



Department of Distance Education

Punjabi University, Patiala

Class : M.A. I (Economics)

Semester : 2

Paper : V (Economics of Agriculture)

Unit : II

Medium : English

Lesson No.

- 2.1 : New Agricultural Strategy and Green Revolution
- 2.2 : Problems of Agricultural Labour and Small Farmers
- 2.3 : Agricultural Credit
- 2.4 : Rural Unemployment
- 2.5 : Growth and Productivity Trends in Indian Agriculture
- 2.6 : WTO and Agriculture in India

Department website : www.pbide.org

NEW AGRICULTURAL STRATEGY AND GREEN REVOLUTION**2.1.1 Introduction****2.1.2 Objectives of lesson****2.1.3 Components of New Agricultural Strategy:**

2.1.3.1 Adoption of High Yielding Varieties of Seeds

2.1.3.2 Fertilizers:

2.1.3.3 Irrigation:

2.1.3.4 Programme of Multiple Cropping:

2.1.3.5 Provision of Agricultural Credit:

2.1.3.6 Protective Price Policy:

2.1.3.7 Dryland Farming:

2.1.3.8 Development of Infrastructure:

2.1.3.9 Plant Protection and Pest Control:

2.1.4 Achievements of New Agricultural Strategy:**2.1.5 Problems created by the Green Revolution:****2.1.6 Arguments by the Defenders of New Agriculture Strategy****2.1.7 Measures of further Revolution****2.1.8 Summary****2.1.9 Glossary****2.1.10 Short answer type Questions****2.1.11 Long answer type Questions****2.1.12 Suggested Readings****2.1.1 Introduction**

The new agricultural strategy of agricultural development is sometimes credited with remarkable success in raising the yield per acre of many crops. Some have chosen to call it 'Green Revolution', known also as the 'Seed Fertilizer Revolution'. It refers to the large increase in agricultural production which took place in a relatively small span of time following the use of high yielding varieties of seeds and chemical fertilizers also with other necessary inputs. This was made possible by the use of science and technology, for evolving seed varieties, which can absorb large amount of fertilizers to give a significantly higher yield per acre. The crux of new technology is the new seeds which are evolved out of the high

yielding imported seeds, that is a mix of the exotic with the indigenous variety. The use of new seeds requiring the use of new package of practices, more fertilizers, regular and increased water supply, drainage, pesticides and insecticides and much more investment on the whole. The new strategy was concerned with the promotion of a new technology which is the result of applied research in plant growth and genetics.

2.1.2 Objectives of lesson

In this lesson we will discuss new agricultural strategy and green revolution. Its components, achievements and problems.

2.1.3 Components of New Agricultural Strategy:

Green Revolution was the combined result of various measures taken by the Government. These measures are discussed below:

2.1.3.1 Adoption of High Yielding Varieties of Seeds

The evolution and introduction of HYVs has opened new technological vistas in Indian Agriculture. The discovery of HYVs were the result of sustained scientific research undertaken over decades at various research institutions in India and abroad. Most outstanding research contribution in this respect came initially from the International Centre for Wheat and Maize Improvement, Mexico (CIMMYT), International Rice Research Institution (IRRI) in Philippines for Rice. Similarly the International Centre for Tropical Agriculture (ICTA) in Nigeria, the International Potato Research Institute (IPRI) in Peru etc. are engaged in Research, specific to soil crop climate complexes of different areas.

These International Institutes are strongly supplemented by National Institutes. These are:

- IARI-Indian Agricultural Research Institute
- NDRI-National Dairy Research Institute
- FRIC-Forest Research Institute and College
- CSSRI-Central Soil Salinity Research Institute
- IIHR-Indian Institute of Horticultural Research

Besides, these research institutes devoted to technical research, research contribution had come from agriculture universities set-up in the wake of planning. New dwarf varieties exhibit the following characteristics:

- (i) They react favourably to increased amount of input fertilizers.
- (ii) The new varieties are photo-insensitive and are relatively less dependent on the duration of the day light rather than the traditional ones.
- (iii) The new varieties have a smaller duration which facilitates double cropping.

2.1.3.2 Fertilizers:

Besides the HYVs of seeds, fertilisers is also a component of new agricultural technology introduced during 1960s. This technology is also called as seed-cum-fertilizer technology. The use of fertilizers in Indian agriculture has received a boost after the initiation of HYVP-1966. This is a package programme wherein due emphasis has been given to the use of chemical fertilizers. It is also recognised now that multiple cropping is possible only by increasing the use of fertilizers. Big fertilizer factories had come into existence in India during the first three plans. Fertilizers were imported from outside also and the imports of fertilizers have been increased for many years after 1965, even though the domestic production too, has been going up. This is all because the demand for fertilizers has been increasing after green revolution. Crops of high yielding variety cannot grow properly if regular doses of fertilizers are not applied to them.

2.1.3.3 Irrigation:

Scientific water management is an integral part of the new technology, new varieties of seeds cannot stand with less or excess of water. This means installation of controllable source of water supply is needed. Dependence on rains is not much productive. Had there been no expansion of irrigation facilities in India in the recent past, we would not have experienced the spectacular increase in the agricultural production. It may be noted that increased irrigation facilities have not only enabled the farmers to make use of the new varieties of seeds and the fertilizers but have also resulted in increase in area under multiple cropping. Further irrigation has reduced the risk of crop failure and has therefore, indirectly encouraged the adoption of new variety of crop. It should also be noted that the increased irrigation facilities has resulted in more employment in rural areas. This further adds to the importance of irrigation as an agricultural input.

2.1.3.4 Programme of Multiple Cropping:

Under the new strategy, there is also a programme of multiple cropping. The traditional varieties are long maturing and do not allow multiple cropping. Under the new policy, the use of short duration varieties is supposed to change the cropping pattern so as to introduce multiple cropping patterns. This programme aims at increasing the cropping intensity of land through better utilization of the existing irrigation facilities as well as development of new irrigation potential throughout the country. In 1950, the area sown more than once was about 1.3 crore hectares only. In 1960-61 it was 1.9 crore hectares and in 1970-71, it was 2.5 crore hectares. In 1990-91 this area rose to 4.32 crore hectares.

2.1.3.5 Provision of Agricultural Credit:

The provision of cheap agricultural credit facilities has encouraged the adoption of new agricultural strategy. Farmers need credit for the purchase of new seeds, better implements, chemical fertilizers, insecticides and for introducing permanent improvement of land. It is necessary in this connection to emphasise that it was the institutional credit

rather than the credit flowing from private money lenders that needed expansion. Accordingly, it is encouraging that co-operative credit institutions such as primary cooperative societies, central cooperative banks and State cooperative banks for short term credit have been progressively established by the government throughout the country. In addition to this, Commercial Banks have been directed by the government to advance loans to farmers so that they may adopt better methods of cultivation. Regional Rural Banks have also been set-up by the Government throughout the country. NABARD has also been established. And this institution progressed considerably.

2.1.3.6 Protective Price Policy:

For the first time in 1967, the government announced its determination to ensure a minimum price for food grains produced through the open market operations conducted by the FCI on behalf of the Government. It was made sure that the prices of agricultural commodities must be reasonably high so as to ensure that not only the farmers are able to meet the expenditure incurred on the purchase of new inputs but are also to reap more profits through the adoption of modern technology. It is thus essential to assure them to certain minimum prices for their products. Agricultural Price Commission was set-up in 1965 to advise the government on price policy for agricultural commodities. The incentive prices have definitely prompted the farmers to set up production by adopting the new agricultural technology.

2.1.3.7 Dryland Farming:

Dryland farming is also being encouraged under the new strategy. Quick maturing varieties are being introduced along with water harvesting practices in areas where irrigation facilities are not available. Here, purpose was to develop seeds of the quality which can flourish and multiply in the dry regions.

2.1.3.8 Development of Infrastructure:

Infrastructure facilities aid in increasing the production. Infact, green revolution has been successful in India because a strong infrastructure for agricultural development has already been built up during the first two five year plans. Important constituents of infrastructure are transport and communication, regular markets, storage and warehousing, agricultural education and training, agriculture extension and administration and power.

2.1.3.9 Plant Protection and Pest Control:

The adoption of new yielding varieties entails a high cost of cultivation and hence a cultivator cannot afford to lose his crop to pests. Biologically, the crops sown through use of new seeds are more prone to disease. The use of fertilizers for the production also increases the susceptibility of these crops to disease. So the use of plant protection measures becomes necessary in order to get the maximum yield from the new seeds. In 1979-80, 50000 tonnes of insecticides and pesticides were produced in India. During the 6th and 7th five year plans, plant protection

measures were strengthened to reduce crop losses and to improve yield of various crops. At present about 62000 tonnes of pesticides are produced in the country. The quantity of pesticides actually used is in higher quantity because pesticides are imported from outside. For example, the consumption of pesticides was of the order of 83000 tonnes in 1993-94.

