informal tenancy and sharecropping neither the landlord nor the tenant was investing in the improvement of land productivity, thus impeding the modernisation of agriculture. In order to bring a sense of security among tenants, it suggested measures for declaring tenancies non-resumable and permanent, regulating voluntary surrenders, implementing legislation related to security of tenure, penalizing wrongful evictions, and securing tenure in the cases of homestead lands. These measures were pursued in the subsequent plans.

Ejection of the tenants took place on a massive scale through "voluntary surrenders" or by resuming the tenanted land by the landowner for "personal cultivation". This right of the landowner was widely used to dispossess tenants in many parts of the country. Therefore, during the Second Plan, all the states framed provisions for resumption broadly on three different patterns:

- Full security was given to all tenants giving the owners the right of personal cultivation.
- Owners were given the right to resume a limited area (not more than a family holding) subject to the condition that a minimum area was left with the tenant.
- Limit was fixed on the extent of land, which a land-owner may resume, but the tenant was not entitled to retain the minimum area for cultivation in all cases.

The second type of legislation has by and large been accepted by the major states (Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Himachal Pradesh, Assam and Punjab).

b) **Regulation of Rent**

The issue of rent in our context implies extractions made by the land owning section from the non-owner cultivators, be it tenants or share-croppers. This has been an inherent aspect of the tenurial arrangements. Rates of rent happened to be the basic issue that caused the first legislative intervention in the country, incidentally in Bengal.

Regulation of rent, in a situation where the ownership of land is in the hands of a few, is not an easy job. It is necessary to have very effective, impartial and well educated administrative machinery reaching down to the village with a foolproof system of recording of contracts and observance of such contracts with some sense of equity and freedom from exploitation. The rights and obligations should be known and respected by both the parties with a minimum of administrative interference. These are exactly the factors missing in the rural scene. Ownership in the hands of 'a few' powerful persons, and an illiterate and socially and economically deprived group of people depending on them for survival, makes the observance of rules impossible.

The general policy for regulating rents had been to keep the rent changeable with the paying capacity of the cultivator. In the country as a whole, the rate of rent varied between 34 to 75 per cent of the produce. To regularise it, the First FYP stated that thr maximum rent should be fixed at one-fourth or one-fifth of the total produce. Legislations fixing the maximum limit of rent, however, have been violated quite often. For instance, while in Bihar, the maximum limit is 25 per cent of the gross produce, share-croppers are usually required to pay 50 per cent. Customary rates of rent continued to prevail for a long time and may still hold true for some parts of rural India. It is only in areas where there is an organised force of share-croppers, tenants, etc. that certain norms are established, although these may still not tally with the all India guidelines. Being ignorant

of the rights granted by legislation, the tenants do suffer at times. Further, where there is pressure on land and the social and economic position of the tenants is weak, it becomes difficult for them to seek the protection of law.

There was a move to shift from rents paid in kind to rents in cash. The Second Plan suggested that commutation of rents in kind into cash payments might be facilitated if, with due regard to variation in each district, rents could be declared as multiples of the prevailing land revenue assessment. Moreover, operationalising the legislation is not an easy task as long as the concentration of land holdings, and political and social power continues to be in the same hands that determine the extent to which land reform measures can be allowed. It is this concentration of power that needs to be altered.

c) **Conferment of Ownership Rights**

The policy of land to the tiller was expounded as early as 1948 by the Congress Agrarian Reforms Committee through provisions like:

- rights of pre-emption or first option to purchase the land if the land owner wanted to sell it;
- right of voluntary purchase when the tenant can, at any time, make an offer to purchase the tenanted land according to the procedure laid down;
- conferment of the ownership right of the tenancy land on the tenant from a specified date by a notification, according to the provisions made in the law.

The ultimate objective of tenancy reform is to confer ownership rights on tenants and share-croppers who are tilling the soil, so that the absentee landlordism is completely eliminated. The failure to ensure full security for the tenants has often been attributed partly to the implementing machinery and partly to the existing conditions of production in Indian agriculture. The following are the major factors that contribute to this situation:

- legal flaws or deficiencies in the Act,
- absence of proper land records,
- weak administrative machinery, and
- interlocking of (land) lease, labour and credit markets in which the poor tenants and the landless are the natural losers.

In a number of states, governments followed three ways for bringing tenants of non-resumable lands into direct relationship with the government:

- by declaring tenants owners and requiring them to pay compensation to earlier owners in suitable installments;
- through the acquisition of the rights of ownership by the government on payment of compensation to the earlier owners and transfer of ownership to tenants, compensation being recovered from them in suitable installments; and
- through the acquisition of the landlords' rights by government and bringing tenants into a direct relationship with the state, option being given to tenants to continue as such on payment of fair rent to the government or to acquire full ownership on payment of the prescribed compensation.

In the course of the Third Plan (1961-66), steps were to be taken to complete the programme for conferring rights of ownership on the tenants of non-resumable lands. As a result, about 11.2 million tenants acquired ownership rights over 15.3 million hectares of land.

Box 3

Distribution of lands among cultivators, 1995-96

Category of holdings in *hectares*	No. of operational holdings ('000 number)	Area operated ('000 hectares)	Average size of operational holdings (hectare)
Marginal (< 1)	71179 (61.6)	28121 (17.2)	0.40
Small (1- 2)	21643 (18.7)	30722 (18.8)	1.42
Semi-medium (2-4)	14261 (12.3)	38953 (23.8)	2.73
Medium (4- 10)	7092 (6.1)	41398 (25.3)	5.84
Large (10 & over)	1404 (1.2)	24163 (14.8)	17.21
All Holdings	115580 (100.0)	163357 (100.0)	1.41

Figures within parentheses indicate the percentage of respective column totals.

Source: Agricultural Statistics at a Glance, 2003.

Wherever ownership rights were not conferred on tenants, provisions of security of tenure were made. A vast disparity in the land distribution among cultivators, however, continues (see Box 3 above). According to the 2001 census, there are 127.6 million cultivators and 107.5 million landless agricultural labourers looking for help.

Some problems continue in the country despite the legal protection provided. Studies have shown that where tenancy has been abolished, concealed tenancy is being carried out under the guise of personal cultivation. In the areas, which have been the greatest beneficiaries of Green Revolution strategy, it is being observed that reverse tenancy is on the rise, as small landholdings are not necessarily compatible with developed technology. Small owners are thus being reduced to the status of agricultural labourers in an increasing measure.

Check Your Progress IV

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) What are the major components of tenancy reform?

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2) List five measures that are supposed to provide security of tenure.

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2.7 CEILING ON LAND HOLDINGS

In January, 1959, at the Nagpur Conference of the Indian National Congress, it was resolved that agrarian legislation to cover restrictions on the size of land holdings must be implemented in all states by the end of 1959. The idea was to reduce the extent of inequality in the ownership of land. It was realized that social inequalities and exploitation cannot be eliminated unless ceilings are imposed and the surplus lands are distributed among the landless and marginal workers. The policy on ceiling, however, remained unclear. Finally, it was introduced in two phases:

a) **Phase 1: Pre-revised ceiling laws (1960-72)**

The question of whether the family or the individual should be the unit for the application of ceiling laws was debated in the Second Plan. The important issue was the treatment of transfers of land on the part of the landowners subject to ceilings. Since the enactment of the ceiling laws, transfers of land have tended to defeat the aims of the legislation for ceiling. Whether a transfer should be disregarded and from which date became an issue in every state.

Transfers were taking place among the family members. This was advantageous to the landed section where the unit of application was the individual. It was suggested that the ceiling should apply invariably to the aggregate held by a family rather than to individuals. Keeping in view the fact that ceilings had already been applied in several states to individual holdings and to aggregate area held by a family in the other states, a way had to be worked out to balance the disparity and discrepancies.

By the time of the Fourth Plan (1969-74), it was realised that due to ineffective implementation of the existing legislation, only about 964,800 hectares had been declared surplus, out of which about 640,000 hectares was taken possession of by the State Governments. The delay in taking possession of the entire land was due to hurdles inherent in the policy framework. Compensation was being given to those who owned land above the ceiling. Thus, in states like Andhra Pradesh, the government decided to take possession of lands only when funds were available for paying compensation. In West Bengal and Gujarat, for example, work was held up due to litigation resorted to by substantial landholders.

There were also administrative and legislative hurdles and the problems arising from the inferior quality of land surrendered by the landholders. These issues came up before the Chief Ministers conference held in November 1969, when it was decided to review the legislative provisions pertaining to the level of ceilings, transfers and exemptions in the light of contemporary technological developments (during Green Revolution) and social requirements. It was also considered necessary to quicken the pace of implementing ceiling laws and the distribution of surplus land to the landless agricultural workers.

b) **Phase II: Revised ceiling laws after the National Guidelines (1972)**

Following the Chief Ministers' Conference, it was found that the acreage mobilised by land reforms was much smaller than expected. The ineffectiveness of the ceiling laws, the exigencies of agricultural production and the agrarian unrest in the form of land grab movement in the country led to a review of the ceiling legislation. ***The Central Land Reforms Committee was set up in 1971*** to study the problem, which ultimately laid down the national guidelines for future legislation on land ceilings.

The main features of the policy were:

i) For irrigated land, the basic ceiling should range from 10 to 18 acres (4 to 7.2 hectares) of irrigated land with two crops for a family of five persons, including husband, wife and minor children. This might vary from state to state or state and in regions according to the fertility of soil and other factors;

ii) For other land, water, productivity, soil, crops, etc. should be considered, but the upper limit should be 54 acres (21.9 hectares) for a family of five;

iii) All exemptions for modern, mechanised, etc. farms should be abolished; and

iv) Exemptions for plantations (tea, coffee, rubber, etc.) should be considered in the states and discussed again ***with the Chief Ministers to formulate a more uniform national policy.***

To consider these recommendations, the Chief Ministers' Conference was held in July 1972, which approved the national guidelines. The states enacted legislation or amended the then existing Act suitably, incorporating the suggestions contained in the guidelines (see Box 4). Consequently, a large degree of uniformity was attained. Most of the states accepted January 24, 1971 as the recommended date for giving retrospective effect to the law in the National Guidelines.

Box 4

Ceilings on Land Holdings (in hectares)

State	Irrigated land with two crops	Irrigated Land with one crop	Dry land
Ceiling suggested in the National Guidelines, 1972	4.05 to 7.28	10.93	21.85
Andhra Pradesh	4.05 to 7.28	6.07 to 10.93	14.16 to 21.85
Assam	6.74	6.74	6.74
Bihar	6.07 to 7.28	10.12	12.14 to 18.21
Gujarat	4.05 to 7.29	6.07 to 10.93	8.09 to 21.85
Haryana	7.25	10.90	21.80
Himachal Pradesh	4.05	6.07	12.14 to 28.33
Jammu & Kashmir	3.6 to 5.06	-	5.95 to 9.20
Karnataka	4.05 to 8.10	10.12 to 12.14	21.85
Kerala	4.86 to 6.07	4.86 to 6.07	4.86 to 6.07
Madhya Pradesh	7.28	10.93	21.85
Maharashtra	7.28	10.93	21.85
Manipur	5.00	5.00	6.00
Orissa	4.05	6.07	12.14 to 18.21
Punjab	7.00	11.00	20.50
Rajasthan	7.28	10.93	21.85 to 70.82
Sikkim	5.06	-	20.23
Tamil Nadu	4.86	12.14	24.28
Tripura	4.00	4.00	12.00
Uttar Pradesh	7.30	10.95	18.25
West Bengal	5.00	5.00	7.00

Source: Agricultural Statistics at a Glance, 2003.

Most of the *ceiling laws* have been included in the Ninth Schedule of the Constitution of India. This provides immunity against any challenge in courts of law on the ground of alleged infringement of the fundamental rights guaranteed in the Constitution. Though exemptions were reduced in the revised ceiling laws, certain categories of land continue to be exempted from ceiling. This left ample scope for evasion of laws through the device of shifting lands to the exempted categories. Some of those categories were:

- Land held by the State or the Central Government, any institution (agricultural college/ university) conducting research and imparting education, etc.

- Land held by industrial/commercial undertakings where such lands are necessary.
- Plantations of coffee, cocoa, tea including the land used for any purpose ancillary thitherto.
- Land held by religious and charitable institutions of a public nature.
- Lands owned by sugarcane factories solely for research and seed farming.
- Plantations of cardamom, pepper and rubber in Karnataka and Kerala.

Review of the implementation also pointed to the fact that there was ***little linkage*** between this Central programme and the others. Jurisdiction of civil courts was barred in respect of land reform cases because of their inclusion in the Ninth Schedule of the Constitution in 1990. Now we hope to look forward to a large cultivable area coming under direct possession of the Government.

At the end of the Eighth Plan (1992-97), 2.30 million hectares were declared as ceiling surplus and out of that 2.09 million hectares were distributed among 5.5 million beneficiaries. ***By the end of the Ninth Plan, the position was virtually the same. There has been no progress in the detection of concealed land and its distribution to the landless rural poor.***

Since, the assignees of ceiling surplus land are also the targets of other poverty alleviation programmes like IRDP, NREP, RLEGP, etc., it was decided to follow an integrated approach by pooling together resources available under different programmes to undertake activities like rural housing, drainage, link roads, social and farm forestry, land development, minor irrigation schemes in compact areas, etc. in the subsequent plans.

2.8 CONSOLIDATION OF HOLDINGS

Sub-division and fragmentation of holdings chiefly arise from the customary practice of partitioning of land among the heirs. As a result, in successive generations, holdings not only become smaller but also get dispersed in fragments. The growing population only increases the pace of this process. On the other hand, consolidation of fragmented holdings helps in improving the agricultural production as well as in providing common services to small holders.

Consolidation of holdings was attempted in isolated experiments in different parts of the country, mainly under the aegis of the ***cooperative movement***. The need for consolidation of holdings was realised way back in 1917 and therefore, All India Board of Agriculture drew the attention of the local governments to draw up remedial measures in consultation with the Registrars of ***Cooperatives Societies***. It was only in 1928, however, that the case for consolidation was finally established with the recommendations of the Royal Commission on Agriculture.