Self check exercise

- Q.1 What do you mean by HYV seeds?
- Q.2 Infrastructure facilities aid in increasing the production-comment.
- Q.3 What is Dryland farming?
- Q.4 Why new agricultural strategy is called a package programme?

2.1.4 Achievements of New Agricultural Strategy:

The period of 1966 saw substantial increase in foodgrain production especially wheat production. HYVP depended for its success especially on the availability of proper irrigation facilities and various other inputs. Therefore, it could be accepted in only those regions which possesses regular irrigation facilities and only by those farmers who could afford to purchase agricultural inputs. Major achievements of the new strategy are described below:

1. Increase in Production:

As a result of new-agricultural strategy, foodgrains output increased substantially from 81.0 million tonnes in the 5th plan (annual average) and further to 155 million tonnes in 7th plan (annual average). It reached to 176.4 million tonnes in 1990-91. It touched the record level of 192 million tonnes in 1996-97, which further increased to 209 million tonnes in 2000-2001

The production of rice which had increased slowly in early period of the Green Revolution has started picking up of late. The average annual production increased from 35.1 million tonnes in the 3rd plan to 54.5 million tonnes in the 7th plan and further to 65.1 million tonnes in the seventh plan. Now it is greater than 70 million tonnes.

Let us now consider oilseeds. The bulk of the vegetable oil seed production in India is derived from nine cultivated oil seeds namely groundnut, rapeseed/mustard, sesame, safflower, nigerseed, soyabean, sunflower, forming the edible oil group and linseed and castor-seed forming the inedible group. The total production of oil seeds averaged 8.3 million tonnes in the 4th plan and 11.4 million tonnes in the 6th plan. To achieve self sufficiency in oil seeds government launched a series of programmes. These include, National Oil Seeds Development Project (NODP) started in 1985-86 Technology Mission on oilseeds started in 1986. Oilseeds Production Thrust Project (OPTP) launched in 1987-88 to augment the production of four major oilseeds, namely groundnut, rapeseed/Mustard, Soyabean and Sunflower, in 1989-90 the government announced its price policy fixing whole-sale price band for oil. The efforts resulted in significant increase in the production

of oilseeds, which is now 20 million tonnes. These efforts reduced considerably our dependence on imports of foodgrains.

For quite sometime after 1965-66 the production and productivity of wheat rose at a considerable higher rate as compared to the other crops so much that 'green revolution' was often dubbed as 'wheat revolution'. However, the mid or the late seventies mark a definite departure from the trends in the early phase of the green revolution. According to C.H. Hanumantha Rao, there seems to be some improvement in the growth rate of foodgrains output in the decade 1978-79 - 1988-89, when compared with the first decade for the green revolution. Crops such as rice, pulses and oilseeds, whose growth rates in the first decade of green revolution had fallen much below those recorded in the pre-green revolution period, are now sharing higher growth rates. The major inter-crop imbalances in growth-witnessed the early years of the green revolution, are getting redressed to some extent in the recent period.

2. Employment:

The adoption of new technology has also given boost to agricultural employment because of diverse job opportunities created by multiple cropping and shift towards hired workers. Changes in biological inputs such as quality seeds and use of chemical fertilizers have created more demand for labour to look after sowing, weeding and harvesting activities. Double cropping has necessitated more labour. Extra irrigation facilities, especially through tube wells have also created demand for extra labour. Increase in agricultural production has resulted in an impressive development of the agro-based industries. Green revolution has also increased the purchasing power of the rural people. This has created demand for non-traditional commodities resulting in more employment in these industries.

3. Forward and Backward Linkages strengthened:

Even under traditional agriculture the forward linkages of agriculture with industry was always strong, since agriculture supplied many of inputs to industry but green revolution has created a large demand for inputs produced and supplied by industries to agriculture and thus the backward linkages have also become stronger.

4. Market Oriented:

The new technology has made the farmers market oriented. The farmers are largely dependent on the market for supply of inputs for the demand of their output. Increase in production of foodgrains has resulted in the development of markets and the marketed surplus of foodgrains. This surplus indicates as to what extent, the agricultural sector is sparing foodgrains for those who are engaged in non-agricultural pursuits. Under normal circumstances, any increase in this surplus is to be welcomed. Marketed surplus has increased considerably after the green revolution. In this context, Punjab has shown unprecedented results.

Self check exercise

Q.5 What are the achievements of new agricultural strategy?

Q.6 Is new agricultural strategy successful in achieving its targets?

2.1.5 Problems created by the Green Revolution:

Whether the New Agricultural Strategy has brought about a green revolution or not and whether its continuation in this form is desirable, is a debated issue. Dr. M.S. Swaminathan credits the Green Revolution as ending the divorce between intellectual and labour in the cultivation of food crops. According to him, it has generated a climate of confidence in our agriculture capabilities. Further it has solved the food problem, removed our dependence on food imports considerably, brought higher income to many farmers and has given fillip to general economic development through its forward and backward linkages. They contend that the results of new strategy do not justify the term the 'green revolution' for it is neither green nor revolution. It is difficult to reach at a conclusion immediately. There are, however, some observations which stand out clearly. They are as follows:

1. Restricted Coverage:

The 'Green Revolution' is limited in its coverage on three counts. It is limited to a few crops, to irrigated land and a few regions. As for rice, the staple food of the majority of Indians, the revolution has bypassed it. This is because rice is a higher risk crop and its new varieties demand some collective measure in water management, which may not be possible in an individual society like ours. Increase in productivity has been remarkable only with regard to wheat and maize.

2. Green Revolution has further been limited to particular areas. The new varieties have been fruitful for areas with assured irrigation, Rainfed cropping area is not covered by high yielding variety so the true green revolution will come only when the experience of wheat is successfully transmitted to other crops.

3. Disparities in Income (Personal Inequalities):

The institutional framework of India's rural economy has been such that it has always favoured the rich i.e. who matter by virtue of their command over land and other assets. As a result, the green revolution, despite its scale neutral nature has by and large bypassed the small and marginal farmers. The modern technology can be implemented in package form. In this package, a number of inputs are contained. The small farmers cannot afford to acquire all of these inputs. They are also denied agricultural credit facilities because of the smallness of their inputs. They are also denied agricultural credit facilities because of the smallness of these land and their consequent inability to offer securities. As a result the small farmers have been left out of green revolution. The rich farmers on the other hand, have adopted the modern technology and secured large increase in income.

The new strategy is very risk prone. The quick maturing crops require careful handling and supervision from the first to last operation. The small farmer with his

limited staying power has preferred quite often to go in for his safe bet crops that the traditional system of agriculture would offer.

4. Problem of Labour Displacement:

Under the increasing income due to high yielding varieties large farmers are introducing mechanisation even when there is a considerable labour surplus. This really is a timely warning for if a social revolution is not to go bloody, alternative openings for those rendered unemployed must be found. Hunger for land is already threatening the social fabric in the countryside. Mr. M.S. Gurupadaswamy, a former Minister of State for Food and Agriculture, said if new openings for their productive involvement in alternative occupations are not created simultaneously, unemployment or underemployment of agricultural labour might land us in a situation which might become explosive both politically and economically.

5. Growth of Capitalist Farming:

The latest agricultural technology necessitated heavy investment in machinery fertilizers and irrigation which is beyond the capacity of small and marginal farmers. It is the big farmers which have been making investments in installation of pumping sets tube wells, fertilizers and agricultural machinery and has reaped the benefits of the latest research and technology. The new agricultural technology has thus resulted in growth of capitalist farming as well as in the concentration of income in few hands. It has also created a class of gentlemen farmers comprising ex-servicemen, retired civil servants and urban based businessmen, who have adopted agriculture as industry. The exploitative nature of capitalistic farming is well known.

6. Lack of Land Reforms:

The new strategy is only concerned with the promotion of new techniques. If the new techniques have to be differed on all sorts of farms, then a change in the present exploitative insecure land relations is very necessary. Tenants and sharecroppers have no incentive in the adoption of the new technology as long as landlords do not bear the burden of new inputs. The green revolution has made the position of tenants worse. The new strategy has created three kinds of conflict, namely between large and small farmers, between owners and tenant farmers and between employers and labourers on agricultural farms. If things are allowed to work on their own the problem may become formidable.

7. Unproductive Expenditure of Affluent Farmers:

The new agricultural technology has created a class of affluent farmers who spend lavishly upon unproductive activities such as marriages, on birth celebration, festivals or on ornaments. As a consequence of this unproductive expenditure, these rich farmers continue to borrow either from cooperative banks or from land development banks or commercial banks to purchase agriculture inputs from the market. The result is that these institutions are not able to meet the additional credit

requirements of small and marginal farmers who are still at the mercy of the money lenders. If the rich farmers had invested their surplus funds in the purchase of new inputs, these banks would have advanced loans in sufficient amount to small and marginal farmers to enable them to adopt the new agricultural technology more extensively.

Self check exercise

- Q.7 What are the problems originated due to new agricultural technology?
- Q.8 Why is it called that new agricultural technology covered a limited area?
- Q.9 Why is it called that new agricultural technology has increased problems?

2.1.6 Arguments by the Defenders of New Agriculture Strategy

They consider the intensive approach as the only means of working a break through in Indian agriculture in the shortest possible time. The main arguments are as follows:

1. The urgency of solving the food problem requires an approach which yields quick results. The programme provides an immediate remedy.
2. Agricultural inputs like land, water and fertilizer are scarce. There is an optimal quantity of these inputs which must be combined to get the best results out of their use.
3. The traditional technology is well entrenched in farmer's behaviour. The new technology is the only factor which can transform traditional agriculture as results have observed. The HYVP give increasing returns to all scarce inputs.
4. There is a psychological barrier in the adoption of new agricultural practices by tradition ridden farmers. This barrier can be most easily broken by actual demonstration of the profitability of the new practices in farm fields. This requires a selective approach.
5. Concentrated attention on food crops is likely to produce sufficient food grains for domestic consumption and buffer stock. It will save a good deal of foreign exchange besides giving it national self-confidence. It is the first most important step towards self reliance.
6. The selective approach which concentrates on areas of assured rainfall and irrigation is likely to stabilize Indian agriculture much better. The HYV programme is an insurance against the vagaries of monsoon.

2.1.7 Measures of further Revolution

Following measures are considered reasonable to continue green revolution:

1. **HYV Programme:** The programme should be extended to the cash crops like cotton, jute, oilseeds and pulses. The prospects of high yielding varieties depend on improvement in the agronomic practice, technological inputs,

post harvest market technology and their relative spread to the monsoon versus non-monsoon areas.

2. **Multiple Cropping:** For increasing agricultural production it is essential to develop multiple cropping viz short duration varieties of paddy, coarse cereals, oilseeds and vegetable crop rotation should be chosen that the long term productivity of the soil is not affected.
3. **Agricultural Credit:** Expansion of institutional credit facilities by strengthening cooperatives, opening branches of commercial banks and provision of more extension facilities and supply of seeds, fertilizers, implements and pesticides on credit can help the farmers in adopting the new strategy.
4. **Fertilizer Consumption Seeds and Irrigation:** The HYV programme largely depends on high degree of fertilizers consumption. Farmers usually use less than the recommended dosage of fertilizers due to high prices of fertilizers, lack of credit facilities etc. to step up fertilizers consumption, agricultural extension and sales promotion should be intensified. For improving and sustaining the productivity, the maintenance of genetic quality of high yielding seeds is essential. The HYV programme also depends on the availability of adequate irrigated facilities.
5. **Dry Farming Techniques:** So far the new strategy has been implemented in the farming. But it should be extended to dry farming areas also. Research should be intensified to develop suitable technology which may help in successful implementation of HYV programme in dryland farming conditions.
6. **Land Reforms:** Speedy implementation of land reforms is essential for the spread of green revolution.

Self check exercise

Q.10 Which measures are considered reasonable to continue green revolution?

Q.11 How credit can help the farmers in adopting the new strategy?

2.1.8 Summary

The new agricultural strategy of agricultural development is sometimes credited with remarkable success in raising the yield per acre of many crops. Some have chosen to call it 'Green Revolution', known also as the 'Seed Fertilizer Revolution'. The period of 1966 saw substantial increase in foodgrain production especially wheat production. HYVP depended for its success especially on the availability of proper irrigation facilities and various other inputs. Therefore, it could be accepted in only those regions which possess regular irrigation facilities. Marketed surplus has increased considerably after the green revolution. In this context, Punjab has shown unprecedented results. It has generated a climate of confidence in our agriculture capabilities. Further it has solved the food problem,

removed our dependence on food imports considerably, brought higher income to many farmers and has given fillip to general economic development through its forward and backward linkages. On the other hand in the period of 1966 saw substantial increase in foodgrain production especially wheat production. HYVP depended for its success especially on the availability of proper irrigation facilities and various other inputs. Therefore, it could be accepted in only those regions which possess regular irrigation facilities. The new agricultural strategy of agricultural development is sometimes credited with remarkable success in raising the yield per acre of many crops. Some have chosen to call it 'Green Revolution', also known as the 'Seed Fertilizer Revolution' but new agricultural strategy has some problems also so some of the economists contend that the results of new strategy do not justify the term 'green revolution'

2.1.9 Glossary

Linkage	:	connection or relationship
Strategy	:	formation of policy to achieve the targets.
Affluent	:	wealthy or prosperous
Unprecedented	:	extraordinary

2.1.10 Short answer type Questions

- What do you mean by HYVP?
- Why is Green Revolution also called Bio-chemical Revolution?
- What is Multiple Cropping?
- What is Dry Farming?
- What are Bio-fertilizers?
- What are Forward and Backward Linkages?
- What is Capitalistic Form of Agriculture?

2.1.11 long answer type questions

- What are the components of NAS? Critically examine the achievements of green revolution.
- Is the new agricultural strategy labour displacing or labour absorbing? Give reasons.

2.1.12 Suggested Readings

F.R. Franknel	:	India's Green Revolution: Economic Gains and Political Costs.
R.N. Soni	:	Leading Issues in Agricultural Development.
M.S. Randhawa	:	Green Revolution: A Case Study of Punjab.
C.H. Hanumantha Rao	:	Technological Change and Distribution of Gains in Indian Agriculture.

PROBLEMS OF AGRICULTURAL LABOUR & SMALL FARMERS**2.2.1 Introduction****2.2.2 Objectives of lesson****2.2.3 Magnitude of small farmers****2.2.4 Problems of small farmers or small farms****2.2.5 Small farms not conducive to agriculture****2.2.6 Problems of Landless labour****2.2.7 Steps to ameliorate the conditions of the small farmers:****2.2.8 Summary****2.2.9 Glossary****2.2.10 Short answer type Questions****2.2.11 long answer type questions****2.2.12 Suggested Readings****2.2.1 Introduction**

One of the most important characteristics of under-developed countries is over population. Over population in these economies has created many problems and the problem of small farmers, marginal farmers and landless labourers can also be attributed to over population. We know that in the absence of industrialization 70 to 80 percent of the population in developing economies is engaged in agriculture. With every increase in population, pressure on agriculture also increases and this leads to fragmentation and division of land. The average size of holding in India is very low. Small holding constitute a small income as compared to large holding. It can be considered as one of the major source of problems faced by the small farmers. Small holdings mean small amount of income, small savings in the presence of small incomes and investment improvement in production per hectare cannot be achieved.

2.2.2 Objectives of lesson

In this lesson we will discuss problems of agricultural labour & small farmers, causes and remedies.

2.2.3 Magnitude of small farmers

Small holding means a small income as compared to large holding. It can be considered as one of the major source of problems faced by the small farmers. Small holdings mean small amount of income, small savings in the presence of small

incomes and investment improvement in production per hectare cannot be achieved. Small farmer's figure for India shows that in 1976-77, 54.58 percent of the farmers possessed less than one hectare (about 2½ acres) and corresponding figure for the year 1976-77 was 72.64 and corresponding figure for year 1980-81 was 75.5 (say 75 percent). It means 75 percent of the farmers in India possessed less than two hectares of land and very small proportion of farmers (2.44 percent in the year 1976-77 and 2.1 percent in 1980-81) possessed more than 10 hectares of land.

Average size of operational holdings of different categories (in hectares)

Categories of Holding	Size Group	Average Size							
		1976-77	1981-82	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
Marginal	<1 hectare	0.39	0.39	0.39	0.39	0.40	0.40	0.38	0.38
Small	1.00-2.00 hectare	1.42	1.42	1.43	1.43	1.42	1.42	1.38	1.42
Semi-medium	2.00-4.00 hectare	2.78	2.77	2.69	2.76	2.73	2.72	2.68	2.71
Medium	4.00-10.00 hectare	6.04	5.96	5.95	5.90	5.84	5.81	5.74	5.76
Large	10.0 hectare & above	17.54	17.67	17.18	17.29	17.31	17.12	17.08	17.37
All		2.00	1.82	1.83	1.57	1.41	1.33	1.23	1.16

2.2.4 Problems of small farmers or small farms

Small farms are also not very conducive for agriculture because:

1. Small sized farms are not economical or very efficient. All the technical advantages available to large sized farms are not available to small sized farms.
2. Production economies such as use of automatic and sophisticated machines, facilities for the maintenance and repair of implements, adoption of division of labour, better utilization of products and benefits of research and experimentation are available to small sized farms. Khusro observed that holding of less than 5 acres was considered to be too small to constitute either a minimum ploughing unit or a minimum work unit or an income unit and that such holdings are taken to be uneconomic because they do not provide for family employment and bullock employment and do not generate