The process of the evolution of legislation on consolidation of holdings was a slow one and had two distinct phases. The first phase that started with the Baroda Act in 1920 did not impose any compultions. The implementation/application was purely on voluntary basis. It was with the Central Provinces Consolidation of Holdings Act, 1928 that a graduated degree of compulsion for consolidation was introduced. The second phase is marked by the Bombay Prevention of Fragmentation and Consolidation of Holdings Act, 1947, which provided for compulsion to be exercised by the state for enforcing consolidation.

The Tenth Plan (2002-2007), reviewed the situation and stated that the progress on the consolidation of land holdings has been slow. Most states have stopped consolidation proceedings. ***As on 31 March 2003, the total area consolidated was 66.10 million hectares, against a total cultivable area of 142 million hectares.***

Several factors inhibited the progress of consolidation. These included:

- fear of displacement among tenants and share-croppers;
- advantage of having land in fragmented parcels in the event of floods and other natural calamities as the risks get distributed;
- the apprehension that the bigger farmers would get a better deal in terms of being the major beneficiaries of the better quality land.

The benefits of consolidation in the development process, however, cannot be underestimated. Consolidation of holdings would provide an opportunity to recast and re-build the record of rights needed for orderly flow of credit, apart from other benefits. An integrated approach to soil and water management would also be facilitated by consolidation contributing to better production and productivity or even of more rational use of irrigation potential already created.

2.9 COMPILATION AND UPDATING OF LAND RECORDS

A land record management system is a pre-condition for an effective land reform programme. In 1987-88, a Centrally-sponsored scheme for *Strengthening of* ***Revenue Administration and Updating of Land Records (SRA&ULR)*** was introduced in Orissa and Bihar. *The scheme* was extended to other states in 1989-90. *It* provides funds for survey and re-settlement operations, training for revenue and settlement staff, facilities for modernisation of survey and settlement operations and strengthening of revenue machinery at the village level.

The information available in the record of rights is not of a uniform pattern. In every state, the record of rights is expected to contain information about each plot or survey number, its area, name of the owner, the class of land, and therefore also the land revenue payable. In the *zamindari* areas, information about the lands in the possession of tenants of zamindars also could be available.

In the unit on Agrarian Movements, we have seen how non-availability of the proper record of rights was a major hurdle in the programme 'Operation Barga'. Even the Tenth Plan reiterated that the lack of a comprehensive land rights database was one of the main reasons for the concealment of land, which has hampered the land reforms programme. Therefore, SRA&ULR schemes have been emphasised in the Tenth Plan not only to detect concealment of land but also to reduce scope for litigation in rural areas.

The report of the Committee on 'Revitalisation of Land Revenue Administration' brought out by the Ministry of Rural Development (MoRD) in 1995 could be termed as the first systematic attempt at bringing about a semblance of uniformity into the chaotic affairs of land records existing in different states. The Committee made some revolutionary recommendations such as:

i) transferring Land Administration to Panchayati Raj Institutions,

ii) renaming the revenue department as Land Administration Department, and

iii) merging the offices of the Sub-Registrar and Tahsildar for better maintenance of land records.

The Ministry of Rural Development (MoRD) brought out ***a Vision Document for Computerisation of Land Records in 1999 to bring uniformity in land administration***. This document, for the first time, spoke about the standardisation of a Land Information System for and the identification of 'core data fields' across the country, which would be useful for planning purposes, implementation of uniform modern

procedures to conduct cadastral surveys and generate land records, conversion of Land Records Administration into a financially self-sustaining activity, etc. Formulating and implementing a national policy on land records in the new millennium is now due.

By now, we hope you fully appreciate the various facets of the policy pertaining to Land Reforms in India and their genesis and progress. In the followign section, we will have a glimpse of the new developments directed to achieve the long-term objective of achieving social equity.

Check Your Progress V

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Mention three ways in which ownership rights can be conferred on the tiller.

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2) What benefits accrue from the consolidation of holdings and what are the apprehensions of farmers in this regard?

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2.10 NEW DEVELOPMENTS: CO-OPERATIVE TO CONTRACT FARMING

The changes in the agrarian economy over the past three decades warrant a fresh look at tenancy laws. We have seen earlier (see Box 3) that more than 80 per cent of the rural households have less than two hectares of land. Therefore, further reduction in land ceilings and acquisition of land for distribution is not a credible policy option any more. Further, market-led development would tend to promote reverse tenancy. States are at different stages of agricultural transformation. Patterns of semi-feudal agriculture in some states co-exist with corporate/commercial farming practices in others, where middle/large farmers lease land from small and marginal farmers.

On the other hand, the ultimate objective of the land reforms was to establish co-operative farms in India. The Agrarian Reforms Committee (1949) suggested, ***"Without various co-operative moulds, the efficiency of agriculture cannot be substantially increased".*** The main features of such co-operative farming were supposed to be as follows:

i) farmers join the system voluntarily and not through compulsion;

ii) they retain their land, in the sense, they never surrender their right to land;

iii) they pool their resources like land, livestock, etc.;

iv) farm is managed as one unit, elected by all members and;

v) everyone gets a share in the produce according to the land contributed and labour performed.

Co-operative farming movement in India, however, failed to achieve its much repeated objective of raising farm productivity. The Fourth Plan (1969-74) reviewed the progress and stated that although co-operative farming had been officially accepted, no substantial progress was made in actual practice. In the subsequent Plans, therefore, no special effort was made to organise any co-operative farms.

Now, *contract farming arrangements* are coming up as an alternative device for achieving the same twin objectives—raising farm productivity and increasing the earnings of small farmers. It should be helpful in providing the necessary forward and backward linkages to agriculture as well as to agro-processing industries. It provides for a contractual arrangement between the industry and the raw material producing farmers. The industry provides a forward linkage to the farmers in terms of purchasing their produce and backward linkage in the form of assured supply of all critical inputs. Contract farming helps in raising the yields and income of the farmers irrespective of farm sizes (see Box 5). ***Contract Farming is a halfway house between independent farm production and corporate/captive farming***. For small farmers, it is advisable to operate as a group in order to sucessfully manage a contract with any user industry. It requires reduced capital ivestment, and at the same time the farmers/growers are protected from risks of price fluctuations. They are also provided with technical assistance from agro-processing industries.

Box 5

Contract Farming: Case Study

In Punjab, Hindustan Lever Limited (HLT) has contractual arrangements with farmers for tomato cultivation. The company provides hybrid seed to the farmers on credit basis and takes care of other capital and technology needs of the farmers. Since the price of output is pre-decided under the contract, farmers don't have the risk of price fluctuations. Against this, the company has sufficient and regular supply of raw materials of desired quality. As a result, net income of farmers under contract increased up to Rs. 20,000 per acre in Amritsar district as against that of Rs. 10,200 for non-contract farmers. However, sometimes violation of contracts was reported from both sides. Obviously, creating a conducive environment and legalizing contract farming by the government will protect the interests of both the parties and will go a long way in achieving the social objective of land reforms.

Source: T. Haque (2003)

2.11 LAND REFORMS: AN ASSESSMENT

The land reform measures to a large extent succeeded in breaking down the stranglehold of the traditional *zamindars* and the absentee landlords. The occupant of the land today is directly responsible to the state for the payment of land revenue and other dues. Security of tenure and distribution of land has resulted in the occupants of the land taking interest in its development and increasing its productivity. Regulation of rent has been adopted in all states except the few mentioned earlier. Protected tenancy status

has been strengthened by making provisions in the law regarding termination of tenancy, eviction of tenants, surrender by tenants and purchase of tenanted land by the tenants.

Shortcomings in the past

i) Since land reforms constitute a state subject, the Central Government's role is restricted to formulating general directions on this issue and persuading the state governments to take them up for implementation. ***The political will*** on the part of the state governments to enforce the legislation is weak, and the bureaucracy rather indifferent.

ii) ***Legal definitions*** of the terms have left room for different kinds of interpretation affecting the process of realising the goals of the programmes.

iii) ***Distribution of land*** continues to be ***skewed***. Agricultural workers, particularly Scheduled Castes and Scheduled Tribes, who constitute the bulk of the agricultural labour force, have not gaind much from the abolition of *zamindari*.

iv) There remains a ***wide gap between the land distributed and its actual occupation by*** the beneficiaries, which is obstructed by physical prevention and litigation (the beneficiaries like landless labourers and poor peasants can hardly afford it).

v) ***Identification of benami land*** (land held under a different name to circumvent the law) is not possible through the efforts of the administration alone. For this, support of the local organizations of the beneficiaries or the organizations representing the interest of the beneficiaries of land distribution is necessary.

Local civil organisations have to come up with innovative ideas to rectify inequities of land ownership in the rural areas, like in case of the Pani Panchayat in Ralegaon Siddhi in Maharashtra. Under this, every member of the village, irrespective of the size of his land holding, has a proprietary right over the harvested water for irrigation. As the water available to each member is limited, members with large land holdings have been persuaded to lease their land to small and marginal farmers and agricultural labourers who have water rights but no land. The arrangement has allowed the landless access to land. The large landholders have also benefited as they receive rent for land, which would otherwise have remained fallow for lack of irrigation.

Box 6

Some Success Stories

- Intermediary tenures have been abolished. Over 20 million cultivators have been brought into direct contact with the state to gain access to an estimated 6.07 million hectares of land vested in the state.
- Legislative provisions have been made providing ownership rights on tenants or allowing cultivating tenants to acquire ownership rights on payment of a reasonable compensation to the landlords.An estimated 12.42 million cultivators have been conferred ownership rights on 6.32 million hectares of land.
- Under various ceiling laws, till September 1998, 3.04 million hectares of land has been declared surplus, 2.15 million hectares have been distributed to 5.54 million beneficiaries mostly belonging to weaker sections. In addition, about 0.88 million hectares of Bhoodan land and 5.97 million hectares of wasteland have also been distributed.
- Legislative provisions have been made for consolidating holdings and 64.08 million hectares of land has been consolidated in the country so far.
- For preparation, maintenance and updating of land records, the Central Government has allocated Rs.1627.36 million to the States/UTs for purchasing equipment, strengthening of training infrastructure, etc. under the Centrally Sponsored Scheme for Strengthening of Revenue Administration and Updating of Land Records (SRA & ULR).

Newer and holistic approach

Land reform has now come in the mainstream of rural development. It is no longer a programme of concern primarily to the revenue department. However, a lot more needs to be done in practice to make the policy statements and the intentions a reality. Several steps need immediate attention:

- Proper identification of land above *ceiling* and identification of *benami* transfers.
- Taking over possession of wasteland after going through the relevant *quasi*-judicial and other administrative processes.
- Provision for the consumption and the production credit to enable the new allottee to start cultivation without getting into the debt trap of the former patron with the eventual possibility of alienating the land.
- Initiation of the legal process to establish tenancy rights and to register names in the record of rights.
- Legal and physical support to tenants against their eviction from the homestead, as most of the tenants in a number of areas live on landowners' land as mere *permission possessors*.
- Prevention of land alienation due to indebtedness, displacement on account of large scale development projects (industrial, hydro-electric, etc.) and capitalist farming.
- Promotion of institutional arrangements for contract farming while protecting ownership rights of and providing better returns to the small farmers.

The process of implementation will require a fair degree of coordination among the implementing machinery and the organisations of rural workers. The social imbalances can be corrected only if powerful counter-pressures are built up to curb the control of the rural rich on the resources. This task opens up a qualitatively new perspective of economic and political transformation. ***Land Reforms are both the causes as well as the effects of a thorough-going change in the power balance***. A new beginning can be made by giving a decisive role to the rural-poor in formulating land reform schemes and their implementation at every stage in which they have a substantial representation.

Check Your Progress VI

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Enumerate five important problem areas in relation to land reforms.

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2.12 LET US SUM UP

We have seen that land reforms, leading to structural equity in the distribution of land, are an essential prerequisite for economic development through agricultural

transformation. In addition, the efficiency of land use and land management, and protection of the land rights of the tribals and women have assumed great significance in the context of the changes that are taking place in rural India.

We have reviewed the progress in various components of land reforms such as abolition of intermediary tenures, tenancy reforms, ceiling on land holdings, distribution of surplus land, consolidation of holdings, and compilation and updating of land records.

We have observed how land reforms are being integrated into the overall poverty alleviation strategy to maximise its impact and the support mechanisms that are proposed for its speedy implementation. We have also indicated the steps that need to be taken to consolidate the gains from land reforms.

Finally, we have worked through the recent changes occurring across the states under the new economic regimes, where lowering of the land ceiling does not appear to be the ultimate solution. Under open economies, every produce has to come to the market with the lowest possible price, which needs *inter alia* economies of scale. All this needs different strategies, other than the mere distribution of small plots of land to the poor, for providing gainful employment round the year.

2.13 KEY WORDS

Benami : Recorded in the name of another person, while the original owner retains the actual possession.

Cadastral Survey : It *means* survey to collect information for maintaining official register showing details of ownership, boundaries, and value of real property in a district, made for taxation purposes, etc.

Contract Farming : An agreement between farmers and the processing and/ or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices.

Core Data Field : It *means* actual information showing the detail of the field at household level.

Credit Market : The flow of advance finances in kind or cash between agents with surplus finances to those with deficit finances.

Khudkasht : *Kasht* means to cultivate and *Khudkasht* is self-cultivation. This could mean applying one's labour or supervision.

Labour Market : Market where labour is hired out for a periodic wage rate.

Land Market : Market for the exchange of land and its valuation.

Rentier Interest : It *means* during pre-independence time, most of the revenue collection rules were framed in such a way that they favoured only to the revenue collector and in no way helped the actual cultivators.

Reverse Tenancy : It *means* small farmers sometimes not getting desired return from the land or due to debt burden sell/mortgage their land to the large farmers and thus former are reduced to the status of agricultural labourers. This is just reverse trend of usual tenancy pattern.