- surplus over and above farm family requirements.
3. Small farmers cannot borrow at low interest rate and production as well as consumption according to their production as well as consumption needs. The marginal and small farmers are known for their needs. The marginal and small farmers are known for their weak financial position. With the advent of new farm technology, the need for external finance on the part of small farmers has increased considerably. But the small and the marginal farmers are not in a position to borrow even from the co-operative societies, Banks etc. require sufficient security for loans which the small and marginal farmers are unable to arrange. As a result small farmers can be borrow only from the money lenders and landlords and have to pay a high rate of interest.
 4. Small and marginal farmers are not in a position to avail market economies. They buy and sell on small scale and therefore do not get any benefit. Large farmers get preferential treatment in prices and in discounts. Large farmers, when they buy in bulk get price concessions and also before selling can go for grading of commodities. Graded commodities command more price in the market. Small farmers cannot save on account of transportation costs. However, large farmers also save on account of transportation costs.
 5. Large farmers can also reduce cost of production by putting the right man on the right work. To some extent they can go for division of labour. However, such facilities are not available to small farmers.
 6. The cropping pattern of the marginal and small farmers is dominated by the low valued crops. Generally, they do not sow cash crops and go for food crops. They do not produce for market. The small marketable surplus has a direct impact on the earning of the small farmers.
 7. Small farmers cannot guard their crops against natural calamities. They cannot face market uncertainties. Small farmers hesitate to produce most remunerative crops because of their relatively high cost of cultivation and the relatively greater yield uncertainty associated with such crops.
 8. In addition to above problems there are many other problems which the marginal and small farmers face, for example small and marginal farmers cannot find machinery suitable to their farms. When they hire machinery from the private agencies they have to pay high charges. Modern inputs like fertilizers, insecticides, improved seeds; hybrid seeds etc. are not available to the small farmers. Small farmers do not know or fail to adopt new techniques of cultivation. For example, they fail to go in for crop rotation, for manuring, sowing in lines etc.

Self check exercise

- Q.1 What are the problems of small farmers?
- Q.2 Why farmers do not find machinery suitable to their farms?

2.2.5 Small farms not conducive to agriculture

Generally, following arguments are given by economists against small farms:

- (1) Small farms are not very conducive to agricultural development. Various development activities like digging of wells or installing a tube well, drainage, fencing etc. are not very economical on small farmers. Even some improved crop practices like crop rotation etc. can be adopted.
- (2) Large farms enjoy some economies of scale like managerial, technical, financial marketing. Large farms have more saving and therefore can invest for improvement in production. They can also get financial assistance from outside on more favourable terms. The cost of marketing functionaries can be avoided.
- (3) Small farms do not generate marketable surplus which is most essential for the economic development of the economy.
- (4) Large farms produce for the market and a considerable portion of land on such farms is devoted to the production of industrial raw material like cotton, sugarcane, oil seeds, jute, tea, rubber etc. whereas small farms are devoted for the production of foodgrains so as to satisfy consumption needs of the farming.

Farms studies in India show different results and therefore economists differ in their observation. Some are of the view that small farms are more efficient and others are of the view that large farms are essential for the backward agriculture in under-developed countries, Sadhu and Singh, express their view in the following words the small size of holdings in India has its economic and social implications. On the economic side, the small size of holding has come as a major hurdle in the way of introducing new and improved agricultural techniques. Smallness of the holding, on the one hand, defers the use of mechanisation and on the other, does not allow the use of new varieties of seeds. Chemical fertilizers and other modern inputs due to lack of purchasing power in the hands of the small farmer. It is probably due to this main reason that Indian agriculture could not make much headway in introducing new agriculture strategy and still continues to be in the most backward state. The new agricultural technology is well accepted and adopted by the owners of large holding, leading to an increase in their incomes many times. On the other hand, small and tiny farmers have continued with their subsistence type farming. This has created a wide gulf between the income levels of large farmers and small farmers giving rise to serious social implications. Very small or tiny holdings have also been responsible for increasing the army of agricultural labourers. Those small holders of land who could not get subsistence from their respective farm holdings have either to sell or lease out their holdings to others and join either the army of farm labourers or migrate to urban areas in search of some other work.

The above observations of Sadhu and Singh make very clear the economic

and social implications of problems of small and marginal farmers.

Self check exercise

Q.3 Why small farms are not conducive to agriculture?

Q.4 Why large farms are conducive to agriculture?

2.2.6 Problems of Landless labour

Problems of landless labour are quite different from the small and marginal farmers. Landless labourers can be divided into following categories:

- (i) Landless labourers who are attached to the landlords are not free to work in the farms of others and therefore, cannot reap the benefits of competition. However, there is one advantage i.e. such labourers get work for the whole year and work is almost guaranteed and they have not to move from place to place for the search of work. Such labourers do not get wages according to work. Such workers are sometimes called 'bonded labour'.
- (ii) Landless labourers who are personally independent but who work exclusively for others. These labourers work on farms as casual worker. Such workers generally belong to the weaker sections of the society. They do not command social status. Such labourers always remain under debt. They do not get regular work. They supplement their income by rearing milch cattles. Their economic condition is quite miserable.
- (iii) Marginal or small farmers; They do not have sufficient land of their own. Whatever land they possess, they lease out to others and work as labourers on the lands of others. Under the impact of new technology small farmers have forced circumstances to sell their lands and become landless farmers/labourers.

To solve the problems of landless labourers governments in under-developed countries initiated special work projects in the rural areas so as to provide them work. Government also gives loan to them for poultry farming, dairy farming, bee keeping, sericulture etc.

Self check exercise

Q.5 What are the problems of agricultural labourers?

Q.6 What is the advantage or disadvantage of Landless labourers who are attached to the landlords?

2.2.7 Steps to ameliorate the conditions of the small farmers:

1. Though it is not possible to increase the size of the small farm, the impact of many problems that arise due to a small farm size can be reduced if cooperative joint farming of small farms is encouraged.
2. While enumerating the problems caused by the small size of the farms we also referred to the underutilization of tube wells when setup by the small farmers. So there is a need for optimal use of the tube wells. There is a huge wastage of the resources when the tube wells are used below capacity.
3. It has been noticed that marketable surplus has now emerged even on small farms in those cases where the new technology has been adopted. A large

farmer can reap commercial economies of scale while marketing his crops but this is not so with the small farmers. The small farmers should be keen to join a cooperative marketing society.

4. Some of the problems faced by the small farmers arise because of their tight financial conditions. To meet these problems there is a need for rationalisation of the system of financial aid to small farmers. They have to be freed from the clutches of the money lenders and commission agents. More of the institutional finance needs to be diverted to the small farmers.
5. Communication gap between the extension agency and the small farmer is another problem that needs looking into. A large percentage of the small farmers do not even know about the recommended doses of fertilisers, improve crop practices, so necessary information about the new technology should be given to the small farmers.
6. Supply of machinery on hire, to the small farmers, is another important measure that can be taken to help the small farmers.
7. Some special administrative measures should be called for ensuring the timely supply of good quality fertilisers, insecticides and seeds to the small farmers.
8. It is not only the timely supply of inputs, like fertilisers, power, irrigation, credit etc. but it should also be provided on subsidised prices.
9. There is a need to provide off farm jobs to the small farmers.
10. Investment in human capital in the form of health care and education for the small farmers is another requirement for improving the lot of these farmers. Their improved health and skills will help in increasing the productivity on their farms.
11. The cropping pattern on the small farms should undergo a change. Instead of producing, on their farms, those crops whose productivity is higher, the small farmers may be advised to produce those crops in which value added content is higher.
12. The working of the District Rural Development Agency, which has been setup to help the small and marginal farmers, should be streamlined.
13. Small farmers should be provided access to agri-business. It should be ensured that they are able to sell vegetables, fruit, milk and other perishable agricultural commodities to factories engaged in agro processing activities.
14. Wherever the small farmers are cultivating the land as tenants, they should be assured reasonable security of tenure as well as fare rent. This will help them in making an optimum use of their resources.

Self check exercise

- Q.7 Which type of steps should be taken to improve the position of small farmers?
Q.8 How assured reasonable security of tenure as well as fare rent will be

helpful to small farmer's and agricultural labourers?

2.2.8 Summary

Existence of small farms in over populated and under developed economies is a common phenomenon. Excessive population, depending mainly on agriculture, has resulted in the creation of small farms in such economies. This is particular so when size of the operational holding is taken into consideration. The small holding, obviously mean a small income as compared with that of the large farmers. The small size of the farm give rise to various hindrances which, in turn, further reduce the income generated on small farms. The appearance of such obstacles is quite disturbing especially at a time when the traditional agriculture is under a process of transformation. Abnormally low income will prevent the use of modern inputs which are necessary for increasing the agricultural output on small farms.

In the presence of growing population and less development of industrial and other factors, where the increasing labour can be engaged, demand for land for cultivation the only sector where employment can be provided will continue to increase. Supply of land, being fixed cannot be increased. In the presence of such a situation, how this problem can be solved? Many suggestions have been made by the economists but the solution lies in the development of the economy. However, in the short period the problem can be solved through the development of joint co operative societies where the land of small and marginal farmers can be pooled together so as to reap economies of large scale. In addition to this the problem of further division of land can be avoided through the development of cottage industries in the rural areas.

2.2.9 Glossary

- Obstacle : problem or difficulty.
Agri-business: businesses which are directly dependent on agriculture.
Optimal : Best possible

2.2.10 Short answer type Questions

- Q. What do you mean by small farmers?
Q. What are the main problems of the small farmers?:
Q. What are the main problems of the agricultural labourers?
Q. What should be the steps taken to solve these problems?

2.2.11 long answer type questions

- Q. Explain the problems of the small farmers?:
Q. What do you suggest to solve the problems of the small farmers?:

2.2.12 Suggested Readings

- R.N. Soni : Leading Issues in Agricultural Development.
Khusro, A.M. : An Approach to Farm Planning Among Small Farmers, Seminar Series IV, Indian Society of Agricultural Economics.

AGRICULTURAL CREDIT**2.3.1 Introduction:****2.3.2 Objectives of the lesson****2.3.3 Difference of agriculture credit from the other types of credit****2.3.4 Classification of Agricultural Credit**

2.3.4.1 purpose-wise credit

2.3.4.2 period-wise credit

2.3.4.3 security-wise credit

2.3.4.4 creditor-wise credit

2.3.5 Sources of Agricultural Credit

2.3.5.1 Non-institutional sources.

2.3.5.2 Institutional sources

2.3.6 National Bank for Agriculture and Rural Development (NABARD)**2.3.7 Lead Bank Scheme of Commercial Banks:****2.3.8 Summary****2.3.9 Glossary****2.3.10 Short answer type Questions****2.3.11 long answer type questions****2.3.12 Suggested Readings****2.3.1 Introduction:**

Providing appropriate finance for agricultural operations is like oiling agriculture to make its wheels move swiftly and smoothly. Developing countries which are jam packed with small farmers who have almost no resources. Making available credit and ensuring its productive use should therefore form the basic plans of any credit policy to foster progressive rural economy.

Agriculture is an important industry, and like other industries, requires capital. Due to the peculiarities of agriculture, especially its uncertainties, low returns, high rate of rent and limited scope of employment, large number of cultivators cannot manage the needed finance without recourse to borrowing. Farm production technology is sophisticated in nature. Scientific crop planning has created an unprecedented upsurge in the demand for various types of inputs of productions such as high yielding varieties of seeds, fertilizers, pesticides, irrigation, tractors etc. This in turn has created heavy demand for credit. Professor J.D. Black has very rightly stated, "If we all are concerned about increasing total agriculture output in the shorter time, we must provide

credit first and foremost. This will enable them to buy more equipments, more seeds and fertilizers."

2.3.2 Objectives of the lesson

In this lesson we will discuss, why there is a need of credit, from where do farmers take loans, What government is doing to provide cheap and easy credit to farmers.

2.3.3 Difference of agriculture credit from the other types of credit

The difference of agriculture credit from the other types of credit warrants a special study of agricultural credit. A brief introduction of these characteristics is given below:

1. The complex nature of agriculture (size of holdings forms of land tenure, methods of production, complex relations between farmers and middlemen, manufacturers and consumers) makes the financing of it relatively more difficult than the financing of industry and trade.
2. The nature of agriculture is such that it does not work on corporate basis. Farmers are mostly individualistic. This is an obstacle for the farmers to obtain cheap credit.
3. Uncertainty in agriculture which is present throughout the productive process also affects the capacity of the farmer to obtain credit. Thus, credit agencies are unwilling to lend money to agriculturists except at very high rate of interest.
4. The absence of tangible security except land and the tendency to borrow for production rather than for marketing are two important reasons which prevent institutions particularly commercial banks from lending to farmers.
5. Farmers particularly the small farmers need credit not only for production purposes but also for consumption requirements. Traditionally the farmers of under-developed countries are accustomed to spend beyond their means on social and religious ceremonies etc. Litigation is another important requirement for finance.

Self check exercise

Q.1 How agricultural credit is different from other credits?

Q.2 Does uncertainty in agriculture affect the capacity of the farmer to obtain credit?

24.4 Classification of Agricultural Credit

Agricultural credit may be classified purpose-wise, period-wise, security-wise and creditor-wise. A brief introduction of these classifications is given below:

2.3.4.1 Purpose for which credit is required

Purpose-wise every farmer needs four types credit viz:

- (a) Development Credit
- (b) Production Credit

- (c) Marketing Credit
- (d) Consumption Credit

Development credit is required by the farmer to make investments on the farm which include purchase of land, implements, farm machinery, development of irrigation, construction of farm structures such as cattle sheds, fencing, farm godowns, development of horticulture, development of dairy etc. Production credit is required by the farmer for crop production. This is needed to purchase seeds, fertilizers, manure, pesticides, insecticides and other important variable inputs besides paying wages to the hired labourers. Marketing credit is credit which is required to market the agriculture produce. This type of credit is to store the produce, bring the produce in the market and so on.

Because of the uncertain nature of the agriculture, consumption credit is also a need of the farmer. He may also borrow for social functions. Litigation, too, may force the farmer to borrow.

2.3.4.2 Length of the Period for which Credit is required

The expenses which must be incurred in advance can be divided roughly into three categories, viz. long period, medium period and short period credit. There is no hard and fast rule of these types of credit. But, traditionally long term credit is generally spread over a period ranging from 5 years to 20 years. Intermediate term credit is meant for a period from 2 to 5 years. The credit required for current consumption and production for a period ranging from 3 months to about 18 months i.e. between one crop and the other comes under the short term category.

Farmers need funds for short periods for hiring labour, for buying seeds and fertilizers and for holding stocks of the finished product until they can be sold. Short period loans are given for seasonal agricultural operations and are normally repaid after the harvest. The current expenditure on the farm is purchase of seed, purchase of manure, purchase of fodder, payment of wages, payment of land revenue, rent, maintenance of irrigation resources, repairs and maintenance of implements and so on.

Intermediate credit is normally required for a period of two to five years for the purchase of live stock, agricultural implements for plantation, irrigation, minor land improvements etc.

Long period credit is mostly required by the farmers to acquire agents of production which help in the productive process over a long period of time. Long period expenditure is purchase of land, reclamation of land, digging and repair of wells, construction of farm houses, purchase of implements, machinery and transport equipments and so on.

2.3.4.3 Security against which loan is granted

Loans on the basis of security against which they are granted can be divided into three categories:

- (I) Farm mortgage credit, which is secured against land by means of mortgage of land.
- (II) Collateral credit which is given to the farmer on the security of live-stock or crops warehouse receipts.
- (III) The personal credit, which is generally based on the character and repaying capacity of the borrower and not on any tangible asset.

The kind of the security which will be accepted would generally depend upon the length of the period for which the loans are required. As a general rule, the long term loans are usually advanced on the security of land, while short term and medium term loans are made on personal and collateral security respectively.

2.3.4.4 Creditor-wise Credit

The classification of credit, according to creditor is private and institutional credit. Private credit is given by money-lender, indigenous bankers, traders, landlords, friends, relatives etc. This kind of credit is generally exploitative in nature, given for both productive and non-productive purposes. Institutional credit is given by the institutions set up by government. It is governed by proper code of conduct and is intended to be conducive for development.

Self check exercise

- Q.3 Explain the purposes for which credit is required?
- Q.4 Write short notes on following:
 - Length of the Period for which Credit is required
 - Security against which loan is granted
 - Creditor-wise Credit

2.3.5 Sources of Agricultural Credit

Broadly, there are two sources of credit available to the farmers-institutional and non-institutional private.

Non-institutional private sources include money lenders, traders, commission agents, relatives and landlords.

Institutional sources include Government and Co-operatives, Commercial Banks including Regional Rural Banks.

2.3.5.1 Non-institutional Sources

(a) Money-lenders

Among the private sources of credit, money-lenders contribute the major share. All India Rural Credit Survey undertaken in 1951, the money-tenders accounted for nearly 70% of all rural credit. In 1981, they accounted for 16% of the rural credit. This fact shows clearly that money-lenders are losing ground to institutional agencies but still it is significant. The dominance of money-lender is due to provision of productive and non-productive credit and also for short-term and long-term requirements of the farmers, easy accessible, simple and elastic business. Thus, borrowing from money-lenders is convenient to the farmers due to many reasons.

But their activities are full of short comings. They obtain bonds and promissory

notes from their debtors on false pretences and enter in them sums larger than actually lent. They charge high rate of interest, often 30% and over. The money-lenders have been responsible for many of the ills of Indian agriculture because their main interest has been to exploit the farmers for their benefit and grab their land. Unless their activities are controlled and alternative sources of credit provided to the farmers, it would be difficult to improve the condition of the peasants.