Share-cropper : Those who acquire the usufruct right of the land from the owner on condition that in lieu they would pay a share of the produce to the owner.

Tenants : Those who enjoy the usufruct right over the land owned by others in lieu of a fixed amount of rent in cash or in kind to be paid yearly or seasonally. Tenants are of two types: occupancy tenants and tenants-at-will. The usufruct rights of the former are hereditary, while the latter do not enjoy the same rights and their contracts are renewed periodically at the owner's will.

Under-raiyats : *Raiyat* (cultivators) were those who were directly under the state or the *Zamindar*. Under-*raiyats* were those to whom *raiyats* parcelled out land on payment, i.e. at a cost.

Usufruct Right : *means* the right to use and derive profit from a piece of property belonging to another, provided the property itself remains undiminished and uninjured in any way.

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2.15 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Check Your Progress I

1)
- to ensure social equity as ceiling surplus land is distributed among the landless poor→ Social objective;
- to increase the agricultural production and productivity→ Economic objective;
- to avoid social unrest caused by high levels of inequality in the society→ Political objective.

2)
- abolition of intermediary tenures;
- tenancy reforms; .
- ceiling on land holdings and distribution of surplus land;
- consolidation of land holdings;
- compilation and updating of land records.

Check Your Progress II

1)
- Permanent settlement
- Malguzari settlement
- Jagirdari system
- Raiyatwari system
- Mahalwari system

2)
- Concentration of land ownership.
- Growth of extensive rentier interest and sub-letting due to absentee land-owners.
- Increase in the numbers of parasitic intermediary classes.
- Unfair returns to the actual tiller due to high rents/share of agricultural produce to be given to the owner of the land.
- Insecurity of tenure characterised by a high degree of arbitrariness/unfairness and unwritten informal agreements which could be twisted to suit the owners.
- Powerlessness of the tenant and his dependence on the owner through a complex network of social and economic obligations resulting in his exploitation by the landowner.

Check Your Progress III

1) The main recommendations of Kumarappa Committee include elimination of all intermediaries; prohibiting subletting land; providing full occupancy rights; restrictions on resumption of land by the land owner; safeguarding the position of tenant; fixation of reasonable rent and setting up of a separate Central Land Commission.

2) The main issues highlighted in the Ninth Plan include redistribution of ceiling surplus; enforcement of ceiling laws; recording of the rights of tenants/share-croppers; leasing of land to be made permissible; access to wasteland and common property resources by the poor and ensuring land rights of women.

Check Your Progress IV

1)
- Regulation of rent.
- Security of tenure.
- Conferment of ownership.

2)
- Restrictions on ejectment.
- Fixation of fair rent.
- Right of tenant to acquire ownership.
- Prescription of a minimum period of tenancy.
- Restriction on resumption of land for personal cultivation.

Check Your Progress V

1)
- Right of pre-emption or the first option to the tiller to purchase the land if the landowners want to sell it.
- Right of voluntary purchase when the tenant can make an offer according to the procedure prescribed.
- Conferment of ownership rights of the tenancy land after a notification.

2)
- Permits efficient working of land through optimum deployment of labour, machinery, etc.
- Integrated approach to soil and water management can be adopted.
- Provision of common services becomes easier.

Check Your Progress VI

1)
- Highly skewed distribution of land.
- Legal loopholes and flaws which prevent actual possession of the land distributed.
- Benami/ concealed land.
- Weak political will and indifferent bureaucracy.
- Slow progress in updating land records on ownership and tenancy.

UNIT 3 GREEN REVOLUTION

Structure

3.0 OBJECTIVES

We hope now you have a reasonably sound understanding of our Agrarian Movements and Land Reforms. After reading this unit, you should be able to:

- explain the peculiar compulsions faced by the Indian planners in the mid-sixties and the reasons why the strategy of the Green Revolution was adopted;
- describe the elements of this strategy and the nature of its spread across the country;
- analyse the impact of this strategy on agricultural growth and the different aspects of rural development;
- outline some problem areas which have come up as a consequence of the Green Revolution;
- identify challenges posed to agricultural development due to globalisation of the economy; and
- indicate the manner in which current challenges are being addressed.

3.1 INTRODUCTION

Indian agricultural development can be looked at from two different perspectives: institutional and technological. The *institutional approach*, mainly typified by land reforms and changing agrarian relations, was the strategy adopted way back in the mid-fifties. This strategy is outlined in unit 2 of this block, which we hope you have already worked through. Land reforms, as an engine of agricultural development, registered limited success. Moreover, it was realized that in the absence of further scope for increasing the area under cultivation, advances in productivity remained the only means of stepping up food-grain production in the country. As a result *technological approach* to agricultural development, popularly known as the "Green Revolution" was adopted in the mid-sixties, which made a decisive impact on agricultural production and productivity. This unit will discuss the background under which this approach was introduced, its spread, impact and some recent problems that have come up for redressal.

3.2 WHAT IS THE GREEN REVOLUTION?

The Green Revolution, which began in the mid 1960s is the name given to the first systematic attempt to increase agricultural production, particularly that of food-grains, in India and some other developing countries by applying new technologies of cultivation. It is based on "biochemical innovations" that include high yielding varieties, chemical fertilizers and pesticides. There are three main components of this approach:

a) An improved technology in the form of new high-yielding varieties (HYVs) of crops:

b) A package of practices which consists of appropriate application of chemical fertilizers, pesticides and irrigation facilities which are necessary for the technology to be effective, and

c) an overall strategy, which includes government policies for the provision and subsidy on inputs, remunerative prices for output and availability of credit.

This has been the broad strategy for agricultural growth followed by India since the mid 1960s.

3.3 NATURE OF THE GREEN REVOLUTION: BACKGROUND AND STRATEGIES

3.3.1 Indian Agriculture in the 1950s

In the 1950s, Indian agriculture was backward in the sense that output per worker and output per unit of land area were low. There were regional variations in agro-climatic conditions, spread of irrigation and varying extent of market penetration in different areas. Nonetheless, most parts of rural India had unequal land ownership patterns in which a major part of cultivated land was controlled by a few large landowners. About one fifth of the rural population had no right to land at all. In some parts of the country, notably the northwestern region, land was generally held by middle-sized peasant farmers who were engaged in direct cultivation involving family labour. Tenancy was widespread and crop-share rents were the major form of rent, especially in the East and the South of the country. Availability of institutional credit was insufficient in rural areas and most cultivators had no option but to go to the local money-lenders for credit. In many parts of rural India, particularly in northern India, inheritance pattern led to continuation of the subdivision of holdings (the average size of holding was well within 2 hectares). These conditions discouraged and prevented investment in agriculture by all classes. The

available varieties of crops were low yielding and cultivation practices primitive. This inhibited the growth of Indian agriculture during the said period.

3.3.2 Agricultural Strategies during the Pre-Green Revolution Period

During the period of the first three Five Year Plans (1951-66), considerable emphasis was given to institutional changes and the development of irrigation for raising agricultural output. It was thought that institutional changes, particularly land reforms, would lead to increasing private investment in cultivation and crop output. Therefore, the main thrust was on legislation regarding agricultural property and social relations in the countryside.

The other main policy thrust of the government with regard to agriculture was on increasing irrigation facilities. Many of the large river valley projects were undertaken during this period and considerable public expenditure was made on tubewells. Although the gross irrigated area went up from 23 million hectares in 1950 to 32 million hectares in 1965, at the end of this period, only 17 per cent of the total cultivated area was irrigated. Futhermore, most of the irrigation projects were concentrated in a few states namely Punjab, Haryana, Uttar Pradesh, Tamil Nadu and Andhra Pradesh. Other states had a much lower proportion of cultivated area under irrigation and most of the Indian agriculture remained heavily dependent on the behaviour of the weather and monsoon.

Apart from this rather slow and uneven growth of irrigation, there was no major technological advancement in the Indian agriculture during the period. The only notable change was a small increase in tractors and power driven pumps for wells, chiefly in the northwestern states. Implements of cultivation, by and large, were primitive (such as wooden rather than iron ploughs) and the use of fertilisers and other 'modern inputs' remained very limited.

Significantly, most of the increases in output were due to the expansion of the cultivated area, resulting partly from a move to cultivate poorer quality land and partly from an increase in multi-cropping made possible by irrigation, which led to an increase in *gross cropped area*. By the mid 1960s, limits of increasing arable land were reached and it was clear that future increases in output would have to result from greater yield of crops rather than the expansion of cultivated area. The thrust towards increasing yields was also necessitated by the fact that:

i) effective land reforms had not taken place and a minority continued to control the major share of cultivable land;

ii) the rent that landlords extracted from the vast mass of tenants and share-croppers was enough to ward off any incentive for using new technology in cultivation and take risks; and

iii) there were limits to the possibility of expanding cultivated area.

The problems of agriculture were highlighted by two consecutive bad monsoons in 1965-66 and 1966-67. There was a dramatic fall in output and several areas (such as Bihar) experienced near famine conditions. By 1960-61, imports accounted for a significant part of domestic food-grain consumption. Cosequent upon the two bad harvests, imports accounted for nearly one-sixth of domestic production of food-grains. By 1966, India was heavily dependent on food aid from USA, and this forced India to accept harsh terms for aid from USA and international multilateral agencies such as the World Bank. Many domestic economic policies were adjusted under this external pressure, including substantial devaluation of rupee in June 1966. The poor agricultural performance had also a negative impact on industry and the overall growth of the economy was affected adversely. This highlighted the urgency of an agricultural strategy, which could release a steady and growing market surplus of food-grains to meet the consumption demand and the demands of industry. The strategy that emerged as a response to this crisis was called the ***Green Revolution***.

3.3.3 The Basic Strategy of the Green Revolution

The new policy towards agriculture, which began in the mid 1960s, was a departure from the earlier approach in a number of ways. The main features are summarised below:

a) The government policy was now oriented towards ***changing the technical conditions of production*** in agriculture rather than introducing land reforms and other changes in the property relations in the countryside. In so far as institutional changes were part of the policy, they were chiefly in the form of spread of state agricultural extension services in order to spread information and provide access to the new technology, establishment of ***Agricultural Price Commission (now known as Commission on Agricultural Costs and Prices, CACP) in 1965***, establishment of Food Corporation of India (FCI) in the same year and efforts towards ensuring the availability of credit from institutional sources.

b) The new ***technology consisted essentially of a package of inputs*** and practices including seeds of high yielding varieties, which responded very favourably to fertilisers, irrigation and pesticides.

c) The emphasis was ***primarily on increasing the output of food-grains*** (especially wheat and rice). Other crops such as sugarcane, oilseeds, pulses, coarse cereals, jute and cotton were not a part of this policy.

d) Given the requirement of assured water supply, the new technology was introduced and employed successfully in areas ***having irrigation facilities***. The strategy was, therefore, selective in approach. The focus was on selecting new areas with assured irrigation water or rainfall for the effective application of this package. This combined with the higher yield of new wheat seeds in India, led to a regional concentration of the new HYV technology in the irrigated wheat-growing region of northwest India. This region, comprising the states of Punjab, Haryana and West Uttar Pradesh, became major success stories of the Green Revolution by early 1970s.

e) The new strategy also focussed on increasing ***marketed surplus of food-grains through price support and procurement operations***. It meant a focus on those groups of farmers who could produce surplus for sale, over and above their own consumption. Essentially, these were the larger and richer farmers, who had both resources and access to market, which encouraged them to adopt the HYV package. Although the package itself was scale neutral (that is, yields did not vary with the size of the holding), there were two major forms of bias in favour of larger farmers: the need for irrigation and access to institutional credit which were more easily obtained by larger farmers. This bias was also to some extent a conscious policy choice by the government—a policy to favour faster growth in output with a view to attaining self-sufficiency in food-grain production. The government hoped that the effects of this growth would "trickle down" to the rest of the rural population, as against a policy in favour of greater equality within a slower growing agriculture. In other words, gains in productivity rather than better distribution of rural incomes was emphasised.

Check Your Progress I

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

Put a tick (√) against the correct answer for each question.

1) During the 1950s, most of the Indian agriculture used techniques that were

a) the same as used in cultivation in the advanced industrial countries.

b) traditional, with very little use of fertilisers or new machinery.

c) recently adopted from countries like Japan.

2) Before the Green Revolution, increase in output was mainly due to:

a) high yield.

b) expansion in cultivated area.

c) expansion of irrigated area.

d) land reforms.

3) Why was the government forced to adopt a new agricultural strategy around the mid 1960s?

(Hint: The preceding section will give you some idea about the kind of problems that Indian policy makers faced during this period.)

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3.3.4 The HYV Package

The crucial element in the HYV package was the seed, which was typically a hybrid designed to give much higher yields in response to the use of fertilisers. Some of the other characteristics of these new varieties were: shorter maturing period which enabled double cropping, shorter (dwarf) stems which could withstand damage caused by winds, positive response to fertilisers and larger leaf surfaces to help the process of photosynthesis.

The basic method of creating these seeds is called ***"hybridisation***". This is a process of crossing two strains of the same crop in order to combine desirable characteristics of both the strains. Thus a crop plant with *good fertiliser response* can be combined with one with *strong and short stalk* . Hybridisation can create varieties of seeds with much higher yields than those of their parent varieties.

The new wheat seeds introduced in India were developed from two Mexican varieties namely *Sonora 64* and *Lerma rojo*. Indian agricultural scientists evolved four new varieties, which were more suited to local conditions: Kalyan Sona, Sonalika, Safed Lerma and Chhoti Lerma. Kalyan Sona became the leading wheat variety, with the highest observed yields (more than 30 quintals per hectare) although it later became prone to diseases.

The HYV seeds for rice were ***based on seeds*** of Taiwanese origin. The main varieties were IR 8 and Jaya, which were released in 1968 with active support from the International Rice Research Institute, the Philippines. But the considerable agro-climatic differences across various rice growing regions made it difficult to adopt uniform varieties across the country. The HYV rice seeds were erratic in their performance in different areas and more vulnerable to pests and diseases when compared to wheat HYV seeds. New hybrid seeds of jowar, bajra and maize were also developed but these were not as effective as HYV wheat seeds.