(b) Landlords and Others

A sizeable part of finance comes from traders and commission agents. They supply funds to farmers for productive purposes much before the maturity of crop. They force the farmers to sell their produce at low prices and they charge a heavy commission for themselves. The lending of traders and commission agents is also at exorbitant rates of interest and also has other undesirable effects.

Farmers also borrow from their relatives to overcome their temporary difficulties. These loans are contracted in an informal manner, they carry low or no interest.

Landlords also lend to small farmers and tenants. They also involve in the exploitative practices. Often the small farmers are cheated and their lands are appropriated. The landless labourers are forced to become bonded slaves.

Thus, private sources of credit are inflicted with serious defects such as use of credit for unproductive purposes, high rates of interest, difficulty of small farmers to raise credit because of their low credit-worthiness etc.

2.3.5.2 Institutional Sources

The need of the institutional credit arises because of the weakness of inadequacy of private agencies to supply credit to farmers. Institutional credit is not exploitative and the basic motive is always to help the farmer to raise his productivity and maximize his income. The rate of interest is not only relatively low but can be different for different groups of farmers and for different purposes. Institutions also make a clear distinction between short-term and long-term credit requirements and give loans accordingly. Here we discuss the major institutions:

(1) Co-operative Credit Societies:

The co-operative form of organisations are considered best for providing credit to farmers especially small and marginal. In 1954, the Rural Credit Survey Committee stated, "Today, more than ever before, there is every reason for an institutional system of rural credit to be based on a co-operative association in the village."

The co-operative organisation satisfies the basic condition of proximity as the co-operative societies can have intimate knowledge of the character and abilities of their members. The societies can also supervise the use of credit so that it is invested in improving the productivity of land. Further, the credit provided by co-operative societies is bound to be cheap due to their low administrative cost. The credit provided by these societies is neither too rigid nor too elastic and does not

hamper the borrower stability and productive capacity.

Since 1951, the co-operative credit movement has started helping the farmers in a big way. There were about 88,000 Primary Agricultural Credit Societies (PACS) providing short term loans for Rs. 9970 crores during 1995-96. At the district and state level the central and state co-operatives. State co-operatives provide funds to central and central co-operatives to primary agricultural co-operative societies. The active primary co-operative societies cover over 86% of the villages and account for 36% of rural population. Now, credit provided by the co-operatives is estimated to be around 33% of the total credit needs for agriculture as compared with only 3% in 1951-52. In 1993-94 nearly 80,000 PACS of India provided Rs. 6461 crore as short term and medium term loans to farmers. In 2006-07, the same loan has increased to Rs. 42,480 crore, which was financed by co-operative banks. In 2016-17, co-operative accounted for 13.4 percent of institutional credit provided to agriculture (Rs. 1,42,800 crore out of Rs. 10,65,800 crore)

In spite of its plus points, co-operative credit is not far from defects. Working of co-operative credit societies in many countries have pointed out the following defects in this type of institutional credit:

- I. The tendency of co-operative credit has been to flow mainly towards larger cultivators.
- II. The orientation of co-operative credit to production needs has, by and large, been inadequate.
- III. Co-operative credit system has given rise to increasing overdues from year to year.
- IV. In many places, the working of the co-operative has been hopelessly watched by unscrupulous and dishonest farmers, thus denying the benefits of co-operation to the really needy farmers.
- V. Co-ordination between the authorities and agencies has generally been inadequate.

(2) Land Development Banks

The long-term credit needs of the agricultural sector are met by the Land Development Banks, which provide long-term credit against the mortgage of lands. The loans from these banks are relatively cheap and are spread over a long period of 15 to 20 years. The need to start these banks was felt because:

- I. the primary co-operative societies cannot provide long-term loans to the farmers as they themselves draw their resources from central co-operative banks for short and medium period.
- II. the provision of loan for long period against the security of land requires expert assistance for valuation, title deeds etc. which the primary co-operative societies do not possess. The loans provided by these banks are at fairly low rates of interest.

Though land development banks have been making considerable progress in recent years in this country, they have not really contributed much to the

financial needs of the farmers. In most areas small farmers are not even aware of the existence as well as the usefulness of land development banks. The number of state land development banks increased from 5 in 1950-51 to 20 in 1995 while that of primary banks increased from 286 to 2970 during the same period. But nearly 70% of land development banks are located in South Indian States of Tamil Nadu, Andhra Pradesh and Karnataka. The amount of loans sanctioned annually increased from Rs. 3 crores to Rs. 2800 crores between 1950-51 and 1995-96. Big landlords have taken advantage from these banks and by and large, small peasants have not benefited from them. In 1997, these banks advanced loan worth Rs. 1,744 crore.

(3) Commercial Banks

Role of commercial banks in financing agriculture is becoming significant, though in most of the developing agricultural economies these have entered this field recently. Earlier commercial banks had confined their operations to urban areas, receiving deposits from the urban public and financing trade and industry in urban areas. Recently many popular governments have encouraged these banks to lend farmers. In India, before their nationalisation in 1969, they were not concerned with provision of short term and medium term credit for agricultural purposes. The uncertain character of Indian agriculture, lack of proper accounting of agricultural transactions, small amount of individual loans, inadequate security of loans, difficulty of collection from farmers, were the some of the factors which prevented the commercial banks from taking interest in agricultural finance. All these changed with the nationalisation of banks in 1969.

Commercial banks are extending financial support to agriculture sector both directly and indirectly. Direct finance is extended for agriculture operations for short and medium periods. Indirect finance to farmers is made through providing advances for distribution of fertilizers other inputs etc., and also through financing primary agricultural credit societies. Credit needs of service units providing services for warehousing, processing, marketing, transporting etc. from the bank's credit for infrastructure. The bank's finance the operations of Food Corporation of India, the State Governments and their agencies for food procurement.

Bank credit, the cost of which is known, and which allows the borrower some freedom to use the loan as he thinks best, is theoretically a much more business like method of borrowing. Loans are made on the manager's assessment of the credit worthiness of the borrower. Farmers of good standing, therefore, find little difficulty in obtaining credit from banks. But most often bank manager may wish to have some kind of collateral security.

It is mandatory for Indian commercial banks to extend a certain part of their total lending to the agricultural sector. Advances extended by scheduled commercial banks totalled Rs. 44 crores in June 1969. During 1995-96, commercial banks extended agricultural credit amounting to Rs. 10,580 crores. The share of commercial banks in total institutional credit to agriculture was 13.5 percent of

total bank credit but in 2006-07, it is 69 percent. In 2016-17, banks accounted for 75 percent of institutional credit provided to agriculture (7,99,800 crore rupees out of 10,65,800 crore rupees).

(4) Regional Rural Banks

A working group which was set up by the RBI to assess the extent of requirement of rural credit, pointed out that inspite of the commendable performance of commercial banks in extending direct credit to the agriculture, it was not more than 6% of total commercial credit and accounted for nearly 2/3 of total agricultural credit in 1975. It was also brought to notice that the benefits of co-operatives have not been extended to small and marginal farmers. It is for this reason Regional Rural Banks were set up in 1975 specifically to give direct loans and advances to small and marginal farmers, agricultural labourers, rural artisans and others of small means. The loans are given for productive purposes. There are 196 RRBs which have been lending around Rs. 5500 crores annually by way of loans to rural people. Over 90% of the loans of RRBs are given to the weaker sections in rural areas. In 2006-07 the RRBs have disbursed agriculture credit of Rs 20,435 crores which is 10.5 percent total credit to agriculture. In 2016-17, RRB' accounted for 11.6 percent of institutional credit provided to agriculture (Rs. 1,23,200 crore out of Rs. 10,65,800 crore)

Mostly, these banks grant loans for productive purposes but a small proportion can also be earmarked for consumption purposes, like education or medical expenses. These banks are sponsored by commercial banks. A recent survey says that the profitability of the RRBs has been going down. There is overstaffing and a huge amount of over dues. More than 80% of these banks are suffering losses.

Self check exercise

Q.5 What are the main sources of agricultural credit?

Q.6 Why people prefer to take loans from non-institutional sources?

2.3.6 National Bank for Agriculture and Rural Development (NABARD):

In 1981, a committee called the Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development (CRAFICARD) recommended that a new apex bank called National Bank for Agriculture and Rural Development, be set up providing undivided attention to agriculture. Accordingly NABARD was set up by Government on July 12, 1982 with an authorised capital of Rs. 500 crore and a paid up capital of Rs. 100 crore. The capital was contributed by government of India and Reserve Bank of India. Since its inception, RBI, itself was playing this role.

Following are the main functions of NABARD:

This bank has a dual role to play as an apex institution and a refinance institution. It has inherited its apex role from RBI, at the same time, national bank has taken over the functions of Agricultural Refinance and Development Corporation (ARDC) and thus provides refinance facilities to all banks and financial institutions

lending to agriculture and rural development.