The HYV seeds were designed to be very responsive to fertiliser intake, and so higher applications of fertiliser were crucial for the success of this technology. This implies that it became necessary to apply greater quantities of chemical fertilisers (nitrate, phosphate and potassium compounds) at the cost of organic matter applications to soil. This has led to inefficiency in the use of fertilisers and at times it becomes uneconomical to apply high doses of fertilisers. Nitrate pollution is already a documented phenomenon as a consequence of the application of high levels of nitrogenous fertilizers.

A similar tendency persists in the ***use of pesticides***. One of the major problems of hybrid varieties of seeds is their greater vulnerability to pests and diseases. There are some traditional means of checking pest incidence through cultural practices (e.g. changing the sowing date, crop rotations, intercropping, etc.). But these are less applicable with HYV seeds than traditional varieties. Though the average use of these pesticides is far below the required levels, lack of judicious use has become a major issue to be reckoned with.

The other crucial element of the HYV ***package is water***. A secure irrigation system is, therefore, an important condition for the success of the strategy. Ever since the Green Revolution started, there has been greater emphasis on groundwater irrigation, through tube-wells in particular. This can be undertaken by farmers privately (unlike canal irrigation which depends upon government policy and investment), and gives farmers greater flexibility and control over the use of water. Typically, such investment in tube-wells is made by large farmers not only because they have the resources for such investment but also because using tube-wells for a minimum spread of about 10-15 acres gives the best results.

With these four major elements, the HYV package has one very important feature: each of the elements must be applied in correct quantity and at the appropriate time to give the best results. Thus using HYV seeds independent of (or with inadequate amounts of) fertilizers, pesticides or irrigation water will not lead to complete realisation of the yield potential of such varieties. Further, any deviation from the recommended time schedule for sowing and the application of other inputs leads to less than the optimum yield.

One of the effects of Green Revolution was a hike in the cost of cultivation. The adoption of HYV seeds meant using higher levels of inputs, thereby increasing the cost of cultivation per hectare. This was, however, more than offset by a significant increase in the yield of crops, as it has been reported that there has been a decline in the real cost of production (Rs/tonne) in the case of rice and wheat over the last two and half decades.

3.3.5 The Spread of the Green Revolution

The green revolution by its very nature was a region and crop focused strategy. It was primarily directed towards regions with favourable ***"initial conditions"*** (such as irrigation facilities). Northwestern parts of the country became the cradle of this Revolution. Wheat emerged as the leading crop in the growth of food production.

Box 1

The Geen Revolution: The People Who Shaped it

India was in the grip of a food crisis in the early 1960s. It was a situation of ship-to-mouth food economy. The country heavily depended on wheat imported from the USA under the Public Law 480. The things looked so bleak that the Paddock brothers, William and Paul, declared India as an incurable case of a nation heading towards severe famine by 1975. It was then that India discovered Norman E. Borlaug and the dwarf varieties of wheat. Borlaug sent in 100 kg of seed of four high yielding varieties (HYVs) of wheat for trials and visited India in March 1963. *Lerma rojo* and *Sonora 64* performed the best. But these were just experiments and there were still several ifs and buts with adopting a policy.

In May 1964, Lal Bahadur Shashtri became the Prime Minister of the country. C. Subramaniam, the Minister for Steel, Mines and Heavy Engineering in Nehru's cabinet was now given agriculture, a sector which was weak and under severe pressure due to food shortages and exploding population. Subramaniam was a devoted Gandhian, a freedom fighter, a member of the constituent assembly and a great visionary. Above all, he was a man of action. He initiated the process of providing institutional support to agriculture. Agricultural Price Commission (APC) and Food Corporation of India FCI) were set up in 1965, which still play a major role in the management of food economy of the country.

Ralph Cummings, an officer from Rockerfellor Foundation met Subramaniam and told him about dwarf HYVs of wheat, but also conveyed that Indian scientists and bureaucracy were going very slow on these. The minister decided to reorganise the Indian Council of Agricultural Research (ICAR) and appointed Dr. B. P. Pal a renowned scientist as its Director-general. Scientists went in for targeted and time-bound research. M.S. Swaminathan led a team of scientists to the job of indigenising the Mexican varieties, especially their colour and baking quality.

In 1965, 250 tonnes of *Sonora* 64 and *Lerma rojo* were imported for seed multiplication, which yielded about 5000 tonnes of seed. Subramaniam was now convinced of the technology and ready to play his final stroke. He wanted to import a very large quantity of these seeds from Mexico to give the effort a single massive boost. His idea was opposed in the parliament as well as at public for a, but he steered through all the criticisms, political hurdles, bureaucratic wrangles and public debates, first with the support of Prime Minister Shastri and later with that of Indira Gandhi. Finally 18,000 tonnes of HYV wheat seeds were imported in 1966 and about a thousand national demonstrations were held all over India over that year and the next. The results were miraculous. The new varieties had more than doubled the existing yields. India harvested 17 million tonnes of wheat in 1967-68, five million tonnes more than the previous best of 12 million tonnes. There was no place to store this sudden burst of grain. Schools in rural Punjab were closed down to store the new harvest in classrooms. A revolution was ushered in.

In 1968, U.S. Agency for International Development (USAID) Administrator William S. Gaud coined the term "Green Revolution" to describe the phenomenal growth in agriculture in Asia and Latin America. But the real unsung heroes of the Green Revolution in India, as Subramaniam himself puts it, were Punjabi farmers. He said "they were the pioneers in this technology and but for them I am convinced we would not have made a success of it. When this new technology was offered to them they took it like fish to water. Everybody vied with one another to demonstrate that he was best able to utilise the new technology." These were the real people behind the Green Revolution.

Source: "The Green revolution: Grain of Truth" by Ashok Gulati, published in India Today, Millenium Series, 2000

Table 3.1 shows the level of adoption of HYVs of different crops over the period. It can be seen during TE 1974-75 when most of the other crops had a very small area under HYV cultivation, more than 50 per cent of HYV adoption had already taken place for wheat. In the begening years, HYVs of rice spread in some areas of Andhra Pradesh and Tamil Nadu. The states such as Assam, Bihar, Madhya Pradesh, West Bengal, etc. which were predominantly rainfed areas picked up with quantum jump in rice yields only in the 1980s. Interestingly, the traditional wheat growing areas of Northwestern region have also become major rice growers in the post-Green Revolution period.

Table 3.1: Area cultivated with High Yielding Varieties for Different Crops

HYV area as per cent of area under respective crops

TE	Paddy	Wheat	Maize	Jowar	Bajra	Total
1968-69	4.93	18.90	5.39	2.69	3.30	5.91
1971-72	15.34	35.65	7.77	3.88	13.40	14.80
1974-75	26.01	57.80	14.51	6.89	21.70	25.79
1977-78	35.43	69.68	19.35	15.83	23.32	33.77
1980-81	42.57	70.10	24.59	19.78	28.37	38.91
1983-84	50.13	76.69	29.89	27.40	42.56	46.87
1986-87	56.92	82.30	34.31	34.72	47.43	53.19
1989-90	60.16	85.12	40.00	41.91	48.66	57.44
1992-93	65.17	87.77	44.95	52.20	53.89	64.33
1995-96	70.92	90.16	55.14	60.53	54.83	70.06
1998-99*	74.82	88.22	57.94	82.84	70.43	75.79

Source: Fertiliser Statistics 2002-2003, Fertiliser Association of India, New Delhi.

TE - Triennium ending, * Provisional

Check Your Progress II

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

Put a tick (√) against the correct answer for each question.

1) The crucial element of the HYV package is:

   a) The seed that responds favourably to other inputs like water and fertilizers.

   b) Machines that can till the soil more deeply.

   c) The spread of canal irrigation which always raises yields of all seeds.

2) The HYV package resulted in:

   a) an increase in the cost of cultivation per hectare.

   b) a decrease in the cost of cultivation per hectare.

   c) no change in the cost of cultivation per hectare.

3) The major achievement of the HYV cultivation has been increase in the production of

   a) non-food-grains. b) pulses and oilseeds.

   b) maize and jowar. d) wheat and rice.

4) Because of the HYV package, farmers have become

   a) more dependent on market for buying inputs.

   b) more dependent on market for selling outputs.

   c) more dependent on market for buying inputs and selling outputs.

5) The Green Revolution

   a) has spread uniformly throughout India.

   b) remained confined to the north-western part of India.

   c) has spread only in the irrigated areas of India.

6) What are the different elements of the strategy of the Green revolution? Write your answer in the space provided below.

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3.4 IMPACT OF THE GREEN REVOLUTION: YIELD, INCOME AND EMPLOYMENT

3.4.1 Patterns of Output, Growth and Instability

The Green Revolution was intended to provide a breakthrough in the yield of crops and food-grain production. A perusal of Table 3.2 reveals that the strategy was successful in achieving this objective. With the introduction of the ***Kalyan Sona*** variety of wheat and ***IR 8 and Jaya varieties*** of rice, technological change in agriculture was established providing a quantum jump in the production of cereals. The growth in food-grain production ranged between 2 to 3 per cent per annum over both the pre-Green Revolution and the post-Green Revolution phases. It may be noted that the growth rates in the Pre-Green Revolution phase were based on a low base level of production, whereas those in the Green Revolution phase were based on a higher base level of production, which was achieved through the technological change. If we divide the Green Revolution (GR) period into two phases, some interesting pictures emerge. It may be seen that in the later phase of the Green Revolution, the growth rate of the production of all the food-grains has decreased. How do we explain this fall in the growth? It may be seen from Table 3.3 that growth in the yield of all the crops has been lower in the later phase of the Green revolution as compared with the earlier phase. With the net decline in cultivated area, any declining trend in yield levels affects growth in production adversely. This is an issue of concern. Concerted efforts on the part of crop breeding programmes and resource management aspects should be made to break the yield barriers. Another important feature has been a very low rate of growth in the yield of pulses and coarse cereals. It may have adverse nutritional implications.

Table 3.2: Pre- and Post-Green Revolution Period Growth Rates of Crop Production in India

(per cent/annum)

Crops	Pre-GR Phase 1949-50 to 1964-65	GR - Phase I 1967-68 to 1984-85	GR - Phase II 1985-86 to 1999-2000
Rice	3.50	2.69	2.54
Wheat	3.98	4.92	3.51
Coarse cereals	2.25	0.94	0.53
Total cereals	3.21	2.85	2.50
Pulses	1.41	0.94	0.40
Total Food-grains	2.82	2.74	2.36
Oilseeds	3.20	2.58	5.24

Source: Agricultural Statistics at a Glance (various issues), Directorate of Economics and Statistics, Ministry of Agriculture, GOI.

Table 3.3: Growth in Yield of Crops in Post-Green Revolution Period

(per cent per annum)

Crops	1967-68 to 1980-81	1980-81 to 1989-90	1990-91 to 1999-2000
Rice	1.46	3.19	1.27
Wheat	2.61	3.10	2.11
Coarse cereals	1.57	1.62	-0.08
Total cereals	1.78	2.90	1.58
Pulses	-0.66	1.61	0.96
Total Foodgrains	1.54	2.74	1.52
Oilseeds	0.77	2.43	1.25
All principal crops	1.43	2.56	1.31

Source: Agricultural Statistics at a Glance (various issues), Directorate of Economics and Statistics, Ministry of Agriculture, GOI.

A major issue, which came up with the advent of the Green Revolution strategy, was the instability in production. It may be seen from Figure 1 that yield instabilities in the case of rice and wheat, which are the major constituents of food-grain production, decreased immediately after the Green Revolution, but later they started increasing. This has been due to higher vulnerability of new varieties to pests and diseases. The initial focus of the crop-breeding programme was on developing high yielding varieties. It was only after the mid 1970s that proneness of new varieties to pests and diseases was realised and thereafter efforts have been made for developing varieties with resistance to insects, pests and diseases. Use of fertilisers also picked up during the later phase of the Green Revolution. These developments have led to relative stabilisation of yields in recent years. Yield instability is still very high in the case of coarse cereals, primarily because they are grown in marginal environments and rainfed conditions.

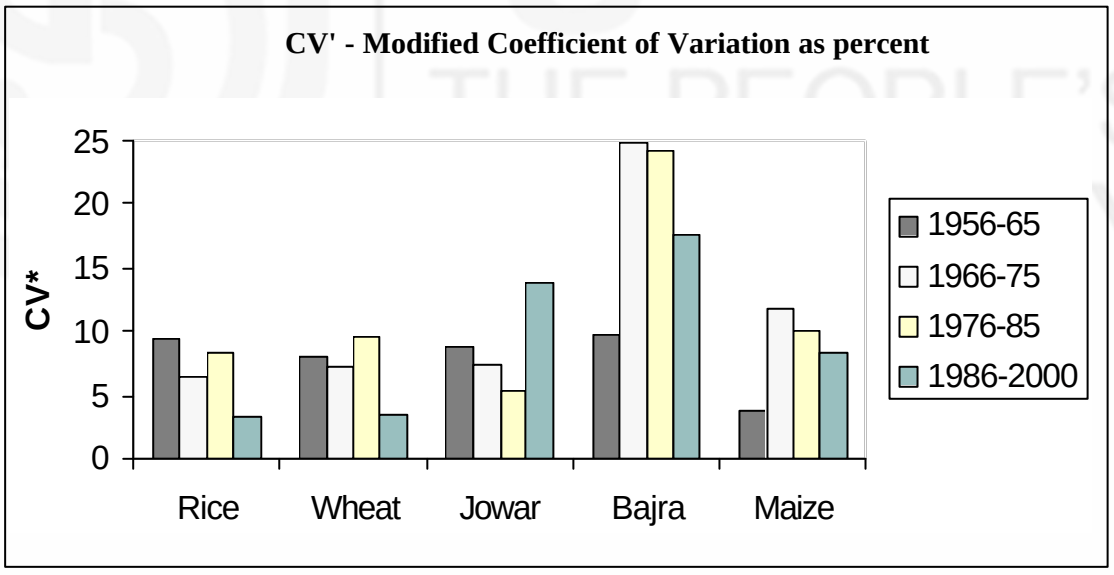

Figure 3.1: Instability in the Yield of Major Cereals

3.4.2 Output Prices, Marketed Surplus and Food-grain Consumption

An important aspect of the *green revolution* was the output pricing policy and announcement of the ***Minimum Support Price (MSP)*** by the government for selected crops with the twin objectives of ensuring remunerative prices to farmers so that production gets encouraged and food becomes available at affordable prices to non-farm population. At the same time, a number of inputs required for HYVs such as fertilisers, electricity and diesel were subsidised so that farmers could be encouraged to

use these inputs. The supply of subsidised industrial inputs to agriculture meant that the relative prices of agricultural produce became costlier when compared to inputs of industry used by the agriculture sector. This approach operated to shift the inter-sectoral terms of trade in favour of agriculture in the period between 1964-65 and 1974-75. During the eighties the *terms of trade* were largely unfavourable for agriculture, but in the 1990s, once again, they became favourable to this sector.