- (i) This bank acts as an apex body to look after the credit requirements of the rural sectors.
- (ii) To oversee the functioning of co-operative credit through its agricultural credit department.
- (iii) To provide long term finance to land development banks, co-operative banks, commercial banks and regional rural banks.
- (iv) To extend short term credit to agriculturists, rural small scale and cottage industries, rural handicrafts and for other economic activities for promoting integrated rural development.
- (v) To provide loans (like RBI) to the state governments for agricultural development.
- (vi) To maintain and strengthen a research and development fund to be used for promoting research in agricultural development.

Working of NABARD:

This bank is performing the various functions assumed by it smoothly and efficiently. It sanctioned short term credit limits worth Rs. 3950 crores during 1993-94 for financing seasonal agricultural operations at the concessional rate of 3%. The bank has attempted to ensure the flow of credit to weaker sections of the society and made it obligatory for banks to disburse a specified percentage of short term loans to small and marginal farmers and other economically weaker sections. With the setting up of NABARD, the institutional source of rural credit has been sufficiently strengthened. NABARD has been paying special attention to the strengthening of institutions, extending credit in less developed and under banked areas. It has started playing an effective role in revamping the co-operative credit operation 1982-83, NABARD sanctioned 4957 schemes involving a commitment of Rs. 1019 crores. These schemes relate to minor irrigation, land development, farm mechanisation, poultry, dairying, sheep breeding etc. Such types of schemes were formerly financed by ARDC. 1986-87 (NABARD) it started a pilot project for strengthening credit delivery system in 16 selected districts. An easy disbursement and proper recovery of loans is the main stay of this scheme. The government has established a Rural Infrastructural Development fund (RIDF) within NABARD from April 1995. In January 2006, government announced the package for revival of short-term Rural Cooperative Credit structure involving financial assistance of Rs. 13,596 crores. Budget allocation for RIDF for the year 2015-16 was kept at Rs. 25,000 crore.

2.3.7 Lead Bank Scheme of Commercial Banks:

With the nationalization of 14 banks in 1969, the government took the initiative of extending the banking system to rural areas and was looking for a scheme of rapid branch expansion. The Lead Bank Scheme adopted in 1969, under this scheme all the nationalized banks and some private sector banks were allotted specific districts and were asked to play the 'Lead Role'. The allotment of districts of various banks was based on such criteria as the size of the bank, the adequacy of its resources for handling the

volume of work contiguity of districts, the regional orientation of banks, the desirability of each state to have more than one lead bank operating in the territory and to the extent possible for each bank to operate in more than one state. This scheme is expected not only to provide more banking facilities to agriculture and other priority sectors in the district but also help in its overall development. Lead Bank has a district-wise consultative committee consisting of the representatives of (i) State Government (ii) Scheduled banks and (iii) other financial institutions working in the district. The consultative committee decides about the various financial schemes pertaining to agriculture and other priority sectors.

Recommendations of the Agricultural Credit Review Committee

RBI, appointed the Agricultural Credit Review Committee under the Chairmanship of A.M. Khusro to go into the entire situation of rural credit. The committee submitted its report in August 1989. Major recommendations of the committee are as follows:

1. Regional Rural Banks failed to provide to target groups and have no place in the country's rural credit system and they should be merged with the sponsor bank.
2. There should be two categories of rates of interest for the borrowers in the agriculture sector. Small and marginal farmers should be provided funds at concessional rates and rest of the borrowers at higher rates of interest subject to the ceiling of 15.5% which is the existing maximum.
3. This committee has recommended the setting up of the National Co-operative Bank of India. In the absence of an apex bank at the national level for the credit co-operatives, the co-operative credit structure has not been able to optimise its services.
4. The committee has recommended the setting up of an Agricultural and Rural Infrastructure Development Corporation of each of three eastern regional states (West Bengal, Bihar & Orissa) and one for north eastern region.
5. The committee suggested that a common legal framework covering co-operatives and commercial banks for recovery of dues for the country as a whole should be formulated.
6. Each village is allotted to a commercial bank branch under the Service Area Approach. The committee suggests that each block should be allotted to a bank which has the largest presence in the block through its branches. This would reduce the cost of supervision, improve quality of monitoring and be beneficial to the customers.

The committee has given valuable recommendations to improve the structure of rural credit. The Report of the Committee on Financial System (1991) also gave suggestions regarding agricultural credit. It advocated advancement of concessional loans only to small and marginal farmers. It also recommended that priority sector be redefined and credit should not exceed 10% of total bank credit. This however, was not agreed to by our leaders.

Self check exercise

Q.7 Write a short note on the following:

1. NABARD
2. Lead Bank Scheme of Commercial Banks

2.3.8 Summary

In poor countries, agricultural credit assumes even more importance than rich countries. Farmer's limited ability to save does not allow him to finance his pursuits and raise better production from his farm. Agriculture credit through institutional channels is the only way of break agriculture stagnation in such situations. Private funding agencies play a limited role keeping in view the larger public interest. Agricultural credit may be classified purpose-wise, period-wise, security-wise and creditor-wise. There are two sources of credit available to the farmers-institutional and non-institutional private. Non-institutional private sources include money lenders, traders, commission agents, relatives and landlords. Institutional sources include Government and Co-operatives, Commercial Banks including Regional Rural Banks. Private sources of credit are inflicted with serious defects such as use of credit for unproductive purposes, high rates of interest, difficulty of small farmers to raise credit because of their low credit-worthiness etc. even then farmers borrow from non-institutional sources due to simple and less time consuming procedures.

2.3.9 Glossary

Recommendation	:	proposal or suggestions
Institutional credit	:	loans are provided from some institution, basically government.
Nationalization	:	when something comes under the control of government.
Over dues	:	when loans are not repaid.

2.3.10 Short answer type Questions

Write notes on:

- (a) Lead Bank Scheme.
- (b) Agricultural Credit Review Committee, 1989.
- (c) NABARD and its functions.
- (d) Structure of Co-operative Credit in India.

2.3.11 long answer type questions

- Q. What is the importance of Agricultural Credit? Why do we study Agricultural Credit separately?
- Q. What are the sources of Agricultural Credit? Explain the institutional sources in detail.

2.3.12 Suggested Readings

Dutt and Sundaram	:	Indian Economy
Mishra and Puri	:	Indian Economy
R.N.Soni	:	Leading issues in agricultural economics.

RURAL UNEMPLOYMENT

- 2.4.1 Introduction**
- 2.4.2 objectives of the lesson**
- 2.4.3 Types of rural unemployment**
- 2.4.4 Magnitude of rural unemployment:**
- 2.4.5 Causes of rural unemployment**
- 2.4.6 Remedies:**
- 2.4.7 Specific Steps taken by Government**
- 2.4.8 Summary**
- 2.4.9 Glossary**
- 2.4.10 Short answer type Questions**
- 2.4.11 long answer type questions**
- 2.4.12 Suggested Readings**

2.4.1 Introduction

Unemployment is almost a universal feature. Only the extent and causes vary from country to country. Lord Keynes diagnosed unemployment in advanced economies to be the result of a deficiency of effective demand. But in under-developed economies like India it is not the result of deficiency of effective demand in the Keynesian sense, but a consequence of shortage of capital equipment or other complementary resources.

In India, there has always been a serious degree of unemployment as well as of under-employment and it has constituted one of the most serious problems.

2.4.2 objectives of the lesson

In this lesson we will discuss types of unemployment, magnitude of unemployment quaries and steps taken by govt. to uproot this problem.

2.4.3 Types of rural unemployment

It is a well-known fact that unemployment is found in its severest form in rural India. It takes three forms, viz, (i) open unemployment, (ii) under-employment, and (iii) disguised unemployment. In open unemployment, it is possible to identify the people who are without work. In addition to the open unemployment, under-employment of the labour force also prevails in an under-developed country. This type of unemployment can also be identified as a situation in which a person gets some work during some days, weeks or months of a year, but not regularly throughout the year. This type of unemployment, also known as seasonal unemployment, is caused largely by natural circumstances. The period of sensational unemployment

in India varies from State to State, depending upon the methods of farming, nature of soil and possibility of multiple cropping. Agricultural labour falling in this category comes mostly from economically and socially backward classes. They cannot move out of agriculture to work elsewhere because of illiteracy, poverty and poor health.

In disguised unemployment, it is difficult to identify an unemployed person. According to the U.N. Committee of Experts, "The disguisedly unemployed are those persons who work on their own account and who are too numerous relatively to resources with which they work that if a number of them were withdrawn to work in other sectors of the economy, the total output of the sector from which they were withdrawn would not be diminished even though no significant reorganisation occurred in this sector." According to Prof. Nurkse, the marginal productivity of such workers is zero or even negative which means that there is a possibility of an increase in output if these people (with negative productivity) are removed from agriculture. This type of unemployment in rural India is prevalent among small and marginal farmers. These farmers are characterised by lower levels of income, higher incidence of indebtedness, rurality and illiteracy, fewer assets and concentration in traditional activities.