The increased output of larger farmers, especially in the wheat growing regions of the northwest, combined with favourable price policies made the marketed surplus of food-grains grow rapidly. Assured income due to minimum support prices encouraged farmers to go for the rice-wheat system. At present the country is maintaining around 50 million tonnes of food-grains as a buffer stock mainly through procurement primarily in Punjab, Haryana and Western Uttar Pradesh. Studies have shown that the bulk of the marketed surplus comes from the larger and richer farmers, and to some extent from the middle level peasants. Small and marginal farmers are often net buyers of food-grains.

Despite the increase in output and marketed surplus, per capita food-grain availability remains at much the same level (i.e. hovering around 450 gms/day per capita) as it was 35 years ago. Though there has been a rise in the consumption of food-grains, it has been accompanied by a dramatic fall in the availability of pulses, which are the chief sources of protein for a large part of the population. The per cpita availability of pulses was 56.1 gms/day in 1968, which declined to 31.8 gms/day by 2000.

Check Your Progress III

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) In the later phase of the Green Revolution the growth in the yield of all major crops shows

   a) an increasing trend. b) a constant trend.

   c) a decreasing trend.

2) As a result of the Green Revolution in the past thirty-five years:

   a) per capita food-grain availability in India has increased.

   b) per capita food-grain availability in India has remained about the same.

   c) per capita food-grain availability in India has increased.

3) In the post–Green Revolution phase per capita availability of pulses has

   a) declined. b) increased. c) not changed.

4) Instability in yields of major crops in the later phase of the Green Revolution has

   a) increased. b) decreased. c) not changed.

5) The Green Revolution has resulted in

   a) an increase in regional inequalities in food-grain production.

   b) a decrease in such regional inequalities.

   c) no change in such regional inequalities.

6) After the Green Revolution, the rate of growth of marketed surplus of food-grains has

   a) increased. b) decreased. c) remained the same.

3.4.3 Income Distribution, Mechanisation and Employment

The Green Revolution stimulated a large body of empirical literature on how agro-technological change affects the poor farmers. Critics of the Green Revolution argued that owners of large farms were main adopters of the new technologies because of their better access to inputs. Small farmers were either unaffected or harmed, because the Green Revolution resulted in higher input prices, lower product prices and efforts by landlords to increase rents and force tenants off the land. Critics also argue that Green Revolution encouraged unnecessary mechanisation, thereby pushing down rural wages and employment. Although a number of village and household studies conducted soon after the release of the Green Revolution technologies lent some support to early critics, more recent evidence shows mixed outcomes. Small farmers did lag behind large farmers in adopting the HYV package, but most of them eventually did so. Many of these small farm *late* adopters benefited from increased production, greater employment opportunities due to intensive cropping and higher wages in the agricultural and non-farm sectors. Moreover, most land-owners were able to keep their land and experienced significant increases in total production. Mechanisation did substitute some labour in the wheat growing areas but with total overall increase in labour requirement for the rice-wheat system and HYV package resulted in considerable increase in wage employment. However, with no increase in the net cultivated area and massive increase in population, Indian agriculture has been harbouring disguised unemployment. Rural non-farm sector such as rural services and agro-processing industries could play a major role in creating further employment opportunities.

3.5 IMPLICATIONS OF GREEN REVOLUTION: SOME PROBLEM AREAS

A revolution of this magnitude was bound to create some problems of its own. Critics charged that the effects of the Green Revolution show an uneven spread leading to increased income inequality and environmental degradation. Some of these criticisms are valid and have been or still need to be addressed. Some of the important problems are discussed in the following sub-sections.

3.5.1 Uneven Spread

A large body of empirical literature suggests that the green revolution increased regional inequalities and adversely affected the poor farmers. It was found that better endowed areas and owners of large farms were the main adopters of the new technology because of their better access to irrigation water, seeds, fertilisers and credit. The Revolution was also criticized for being crop-specific. On the one hand the rice-wheat system of cultivation made a spectacular growth, on the other pulses, oilseeds and coarse cereals suffered from low productivity and poor production. With greater area coming under rice and wheat, these crops were pushed to marginal lands. The situation is reflected in the fact that the per capita availability of pulses has declined and a large quantity of edible oil is still imported.

3.5.2 Soil Nutrient Depletion and Imbalances

Diagnostic surveys conducted by regional agricultural universities and international agencies have shown that in recent years higher amounts of fertilizer need to be applied for getting the same level of yield as that achieved in the 1970s and early 1980s. Crops remove substantial quantity of major nutrients from soil, particularly, in high input intensive rice-wheat systems. It has been observed that with time agricultural practices in north-western India have been removing more nutrients than the amount added externally through fertilizers. It is, therefore, not surprising that farmers would eventually need to apply higher amounts of nutrients per unit of yield. Further, it has been shown in long-

term experiments as well as at farmers' fields that soils are becoming deficient in potassium. A declining trend in available zinc content of soils has also been reported. This imbalance in soil nutrients has been attributed to be a major cause for the stagnation in the yield of rice and wheat. Awareness about balanced fertilization and efficient nutrient management would help ameliorate the situation.

3.5.3 Declining Total Factor Productivity

It was realised during the late 1980s that the rapid growth attained during the early years of the Green Revolution might not be sustainable in the long run. Total Factor Productivity (TFP), sometimes referred as *multifactor productivity*, is one of the widely used methods to quantify the sustainability of any system. It also measures economic efficiency. *TFP can be defined as the rate of growth in quality adjusted output less the rate of growth of quality-adjusted inputs.* It provides a measure of increase in output that is not accounted for by increase in the quantity of inputs. As an example, suppose we note that over a year the agricultural output (e.g. rice-wheat cropping system) has grown by 4% while the inputs used in production (e.g. land, labour, seeds, fertilizers, etc.) have increased by 3.2%. The difference between the two (i.e. 0.8%) is labeled the Total Factor Productivity Growth. A declining trend in TFP growth is a sign of declining sustainability of system. A recent study reports that during 1980s, 63 per cent of gross cropped area of the Indo-Gangetic plains showed moderate to high growth in TFP, which declined to 31% during the 1990s. On the other hand, 33 per cent of gross cropped area of the region showed either stagnant or negative growth in TFP during 1980s, which increased to 62 % during the1990s. This requires corrective steps in the form of agricultural research, infrastructure development and policy interventions failing which there can be serious implication for the food security of the country.

3.5.4 Water Management Concerns

There are two sources of irrigation water in Green Revolution areas – canal water and groundwater. Excessive use of water in these areas is causing a gradual decline in the water table and also in the quality of water in many regions. Pumping water from deeper layers increases the total operational cost and thus decreases the profitability of growing rice and wheat. Another problem for water management, particularly in the trans-gangetic plains, is that of waterlogging. Due to excessive use of irrigation water and percolation from canals, distributaries and water-courses, water table has risen in some areas of Punjab, Haryana and Uttar Pradesh. This has led to soil salinity in these areas.

3.5.5 Pest Problems

A change in the spectrum of pests is possible with a change in agro-ecosystems such as that brought about by the intensification of the rice-wheat area of northwestern India. Green Revolution led to the cultivation of uniform artificially produced seed types replacing the enormously large range of local seed types, which were grown and flourished through centuries of evolution. The susceptibility of new varieties to insect-pests has become evident from a considerable rise in their attacks since 1980s. Among weeds, *phalaris minor* has spread considerably over time. There is growing recognition now that resistance to herbicides has appeared in large areas under the rice-wheat sequence and that is a real threat to wheat production

3.6 GREEN REVOLUTION: AN ASSESSMENT

Overall, the Green Revolution is a major achievement for India, as it has provided an unprecedented level of food security. It represents the successful adaptation and transfer of the same scientific revolution in agriculture that the industrial countries had already

appropriated for themselves. It has lifted a large number of poor people out of poverty and helped many non-poor people avoid the poverty and hunger they would have experienced had it not taken place. The largest benefits to the poor are mostly indirect, in the form of lower food prices, increased migration opportunities and greater employment in the rural non-farm economy. The direct benefits to the poor through their own on-farm adoption, greater agricultural employment and empowerment have been more mixed and depend heavily on local socio-economic conditions. In many cases inequalities between regions and classes that adopted Green Revolution technologies worsened, but in a number of other cases they did not. Also, it has given rise to many negative environmental issues that have yet to be addressed adequately.

Indian agriculture is facing new challenges. The potential of the Green Revolution varieties appears to have exhausted. The yield barriers have to be broken through research and development. A tempting option is developing and growing genetically modified (GM) crops or transgenics. They are said to give higher yields, be nutrient enriched and display greater immunity to pests. However, an objective scientific assessment of the claims made for GM crops is not yet complete. Once such claims, which are mainly made by multinational companies are vetted, large-scale cultivation of such varieties may provide another opportunity. On the other hand, a large number of farmers have yet to adopt the existing yield increasing technologies. Extension access to such farmers should be ensured for wider acceptance of the existing technologies.

The indirect benefits to the poor due to another technological breakthrough in agriculture are likely to be weaker in the future as globalisation and trade in agricultural commodities makes food prices less responsive to local production. Diversification in crop production, value-addition and agribusiness development in the rural sector hold the key to livelihood security in rural areas. By building on the strengths of Green Revolution, while seeking to avoid its weaknesses, scientists and policy makers can take significant steps toward achieving sustainable food security in the country.

3.7 NEW CHALLENGES BEFORE THE INDIAN AGRICULTURE — WTO, IPR, ETC.

After having achieved the goal of food self-sufficiency during the Green Revolution period, nutritional and income security have emerged as the most important issues related to agriculture. There is a need to make cultivation of pulses and oilseeds more profitable than rice and wheat for increasing per capita availability of pulses and reducing the import of edible oils. Keeping in tune with the diversification in the consumption pattern of people, fruits and vegetables, milk, fish and meat production should be given emphasis. Post-harvest losses continue to be enormous in the country. There is a need to improve the shelf-life of perishable agricultural commodities through genetic enhancement and the creation of infrastructural facilities in rural areas. Such facilities will encourage development of agro-processing and value-addition to the farm produce, save farmers from price risks and provide income security. There is also a need to make research and development efforts to increase productivity in the areas that depend on rain.

Agriculture has become an important agenda of trade negotiations in the World Trade Organisation (WTO) regime of international trade. Three major aspects of WTO agreement concern Indian Agriculture – (a) ***Agreement on Agriculture (AoA***); (b) ***The agreement on Sanitary and Phyto-Sanitary (SPS) measures***; and (c) ***Trade Related aspects of Intellectual Property Rights (TRIPS).***

Agreement on agriculture covers three broad areas:

a) Domestic support or reduction of domestic subsidies,

b) Market access or import liberalisation, and

c) Export competition or export liberalisation.

In view of the above agreements, steps have been taken to make Indian agriculture more competitive to take on challenges posed by liberalisation and globalisation. The quantitative restrictions on import of agricultural commodities were removed with effect from April 1, 2000. The Plant Varieties and Farmers Rights Act was enacted in October, 2001. It safeguards the interests of breeders and farmers. In order to conform to SPS measures, however, the quality of agricultural produce needs to be upgraded and monitored. The support measures given to the agriculture of developed nations is a major force to be reckoned with both at the production level as well as at the level of trade negotiations.

3.8 LET US SUM UP

In this unit you have learned about the background, nature and the impact of the Green Revolution on rural India. The basic strategy which was adopted in the mid 1960s consisted of the application of an input package of new HYV seeds, fertilisers and pesticides combined with an assured irrigation facility. To encourage the adoption of this technology, the government also formulated policies regarding the pricing of output, subsidies on inputs and increased availability of credit for such investment.

The early success was in the wheat growing northwestern region. Some pockets of HYV rice cultivation have also emerged in south India. The other parts of the country, particularly rainfed areas of the country have been slow in adopting the new technology. The strategy has prevented the rate of growth of food-grain output from falling, but it has not been able to push up the productivity of other crops particularly oilseeds and pulses.

The limited spread of the Green Revolution has become a cause for concern, as it has remained largely crop- and area-specific. In recent years there has also been some environmental problems associated with this strategy.

On balance, the Green Revolution has been an important contributor to the growth of food-grain output in the last thirty-five years. Current strategies of agricultural development must take into account the need for sustainability enhancing technologies and the changes in international trade scenario. Issues such as suitable technology for rainfed areas, resource management, better livelihood strategies and trade should be incorporated in the policy and its implementation assured at all costs.

3.9 KEY WORDS

CACP : Commission for Agricultural Costs and Prices, which announces Minimum Support Prices (MSP) prior to the sowing season.

GMO : A genetically engineered organisam which carries specific traits such as resistance against herbicides.

HYV Package : The combination of high yielding varieties of seeds, with regular irrigation, fertilisers and pesticides designed to give higher yields.

Institutional Credit : Credit available from commercial banks and primary agricultural cooperatives and other organised institutions rather than from private sources such as money-lenders.

Marketed Surplus : The part of production, which is sold in the market.

Minimum Support Prices: Prices announced and offered by the government prior to the sowing of seeds to make the crop attractive for farmers and to avoide the risk of fall in prices.

Photosynthesis : The process by which plants convert carbondioxide and sunlight to produce their food.

Scale Biases : Sometimes a technology or the outcome of research *favours* only the *large* producers of a commodity. Such research/technology is said to suffer from scale-bias.

SPS : Sanitary and Phyto-Sanitary standards of WTO, which prescribes the minimum safety standards for export of agricultural produce.

Transgenic : GMO plants are also called transgenics.

3.10 REFERENCES AND SUGGESTED READINGS

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3.11 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Check Your Progress I

1) (b) 2) (b)

3) For purposes of increasing agricultural production, expansin of the area under cultivation reached its limits in the early sixties. The land reform measures and irrigation development programmes undertaken earlier did not result in adequate growth in production of food-grains. The food security of a fast increasing population was much dependent on imports, particularly from the USA. The overall economy was being adversely affected because of the lack of self-sufficiency in food-grains. Under such compulsions, the Government was forced to adopt a new agricultural strategy around the mid 1960s.

Check Your Progress II

1) (a) 2) (a) 3) (d) 4) (c) 5) (c)

6) The basic elements of the strategy adopted for the Green Revolution are the following:

   a) A package of inputs comprising HYV seeds, fertilisers, irrigation, and pesticides. All these were to be applied in accordance with a recommended package of practices, i.e. appropriate proportion of fertilizers and water at the right time etc.

   b) Institutional support in the form of minimum support prices, procurement operations and credit facilities, and

   c) A geographical focus on the areas having prerequisites for applying the package of practices.

Check Your Progress III

1) (c) 2) (b) 3) (a) 4) (b) 5) (a) 6) (a)

UNIT 4 AGRICULTURAL EXTENSION SERVICES

Structure

4.0 OBJECTIVES

In this unit we introduce you to the basic concept of extension and agricultural extension services. You will also learn about the agricultural extension system in India. By the end of this unit, you should be able to:

- bring out the distinguishing features of agricultural extension;
- trace the evolution of agricultural extension system in India;
- outline the organisational set-up of agricultural extension services in India; and
- identify the constraints and problems in the extension system and the measures to tackle them.

4.1 INTRODUCTION

Now you are familiar with the planning and administrative structures for rural development and also the functions of rural-development institutions such as the cooperatives, the banks and the Panchayati Raj Institutions. Let us now look into agricultural extension services as they obtain in India.

You have seen in Block 1 of Course 1 that agriculture forms the backbone of rural India and that it is essential to transform traditional agriculture and modernise it so as to increase productivity. Agricultural extension is one of the important instruments for achieving this goal. India has, in fact, one of the largest agricultural extension systems in the world. The impressive growth in agricultural production after independence, particularly that by means of the Green Revolution, was greatly facilitated by the large network of agricultural extension services. The understanding of its functioning in the transformation of agriculture and in the development of rural India is, therefore, important.

In this unit you will be exposed to the present organisation of agricultural extension services in the country including the extension services offered by agricultural universities and research institutes. A brief discussion on the history of agricultural extension has also been presented to help you in understanding the evolutionary changes in the set-up of agricultural extension. The present agricultural extension services as well as its problems are also referred to in our discussion.

4.2 CONCEPT AND SCOPE OF AGRICULTURAL EXTENSION

Change through educational methods (and not through force) is the goal of *extension;* the basic assumption being that humasns have immense capacity to learn and broaden their experience through education. Emphasising the educational role, ***Ensminger*** (1957) observed that "Extension is education and its purpose is to change the attitude and practices of the people with whom work is done." The basically educational role is also emphasized by ***Maunder*** (1973) who defined extension as a "service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting the social and educational standards of rural life." ***Mosher*** (1979), however, feels that the concept of extension has to go beyond education in the case of developing countries where the most important need of the farmers is not just to make better use of the resources already available with them, but to get access to one or more specific resources. This means that the role of extension agents is not only to teach farmers about improved methods of farming, but also to make necessary arrangements for the supply of inputs like improved seeds, fertilizers, credit, marketing facilities, etc.

In India the concept of extension included both education and services in the past. The following observation of the Report on Organising Agricultural Extension in India (Government of India, 1970) makes interesting reading :

"The dichotomy between extension (education) functions on the one hand, and supplies and services function on the other, is largely artificial in the Indian situation. Educating the rural community in techniques designed to bring about better living is no doubt the primary objective of extension, but the educative process itself is unlikely to succeed in the long run unless its relative efficiency can be demonstrated and it is guaranteed that the adopter shall have no difficulty whatever in implementing it. The process of change has to overcome the drags of traditional social structure, and these drags frequently are the financial, supplies, production, distribution and marketing (in brief economic) arrangements in the society. Resistance to change derives much of its strength from the inconsistency between these arrangements and the contemplated innovation. An innovation cannot succeed without necessary modernisation of the aforesaid arrangements and it is natural therefore that a relapse to traditional practices should occur after a brief and perfunctory endeavour of introducing innovations. This, in fact, has happened in some instances where the farmers abandoned higher yielding varieties in favour of local varieties after an initial effort, the lessons of which were bitter. The explanation for the failure of the innovation was the inadequacy of the supplies and services structure … Extension should be oriented towards production and this automatically involves reform and strengthening of supplies and services arrangements."

The National Commission on Agriculture (1976) was, however, of the view that extension is basically education and preparation for the change when it stated that extension "refers to an informal out-of-school education and services for the members of the farm family and others directly or indirectly engaged in farm production, to enable them to adopt improved practices in crop, livestock and fisheries production, management, conservation and marketing. Agricultural extension is not only imparting knowledge and securing adoption of a particular improved practice, but also aims at changing the

outlook of the farmer to the point where he will be receptive to, and on his own initiative continuously seek means of improving his farm occupation, home and family life in totality." Thus, though extension to be effective implies coordination with supply and service agencies so that timely support can be ensured, supply and regulatory functions as such are not a part of extension. This continues to be the accepted meaning of extension today.

Extension has been defined according to different contexts and policy traditions which is one of the reasons for different definitions of extension. Four traditions of extension have been identified by ***Roling*** (1988) which are outlined in Box:1 below.

Box-1 Traditions of Extension

i) **Conservative tradition**: Here , extension is seen as an instrument for helping people to make right choices to achieve their goals. This tradition can also be named 'informative' extension.

ii) **Socialist tradition**: Here, extension is seen as an instrument of emancipation or liberation of the poor people, which may call for structural changes to achieve societal objectives. This can be termed 'emancipatory' extension.

iii) **Formative or human resource development tradition**: Here the emphasis is on improving the capacities of the rural people which will enable them to make right decisions as well as organise themselves to deal with their problems.

iv) **Persuasive extension**: Here the emphasis is on inducing preventive behaviour related to health hasards, environmental pollution, etc.

What are the common elements in the different definitions of extension? A critical analysis of the different definitions will reveal the following common elements [Zuubier (1984) as reported by Roling (1988)] :

i) *Extension is an educational process and aims at voluntary change.*

ii) *Extension is an intervention deployed by an institution.*

iii) *Extension makes use of different communication channels and teaching methods.*

iv) *Extension focuses mainly on the promotion of presumed collective or public utility, rather than some private interest.*

The following definition as given by Roling (1988) encompasses the above common elements: Extension is 'a professional communication intervention deployed by an institution to induce change in voluntary behaviour with a presumed public or collective utility.'

Though extension as an educational and service system was first applied to extend improvements in agriculture, the concept and method of extension is now used in various fields. When the concept of extension is used in agriculture, it is called 'agricultural extension'; when it is used for home science, it is called 'home science extension' and so on. The term *rural extension* includes extension activities related to all aspects of rural development including animal husbandry, industry, forestry, fisheries, home science and health.

Objectives of agricultural extension

An important goal of extension is growth with equity, i.e. serving the educational, technological and service needs and the interests of the smaller farmers as much as those of the bigger farmers, though sometimes there is a tendency to concentrate on the bigger farmers for quick results; this, however, tends to restrict the actual goal of extension.

You have by now got some idea about the objectives of extension. Let us now list the objectives in detail as follows:

- To educate farmers about farming innovations and prepare them for change and development;
- To provide improved technology, information and skills to farmers for increasing agricultural and livestock production, and the productivity;
- To give feedback from the field to the research stations on the application of technology generated by them;
- To conduct demonstrations in farmers' fields on the potentials of improved farm technology;
- To assist farmers to get access to services and supplies, credit and marketing; and
- To help them develop resources like land and water.

We, thus, see that a wide range of functions need to be performed in order that the objectives of agricultural extension are attained.

Check Your Progress I

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Briefly explain the meaning of extension.

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2) What are the common elements in the various definitions of extension?

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4.3 DIFFERENT APPROACHES FOR ORGANISING AGRICULTURAL EXTENSION SERVICES

There are several approaches for organising agricultural extension services. These have depended on factors such as the administrative structure for agricultural development, research and training, the goals that extension seeks to achieve, the field level infra-structure for development, and the financial and manpower requirements. Axinn (1988) has identified the following eight models of or approaches to organising agricultural extension:

i) **The general agricultural extension approach:** It is the common model followed by most of the countries. It follows a top-down transfer of technology approach with the assumption that communicating the details of improved technology available with research institutes to farmers will result in increased productivity and production.

ii) **The commodity specialised approach:** It focuses on a particular crop or commodity such as coffee, rubber, sugarcane, etc. It is highly specialised in nature with the planning and implementation of the programme controlled by the commodity organization.

iii) **The training and visit approach:** It became popular during mid-1970s. This approach emphasises regular training of extension workers on the latest techniques and their visits to selected contact farmers. The programme planning and implementation is centrally controlled.

iv) **The participatory extension approach:** It emphasises formation of farmers' organisations and groups such as self-help groups and the need for learning from farmers' wisdom. Farmers are involved not only in decision making related to programme planning and implementation, but also in controlling it locally.

v) **The project approach:** Here, the extension efforts are concentrated on a specific area for a defined period of time along with a greater level of the infusion of resources from outside. The planning and implementation of the programme is done by the project staff.

vi) **The farming system approach:** The main focus of this approach is to develop appropriate technology for the farmers in resource poor areas on a participatory basis. The technologies are developed on the basis of holistic agro-ecosystem involving researchers, extension personnel, farm women and men.

vii) **The cost-sharing approach:** Here, a part of the cost of agricultural extension is paid by the farmers. Planning and implementation of the programme is jointly shared by the implementing agency and the local people.

viii) **The educational institution approach:** Here, the local agricultural research or educational institutions get involved in planning and implementation of extension programmes on a limited scale for the purpose of testing and transferring the new technologies developed by them.

4.4 EVOLUTION OF AGRICULTURAL EXTENSION SERVICE SYSTEM

4.4.1 Agricultural Extension in India after Independence

In Unit 4 on 'Rural Development in India' in the previous block of this course, you have read about the early pioneering efforts of the extension and community development programme which was launched in 1952.

India launched Community Development Programme (CDP) in 1952 to bring about integrated development of villages through extension services. The Community Development Programme failed to bring about the desired level of agricultural production and productivity. The rate of change in the average annual growth rate of agricultural production during the period 1952-53 to 1958-59 was only marginal. There was no significant increase in the production and productivity of major agricultural crops. In fact the fall in production during 1957-58 due to drought increased the import of food grains. Under these circumstances the agricultural scene of India was critically examined by the Government with the help of experts and Ford Foundation. As a result, Intensive Agricultural District Programme (IADP) was launched during 1961. The IADP was started in several selected districts on a pilot basis and subsequently extended to nine

more districts. The IADP or the Package Approach was based on a package of improved agricultural practices, supply of necessary farm inputs including credit and increased extension services. The extension organisation of IADP District was headed by a Project Officer and supported by a number of subject matter specialists. The VLWs under the project devoted their entire time for agriculture. The IADP was based on selective area approach because only the districts with low risk and high potentials were selected in order to have a quick response. The successful experience with IADP led to Intensive Agricultural Area Programme (IAAP) in 1964, which was implemented in about 1084 blocks drawn from 114 districts. The IAAP was less intensive in nature, crop oriented and employed staff at a reduced scale.

Both the programmes of IADP and IAAP were marked by increased agricultural production, though only in restricted areas. These programmes, however, could not bring about substantial increases in production, because the technological package of the schemes was not sufficiently responsive to fertilizer. The above point can be seen from the fact that the annual food-grains production remained only around 80 millions during 1961 to 1964. It rose to 89 million tones during 1965 mainly because of favourable weather conditions. The instability of Indian agriculture as well as its dependence on the vagaries of monsoon was again reflected during 1966 and 1967, when the drought brought a drastic reduction in food-grains production. It was during this time that the new agricultural technology based on genetic manipulation, especially in crops like wheat, maize and sorghum, came on to the scene. India took a bold step in formulating a new agricultural strategy based on high yielding varieties, plus a package of improved practices. This led to the programme known as ***High Yielding Varieties Programme (HYVP),*** which was introduced in 1967. The HYVP resulted in wide adoption of new varieties of seeds and practices like the use of fertilizers, improved cultural practices, pesticides, etc., by the farmers, especially in irrigated areas. This made the way for the era of 'green revolution' in India in late 1960s. The major component of extension services under HYVP was the introduction of new technologies with necessary inputs.

Contrary to the expectations of the planners, the new technologies did not diffuse to all sections of the farming community, especially to small and marginal farmers. Thus, the benefits of the green revolution were concentrated mainly on big and rich farmers and that too in limited areas. In fact the inter-personal as well as the inter-regional disparity in income distribution was widened. In order to narrow the gap and to help the weaker sections of the community, special target group programmes were started in 1970s. These were ***Small Farmers Development Programme, Marginal Farmers and Agricultural Labourers Development Programme, Drought Prone Area Programme and Hill Area Development Programme.***

Even with all the above programmes and various extension approaches, there remained a wide gap between the potential of new technology and the actual yield in the fields. Further, extension organisation continued to remain weak with poor linkages with research institutes. The technical competency, morale and motivation of the majority of the extension functionaries were poor. Under these circumstances, during 1970s India introduced a modified version of extension services called 'Training and Visit (T&V) system' with the help of World Bank.

4.4.2 T & V System of Extension

The Training and Visit (T&V) System of extension was introduced in India to improve the effectiveness of agricultural extension. This system is also known as Reformed Extension or Intensive Agricultural Extension. It is operated through the Departments of Agriculture in the States. T & V was introduced with the help of the World Bank during 1974 as a component of three Command Area Development Projects in Rajasthan and Madhya Pradesh. In mid-1975, it was introduced in six districts of West Bengal, and then the system spread to almost all the states of India. The concept of T & V was

developed by Daniel Benor, an Israeli extension expert, and was first tried in Seyhan Irrigation Project in Turkey.

A basic feature of the T & V system was a systematic programme of in-service training of Village Extension Workers (VEWs) and planned schedule of visits to the farmers' fields. The VEW was given training once in a fortnight on specific agriculture practices directly related to farm operations scheduled for the coming weeks. There was concentration of efforts on important crops and agricultural practices. The VEW planned his visits to farmers once in a fortnight at a fixed time known to them. The visits of VEW were supervised and guided by Agricultural Extension Officers and subject matter specialists. The farmers to be covered by each Village Extension Worker (usually 500 to 800) were divided into eight groups and each group was covered under a fixed fortnightly schedule. As it was not possible individually to meet all the farmers in each group, ten contact farmers from each group were selected for this purpose. These contact farmers were selected on the basis of norms fixed by the Department. Thus a representative selection of contact farmers, including small and marginal farmers and farmers from disadvantaged sections, was made. The VEW primarily concentrated his efforts on contact farmers who were expected to diffuse the technology to other farmers in the group. These farmers were encouraged to meet the VEW directly and get advice. The system also ensured streamlining of arrangements for the supply of agricultural inputs and credit and mobility of extension personnel.

4.5 PRESENT EXTENSION SERVICE SYSTEM

Agricultural extension service in our country is the primary responsibility of State Departments of Agriculture. In recent years, organisations supplying inputs, credit agencies, and voluntary organisations have also begun to provide agricultural extension services.

Till the 1960s, the Departments of Agriculture in the states were responsible not only for extension, but also for agricultural education and research. Subsequently, agricultural research and education were transferred to agricultural universities. Further, due to increased specialisation and workload, the Department of Agriculture has been divided into several Departments/Directorates – Horticulture Department, Agricultural Engineering Department, Oilseeds and Pulses Directorate, etc. These departments have their own field level extension functionaries and do not come under the extension service system, which is operated through the Department of Agriculture. Arrangements, however, have been made to establish linkages between various agencies involved in agricultural extension work.

In all the states, the Department of Agriculture is headed by the Director of Agriculture who is responsible for the implementation of the Government policies related to agricultural production in the state. The Agricultural Production Commissioner does the overall coordination of the activities of various departments and organisations related to agricultural production in the state.

4.5.1 Extension Organisation: Setup at Various Levels

General Organisational Structure

At the state or headquarters level, there are several ***Additional Directors of Agriculture who report to the Director of Agriculture***. The Additional Directors are assisted by Joint Directors or Deputy Directors and a number of subject matter specialists who take charge of different components like administration, personnel management, inputs, extension, seeds, information, training, monitoring, technical support, etc. In some states, where there are many districts, the ***District Extension Officer*** (also called ***Deputy Director of Agriculture***) is supervised by ***Zonal or Divisional Extension Officer***

(also called Joint Director of Agriculture). At the district level, the District Extension Officer is supported by a small team of ***Subject Matter Specialists*** (SMS). At the sub-divisional level there are ***Sub-Divisional Extension Officers (SDEOs).*** About 4 to 8 SDEOs are supervised by a District Extension Officer. At the block level there are 5 to 8 Agricultural Extension Officers (AEOs) who are guided by a SDEO. Each AEO supervises and trains 6 to 8 Village Extension Workers (VEWs). The VEWs are directly in touch with the farmers at village level.

4.5.2 Current Status of Agricultural Extension

At the state level, the Department of Agriculture, through its Extension Wing, continues to be the major player in the field. Almost all states established Training and Visit System of Extension in the late 1970s or the early 1980s. Though the World Bank's assistance to this programme has been withdrawn, yet the basic frame of T&V system has been maintained by the states. The number of the different categories of extension staff in India has been estimated to be 110,000. Twenty per cent of the extension staff possess a college degree as their minimum qualification.

Different studies and experiences have shown that the T&V approach was suitable mainly for irrigated areas, which have witnessed a higher level of gains in production and productivity. This system, however, was not effective in resource poor areas. The problems of T&V system were as follows:

a) poor spread of messages through contact farmers; b) low levels of the relevance of technical messages to farmers' conditions; c) concentration on cereal crops; d) lack of farming system approach; e) neglect of farm women; f) routine fortnightly training programmes which lacked new technical content; g) non-availability of qualified subject matter specialists; h) problems related to non-filling up of vacant posts; i)weak input support system; j) poor performance of monthly workshops and other mechanisms to improve linkage with research; and k) lack of an effective use of multimedia for the diffusion of innovations.

In order to tackle the weakness of T&V system, many states have made extension "broad based". The "broad based" extension approach envisages the transfer of not only the technologies related to the major crops but also allied enterprises such as forestry, fisheries, horticulture, livestock, etc. in an integrated manner through co-ordination among the different development departments. It may be mentioned here that the results of broad-based extension have not been encouraging due to various factors like difficulties in co-ordination among the different departments and poor professional competencies of the field level extension personnel.

Some states, like Kerala and Rajasthan, have introduced 'group approach' to extension which has been found successful in countries like Indonesia and Thailand. The group rather than the individual based extension approach has shown promising results in securing farmers' participation and making the extension services relevant to farmers' needs. Some states are also experimenting with bottom up approaches in preparing extension programmes by involving farmers in the planning process.

The other innovative approaches and practices which have been recently tried to improve the efficiency of extension includes the concept of 'para-extension worker' or 'farmer-led extension'. This approach relies on 'farmer to farmer' extension based on the participation of the members of the farming community. Some of the members of the farmers' groups or organisations are selected to perform the role of extension workers on voluntary on nominal payment basis. The selected para-extension workers are given training at State Agricultural Universities (SAUs) or Krishi Vigyan Kendras (KVKs) in collaboration with NGOs. These 'farmer extensionists' keep in touch with extension agencies and pass on the technical messages to the members of their group.

At the national level, the Directorate of Extension, which is a part of the Department of Agriculture, Ministry of Agriculture & Co-operation, co-ordinates various activities related to agricultural extension. The Directorate of Extension was set up in 1958 in the wake of the Community Development Programme and National Extension Services. It was to serve as a nodal agency to provide guidance and technical support to different states to operate efficient extension services. The functional areas of the Directorate are extension management, extension training and farm information. The Directorate, through its four Extension Education Institutes located at Nilokheri (Haryana), Anand (Gujarat), Hyderabad (Andhra Pradesh), and Jorhat (Assam), is also imparting training in different areas of extension methodology. The National Institute of Agricultural Extension Management (MANAGE) established in 1985 offers training in the area of extension management to senior and middle level extension functionaries.

Check Your Progress II

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) List two features of T&V system of extension.

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2) Name at least three measures undertaken by the State Departments of Agriculture to tackle the weaknesses of T & V system.

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3) List three recent innovations in the organisation of extension.

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4.6 EXTENSION ROLE OF AGRICULTURAL UNIVERSITIES AND ICAR INSTITUTES

Since 1960 significant progress has been made in the field of agricultural education in India. ***A new set of institutions called agricultural universities patterned after the Land Grant Universities of U.S.A., were set up in various states in India***. This important innovation in the field of agricultural education has led to strengthening of the national system of farm education, research and extension. The role of these agricultural universities differs sharply from that of the traditional universities. In addition to being academic institutions of higher learning in the usual sense, these universities are actively involved in transforming the lives of rural people through their tripartite functions of teaching, research and extension. In more specific terms the major extension roles of agricultural universities are: i) *manpower development in extension,* ii) *collect, process and disseminate the latest research findings to extension personnel and extension clientele through appropriate methods and media,* iii) *identify field problems for which scientific solutions are not yet available and to communicate these to the concerned subject matter departments to work on, and* iv) plan and organise training of various types and durations for extension personnel and farmers.

The Indian Council of Agricultural Research (ICAR) is also involved in agricultural extension apart from its major role of research and education. The ICAR has contributed to agricultural extension by way of innovative extension approaches. In fact the concept of and the project on National Demonstration, which was one of the key instruments for bringing about 'green revolution' in India, was developed and launched by ICAR during the 1960s. The extension projects like Operational Research Project (ORP) and Krishi Vigyan Kendra (KVK) and Lab to Land Programme (LLP) were also introduced by ICAR. The present thrust areas of extension activities of ICAR are related to technology assessment and refinement for identifying the location specific technology, vocational training of farmers, training of extension personnel to update their knowledge, and providing single window delivery system of technology products, services and information through Agricultural Technology Information Centres (ATIC).

The extension activities of ICAR are carried out through Krishi Vigyan Kendras (344 in number spread all over India), Trainers' Training Centres (10 in number), Institute Village Linkage Project (42 centres) and Agricultural Technology Information Centres (44 in number).

Krishi Vigyan Kendras

Krishi Vigyan Kendras (KVKs) or Farm Science Centres are specialised institutions to provide vocational training to farmers based on the idea of *learning through work-experience*. The KVKs were born out of the recommendations of the Education Commission (1964-66). The KVKs in contrast with Polytechnics do not offer diploma or degree oriented courses. Instead, the courses offered by KVKs are need based and impart skills and knowledge to the practicing farmers, in-service extension workers and to those who seek self-employment in agriculture. At present, there are 344 Krishi Vigyan Kendras spread all over India. The mandate for KVKs has been revised in recent years in accordance with the changing needs of the farmers. The current mandate of the KVKs includes conducting 'on-farm tests' for identifying relevant location-specific technologies, organising training to update the extension personnel with emerging advances, organising short and long-term vocational training courses in agriculture and allied vocations for the farmers and organising frontline demonstrations on various crops.

Institute Village Linkage Programme (IVLP)

The IVLP is an innovative programme developed by the ICAR to help scientists to have direct interaction with the farming community, so that appropriate technologies are

developed for farmers. Here research, extension and farmers establish firm links by jointly carrying out the assessment and refinement functions in the technology development and dissemination process. This helps the research system to generate a cafeteria of technologies, which are more productive in small production systems, more profitable in the commercial production system and gender sensitive for removal of drudgery of farmwomen. The major objectives of IVLP as per ICAR guidelines are as follows:

1) To introduce technological intervention with emphasis on stability and sustainability along with productivity of small production systems.

2) To introduce and integrate the appropriate technologies to sustain technological interventions and their integration to maintain productivity and profitability taking environmental issue into consideration.

3) To introduce and integrate the appropriate technologies to increase the agricultural productivity with marketable surplus in commercial on- and off-farm production systems.

4) To facilitate adoption of appropriate technologies for the removal of drudgery, increasing efficiency and generating higher incomes for farmwomen.

4.7 PRIVATISATION OF EXTENSION SERVICES

As you know, agricultural extension services are largely funded and managed by government agencies. Due to factors such as limited resources and changes in the policies of the government, ***'privatising extension'*** has been accepted as one of the strategies in recent years. The word 'privatise' is defined as transfer from state ownership to private ownership (Oxford Advanced Learners Dictionary, 1989). According to Savas (1987), the word ***'privatisation'*** has acquired a broad meaning as it has now come to symbolise a new way of looking at ***society's needs and rethinking of the role of government in fulfilling these needs***. It means relying more on societies' private institutions and less on government. Privatisation is the act of reducing the role of government or increasing the role of private sector in an activity or in the ownership of assets." (Sulaiman and Sadamate, 2000). The factors that favour privatisation of extension services are: i) difficulties faced by the government in funding the extension machinery, ii) reduced donor contribution to agricultural research and extension, iii) poor quality of the extension services provided by the government agencies, iv) transformation of agriculture from a subsistence to profit oriented enterprise, v) the development of private research and extension set-up with promising technology, and vi) global competition after GATT agreement.

Box 2

Alternative Cost-Sharing Arrangements (Mariam, 1993)

1) **Contracting:** Contracting out is now frequently considered to be one of the more feasible options for privatising the economies of the developing countries. This option is even more feasible when private companies prefer to act as contractors or concession agents. Government can assign contracts to non-profit voluntary or neighbourhood organisations for various types of service.

2) **Franchise agreements:** Franchising is a privatisation method whereby government grants private entity, authority to provide a particular service within a specific geographical area. Users receive and pay for the service directly but the government may monitor performance with respect to the franchise in terms of price, amount or level of service and the ability of providing a service. Franchising has great potential for achieving cost savings when applicable and properly implemented. The reason for this is that franchising allows the government to remove itself from the actual provision and delivery of service.

3) **Vouchers:** Government provides certificates to eligible citizens requiring a particular service. The users are then free to exchange the certificates or vouchers for services from qualified private organisations that return the vouchers to local governments for reimbursement. The voucher alternative allows the user to choose among services and providers and generally means better monitoring and quality control of services.

4) **Self-help:** This privatisation alternative is the most underutilised. Under this approach, the government encourages individuals or groups to organise their own services. The individuals involved become their own clients. This alternative is designed to encourage individuals to become more self-reliant, and to provide a service better tailored to local circumstances.

5) **Subsidy arrangements/ grants:** Government makes a financial or in kind contribution to private extension agencies at reduced cost. The subsidy arrangements are often used for governmental activities such as public safety, wealth and human services and recreation."

Alternative Cost-Sharing Arrangements

To facilitate withdrawal of Government from the provision of extension service, Mariam (1993), as quoted by Sulaiman and Sadamate (2000), has suggested several alternatives, which may be seen in Box 2 above.

4.8 RECENT INNOVATIONS IN ORGANISING EXTENSION SERVICES

In recent years several innovations have been introduced for organising extension. The following innovative approaches have been identified by Rasheed (2003):

1) Support the NGOs and Farmers' Organisations through the State Department of Agriculture.
2) Special programmes related to women in agriculture.
3) Development of Agricultural Technology Management Agency (ATMA) as a part of National Agricultural Technology Project
4) Promotion of group approach including Self-Help Groups.
5) Increasing the role of private and NGO sector.
6) Promotion of para-extension workers.
7) Increased use of modern Information and Communication Technologies such as computers, digital networks, telecommunication, radio, television, internet, etc. for the dissemination of farm information.
8) Establishment of Agri-clinics by the agricultural graduates with the assistance of bank loans.

Given below is a brief description of the Agricultural Technology Management Agency (ATMA).

Agricultural Technology Management Agency

Agricultural Technology Management Agency (ATMA) is one of the innovations meant to promote technology dissemination under the National Agricultural Technology Project (NATP). It functions as a registered society at district level and serves as a focal point for integrating research and extension activities and helps in decentralising the management of agricultural technology transfer. The members of ATMA include representatives of the Departments of Agriculture, Animal Husbandry, Horticulture,

and Fisheries. Each research-extension unit retains its institutional identity and the management committee of ATMA plans extension activities. At present, ATMA is in operation in twenty-eight districts spread over seven states. The objectives of ATMA are to strengthen research-extension-farmer linkages and to provide an effective mechanism for the co-ordination and management of the activities of different agencies involved in technology adaptation, validation and dissemination at the district level and below.

Salient innovative features of ATMA

The salient innovative features of ATMA are: i) creating Farmer Advisory Committees to improve feedback, ii) using NGOs to organise farmers and encourage private sector involvement in technology transfer, iii) validating and refining technologies through research units in the district, a bottom up planning procedure, iv) increasing the use of Information Technology (ARIS, WWW), v) providing in-service training to increase staff competence, vi) developing new Public-Private partnerships, and vii) forming and strengthening farmers' interest groups.

Major Functions of ATMA

The major functions of ATMA are given below:

- Diagnostic survey by researchers and extension workers along with other government staff from the agriculture and other line departments, NGOs and representatives of corporate sector processors, input suppliers, bank and farmer representatives using PRA techniques.
- Identification of problems currently affecting the technology dissemination system and limiting its performance or sustainability.
- Determination of the main opportunities and constraints (markets, input supplies, financial and social factors, the natural resource base, etc.) that should be considered for developmental planning.
- Formulation of Strategic Adaptive Research and Extension Plan for the district concerned, setting out technical objectives as well as innovations to be introduced into the organisation and funding of technology dissemination.
- Preparation of specific action plan plus implementation responsibilities of the public sector and other stakeholders for the specific year.
- Arranging technical programmes covering the need for adaptive research, farmer participatory trials, demonstrations, field days and the development of extension recommendations for the coming season.

4.9 PROBLEMS AND CHALLENGES IN EXTENSION SERVICES

In spite of different approaches and experiments of the past, we have not been fully successful in diffusing technology. Different studies, reports and observations reveal the following problems currently facing agricultural extension system of our country.

1) **Lack of the Participation of Farmers**

By and large the extension programmes have been developed and implemented without the active participation of farmers. Farmers (especially the small and marginal farmers), farm women and weaker sections of the rural society are rarely involved in identifying the needs and establishing priorities. Thus, without the inputs, and feedback from farmers, many extension programmes remain ineffective as an instrument of positive and planned change.

2) **Trickle down Approach**

The extension approach of our country has, by and large, been based on Roger's model of diffusion of innovations. According to this theory, the innovation is first adopted by a small group of motivated farmers, then it spreads to other farmers in the community. Our experiences, however, have shown that technologies have not diffused to the majority of small and marginal farmers and weaker sections. The diffusion model does not pay attention to social issues like inequality in socio-economic status, and unequal distribution of impacts and benefits of innovations. Extension approaches in the past have concentrated on reaching individual farmers and neglected 'group approach' and social 'action model'.

3) **Lack of Attention to Farming**

The agricultural extension for various reasons has been operating with a narrow focus with regard to the dissemination of farm technology. Efforts of extension are concentrated more on individual crops and efforts have not been made to improve the whole farming system. A holistic approach to extension, which includes different crops, animals, forestry, horticulture and fisheries, is missing.

4) **Financial Crisis**

Due to the problem of resource crunch the availability of funds for agricultural extension is getting reduced. Studies have pointed out that per hectare investment on extension works out to be about Rs. 16. Annual expenditure per extension worker is Rs. 15,000 for the main extension system of the Department of Agriculture. The extension system also suffers from the lack of operational funds needed for programme activities and the maintenance of physical infrastructure, as up to 90 per cent of the budget is allotted to salaries. Studies have also indicated that the share of non-salary component in the total extension expenditure is decreasing every year (Pal and Singh, 1997).

5) **Multiplicity of Agencies and Lack of Co-ordination among them**

One of the significant problems facing the extension system today is the multiplicity of departments and agencies dealing with extension work. Each department operates its own extension services. This problem has increased due to the creation of new departments like horticulture, agro-forestry, oil seeds, agricultural engineering, etc. While there is very little co-ordination among these line departments, most of them are involved only in the distribution of subsidised inputs. Attention has not been paid to improve the farmers' knowledge, skill and managerial abilities.

6) **Lack of Motivation and Morale among Extension Workers**

The extension service of our country has always suffered due to poor motivation and morale among extension staff. One of the reasons for this situation is poor professional status including low salary levels and lack of career advancement.

7) **Poor Impact**

The impact of extension services is not always visible and measurable. The impact due to extension cannot be easily separated out from that of other factors such as technology, various inputs and favourable climate. Due to methodological weaknesses in finding out the actual contribution of extension, the role and importance of extension has been questioned.

8) **Poor Inputs-support System**

In spite of growth in the provision of different inputs through private sector, the absence of assured and timely supply of quality seeds, fertilizers, pesticides and credit continues to be one of the serious problems facing extension today.

9) **Lack of Professional Competence**

The improvement of professional competence among the village level workers through regular training under T&V system has been found to be only marginal. A majority of the village level workers are matriculates and not interested in improving their professional competencies, as their promotions are not linked to performance. Most of the subject matters specialists at block and district levels are specialists only according to their job designations, and not according to their professional competencies, skills and knowledge. Many of them have become SMSs by the virtue of their seniority and promotions. As a result, they are not in a position to offer solutions to the complex field problems faced by the farmers.

10) **Poor Management of Extension Programmes, Organisations and Personnel**

Since extension services are provided through Government Departments and operated under bureaucratic hierarchies, the organisation and management of extension work has been affected by pathologies of bureaucracy. Thus, the contextual factors of extension have considerably weakened the efficiency of programme planning and implementation. The factors like bureaucratic work culture, ineffective reward system, domineering leadership style, monotonous nature of work, lack of team effort and lack of autonomy in decision making at the field level are responsible for the poor management of programmes and the people in extension organisations. Studies have also pointed out that extension personnel lack management skills in areas like planning, leadership, decision making, problem solving, team building and creativity.

11) **Neglect of Farm-women and Youth**

In spite of the fact that women are actively involved in farm related operations as well as in different farming activities, agricultural extension services are focused mainly on men. This male bias can be seen in the low recruitment levels of female VLWs and AEOs to reach out to farm-women. Attention has not been paid to provide extension services to women farmers assuming wrongly that farm-women play only a marginal role in farm production. Investigations, however, have shown that up to 60 per cent of all the farm operations are performed by women and a large number of farmers in India are women.

12) **Poor Use of Modern Communication Technologies**

While emphasising the importance of face-to-face method of extension, the T&V system has generally neglected the use of mass media such as radio, television, film, videos, and newspapers. Disappointment with the failure of diffusion through 'contact farmer system' shows the need for greater use of mass media to create awareness among farmers, as radio and television signals cover almost the whole population of India now.

Check Your Progress III

Note: a) Use the space provided for your answers.

b) Check your answers with the possible answers provided at the end of this unit.

1) Name three factors which favour privatisation of extension services.

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2) Suggest five measures for improving agricultural extension services in India.

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4.10 LET US SUM UP

In this unit, while looking at the concept and meaning of agricultural extension, we saw that definitions of extension vary according to the context and policy traditions under which they are defined. As we saw, in the Indian context, the meaning of extension is *education and preparation for change*. As we saw, the common elements in the different definitions of extension are that it is an educational process deployed by an institution, that it makes use of different communication channels and focuses on the promotion of presumed public utility.

The Training and Visit (T & V) system which was introduced in India during 1974 was one of the major exercise on re-organisation of extension services. Though the assistance of World Bank to this programme has been withdrawn, yet the basic frame of T & V system has been maintained by most of the states. In order to tackle the weaknesses of T & V system, many states have made extension service 'broad based'. The recent innovative approaches in extension include the promotion of group approach, increased role of NGOs and private sector, promotion of para-extension workers, establishment of agri-clinics and the use of modern information technologies. We also saw that promotion of Agricultural Technology Management Agency (ATMA) as a part of National Agricultural Project is a major innovative effort to make extension responsive to the needs of farmers using a participatory approach. Further, in recent years 'privatising extension' has been accepted as one of the important strategies in India.

Looking at the extension setup in India, we found that State Departments of Agriculture, Agricultural Universities and research institutes of ICAR are all engaged in agricultural extension work. The thrust areas of extension activities of ICAR include technology assessment and refinement of farm technologies, training of farmers through KVKs and a single window for services and delivery system through Agricultural Technology Information Centres.

The major problems of extension services in India are the lack of participation from resource poor farmers, dependence on the trickle down approach, the lack of farming system approach, inadequate funds for extension activities, multiplicity of agencies without proper co-ordination among them, poor motivation and morale of extension workers, poor impact of extension services, poor input-support system, neglect of farm women and youth and poor use of modern information and communication technologies.

4.11 KEY WORDS

Agricultural Technology : Management Agency (ATMA) It is one of the innovations in the technology dissemination components of National Agricultural Technology Project (NATP). It functions as a registered society at the district level and serves as a focal point for integrating research and extension

activities and helps in decentralising the management of agricultural technology transfer.

Communication : Communication is the process by which messages are spread from source to the receiver (Rogers and Shoemaker,1971).

Demonstration : Demonstration is a presentation which illustrates a task procedure or the use of an equipment in a step-by-step fashion, so that trainees can observe and understand the procedure, principles or the phenomenon in an interesting and convincing way.

Diffusion : Diffusion is the process by which innovations spread to the members of a social system (Rogers and Shoemaker, 1971).

Extension : Extension is *education* and its purpose is to change the attitude and practices of the people with whom work is done.

Innovation : An idea, which is, perceived to be new, or a new tool that can do things in a new way.

Institute Village Linkage Prograame (IVLP) : The IVLP is an innovative program developed by the ICAR to help scientists to have direct interaction with the farming community so that appropriate technologies are developed for farmers. Here research, extension and farmers establish firm links by carrying together the assessment and refinement functions in the technology development and dissemination processes.

Krishi Vigyan Kendras (KVKs) : Krishi Vigyan Kendras (KVKs) or Farm Science Centres are specialised institutions that provide vocational training, based on learning through work-experience, to farmers.

Learning : In the context of *extension*, learning is a process by which sensations are experienced, ideas and events perceived and understood and action taken resulting in desirable knowledge, skill and attitude.

Package Approach : Package approach refers to the package of improved agricultural practices, supply of necessary farm inputs including credit and increased extension services.

Privatisation : Privatisation is the act of reducing the role of government or increasing the role of private sector in an activity or in the ownership of assets (Sulaiman and Sadamate, 2000).

Teaching : Teaching refers to the process of imparting knowledge where the teacher controls the process and the content of learning.

Training : Training is a process of acquiring new skills, attitudes, and knowledge in preparation to enter a vocation or for improving one's productivity for an enterprise.

Training and Visit (T&V) System : This system is also known as Reformed Extension or Intensive Agricultural Extension. It is an arrangement for fortnightly training of extension workers and their scheduled visits to farmers' fields. T & V was introduced in India in 1974 with financial assistance from the World Bank.

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4.13 CHECK YOUR PROGRESS – POSSIBLE ANSWERS

Check Your Progress I

1) Extension is an educational process of working with people and not for them. It aims at behavioural changes (brought about by the newly acquired knowledge, skills and attitudes) among the recipients of the extension services.

2) i) Extension is an educational process that aims at voluntary change.

   ii) Extension is an intervention that is deployed by an institution.

   iii) Extension makes use of different communication channels and teaching methods.

   iv) Extension focuses primarily on the promotion of presumed collective public utility rather than some private interest.

Check Your Progress II

1) i) Fortnightly training of extension workers.

   ii) Scheduled visits to farmers' fields.

2) i) Broad-basing agricultural extension.
   ii) Introduction of group-approach to extension.
   iii) Involvement of farmers in the planning process.
3) i) Special programmes related to women in agriculture.
   ii) Establishment of Agricultural Technology Management Agency (ATMA).
   iii) Promotion of para-extension workers.

Check Your Progress III

1) i) Financial constraints in funding extension machinery.
   ii) Transformation of agriculture from subsistence to profit orientation.
   iii) Global competition after GATT agreement.
2) i) Ensure participation of resource poor farmers in extension programmes.
   ii) Adoption of farming system approach.
   iii) Improvement of co-ordination among different agencies involved in extension.
   iv) Increase the motivation and morale of extension workers through effective reward systems.
   v) Concentrate on farm women and farm youth.

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