Self check exercise

Q.1 What do you mean by unemployment?

Q.2 What are the main types of rural unemployment?

2.4.4 Magnitude of Rural Unemployment:

The genesis of the problem of rural unemployment can be rightly understood only in the light of its extent and magnitude. Various Commissions and Committees appointed by Government of India have estimated rural unemployment from time to time. It is commonly accepted as well as also the actual condition that unemployment is increasing in India.

According to Agricultural Labour Enquiry Committee, the level of rural unemployment was 28 lakh in the beginning of 2nd Five-Year Plan. During this plan the addition to labour force was 72.3 lakh and the number of jobs created during this period was 15 lakh. Thus total rural unemployment at the end of second Five-Year Plan worked out to be 85.3 lakh. At the end of Third Five-Year Plan the backlog of rural unemployment was 160.3 lakh. The Committee of Experts on unemployment under the Chairmanship of B. Bhagwati in its report submitted to the Government in May 1973, observed: On the basis of the data, the likely number of unemployed in 1971 may be reasonably taken as 18.7 million including 9 million who are without any job and 9.7 million who work for less than 14 hours per week may be treated at par with the unemployed. Out of this, 16.1 million (86 per cent of total) unemployed are in the rural areas. Unemployed as a percentage of total labour force worked out to be 10.9 percent for the rural areas.

Further according to NSS data (19th round), the Committee on Unemployment

has estimated that 8.5 million persons in rural areas were working less than 14 hours per week. They were so severely under-employed that the committee preferred to treat them as 'nearly unemployed'. Besides this 15.9 percent of rural labour force were working less than 28 hours per week. In 1977, the National Sample Survey Organisation released three other types of estimates about rural unemployment in India. i.e. (i) Usual Status unemployment ; It covered all those workers who were in search of regular employment but did not get work throughout the year for which the survey was conducted, (ii) Current weekly Status unemployment (weekly unemployment) and (iii) Daily status unemployment (persons/day unemployment rate).

The estimates for rural unemployment for the year 1972-73 were made. The chronic unemployment and weekly unemployment were 2 million and 7.8 million persons respectively. The rural labour force was estimated to be 200 million in March, 1973. The rates of chronic unemployment and weekly unemployment thus worked out to be 1.0 percent and 3.9 percent in 1972-73. The rates of daily status unemployment was as high as 8 percent.

The Sixth Five-Year Plan prepared by Janata Government put the volume of rural unemployment for the year 1978 at 2.00 m usual status, 8.15 million weekly status and 16.47 m as daily status. The table below gives the percentage of workers unemployed in the rural India according to National Sample Survey Organisation (N.S.S.)

Table 1: Rural Unemployment in India according to N.S.S. Organisation

Round and the Period covered	Male			Female		
	Usual Status	Weekly Status	Daily Status	Usual Status	Weekly Status	Daily Status
27th, Oct. 1972- Sept. 1973	0.75	2.22	4.75	0.18	2.26	3.70
32nd, July 1977- June 1978	1.41	2.34	4.45	1.68	1.40	2.45
38th, June 1983-Dec. 1983	0.97	2.61	4.79	0.38	1.55	2.52
43rd, July 1987- June 1988	2.80	4.20	4.60	3.50	4.40	6.70
50th, July 1993 - June 1994	1.4	3.1	5.6	0.9	2.3	5.0
55th, July 1999 - June 2000	1.7	3.9	7.2	1.0	3.7	7.0
61th, round 2004-05	2.1	3.8	8.0	3.1	4.2	8.7
66th, round 2009-10						

The figures in Table 1 do not refer to the disguised unemployment that might be existing in Indian agriculture. Economists have estimated that about 25% to 30% of the labour force in Indian agriculture is disguisedly unemployed.

Thus the magnitude of rural unemployment has been increasing day by day due to rise in population and capital intensive technology advised inside and outside agriculture.

The Planning Commission has prepared estimates of unemployment by applying the rates of unemployment as obtained from NSS data to the projected population.

Thus the new jobs created within agriculture and outside agriculture have failed to absorb the new entrants into labour force. The backlog of rural unemployment mounting day by day due to rise in population and capital intensive technology adopted inside and outside agriculture.

Self check exercise

Q.3 What is the extent of rural unemployment?

Q.4 Why backlog of rural unemployment is rising day by day?

2.4.5 Causes of rural unemployment:

These are several causes which are responsible for unemployment or under-employment in rural areas. The following are the main causes:

- (i) **Rapidly Growing Population:** The ever-increasing population in India is irresistably drawn towards land in the absence of other avenues of employment. Consequently about two-thirds of the Indian population depends on agriculture and allied occupations.
- (ii) **Lack of Rural Development:** Since rural economy is under-developed, it is unable to absorb its growing population. In the absence of industrial and commercial development on a sufficient scale, the surplus population gravitates to the rural areas.
- (iii) **Seasonal Nature of Agriculture:** Agriculture offers only a seasonal occupation. Hence the people living in rural areas are in a state of enforced idleness for quite a number of months in a year.
- (iv) **Lack of Multiple Cropping System:** In greater part of India single or double cropping system is operative. The multiple cropping system is by and large absent due to lack of irrigation facilities. As a result, the employment opportunities are not sufficient to absorb the rural labour force.
- (v) **Capital-Intensity of Green Revolution:** The main reason for a large scale unemployment or under-employment in agriculture is that, by and large, agriculture is not having enough capacity to provide sufficient number of jobs. The extension of area under cultivation has not kept pace with the increase in the farming population. The intensive farming has led to rise in production per hectare but without much expansion in employment opportunities. There are several reasons which keep agriculture in a state of backwardness and limit its capacity to provide sufficient employment.
- (vi) **Joint Family System:** In India, the joint family system provides an asylum for the idle and the unemployed. The social system is responsible for overcrowding of land leading to disguised unemployment.
- (vii) **Other Causes:** Some of other important causes are small size of holding, lack of subsidiary occupation, dependence of agriculture on rain, lack of mobility, illiteracy and poor health of the rural poor.

The cumulative effect of all these causes is that there are too many people in rural areas that can be gainfully employed in the work available there.

Self check exercise

Q.5 Write down the main causes of rural unemployment?

Q.6 What are the reasons of disguised unemployment?

2.4.6 Remedies:

For removing unemployment or under-employment or disguised unemployment, as it is called, concrete measures are urgently called for. The problem has to be attacked simultaneously on the population front and on the economic development front.

- (i) Measures should be taken for checking population growth and for making production pattern more labour intensive. Economic development should be speeded up and employment opportunities multiplied not only for the existing population but also for the future growth.
- (ii) The galloping rural population unaccompanied by the increase in cultivable area and employment opportunities has complicated the rural unemployment problem. Only stringent measures can be successful to curb the rising population.
- (iii) To lessen the magnitude of disguised unemployment people should be encouraged to adopt subsidiary occupations. Growth promoting rural infrastructure should be created and strengthened for the promotion of subsidiary occupation.
- (iv) In order to reduce in magnitude to disguised unemployment, there should be balanced growth of rural economy as agricultural development alone will not solve the problem due to the seasonal nature of agricultural operation. We should redefine the priorities in favour of promoting industries in rural areas to generate more employment openings.
- (v) Rural unemployed persons should be provided employment only in the rural areas by starting rural works programmes such as construction of roads, digging of drains, canals or repairs. These programmes should be started during off-season and only in areas where the people are unable to find employment.
- (vi) The main line of action that need to be taken into consideration is that utilization of the idle and leisure hours of the employed. Unemployed and under-employed masses should be overcome. Diversification of the rural economy through rural industrialisation with special stress on improving the technology in the existing rural industries and introducing new industries suited to the conditions of different regions is, therefore, one of the major economic and social requirements of the country.
- (vii) Additional irrigation facilities should also be provided so that rural people may adopt multiple cropping and thus remain busy throughout the year. The rainfall in the country is most uncertain and it confined to few monsoon months in a

year. That is why employment in agriculture is also uncertain. To remove this uncertainty, assured irrigation is necessary.

- (viii) Surplus labour should be put to such capital formative activities which are labour intensive and require a minimum draft on equipment and materials, and in cases of short gestation periods and the possibility of promoting a wide extension of these activities over the whole country. Such labour power may conveniently be utilised for the extension of afforestation and in arid areas for canal, and road construction, land reclamation, binding of terracing surface drainage, minor irrigation projects, etc.
- (ix) The Indian education system has failed to develop human resources. Therefore education system should be reshaped to make it responsive to the specific needs of the nation. Employment oriented courses should be introduced in schools and colleges to enable the educated youth to start their own workshops.
- (x) The employment problem can be tackled by developing rural industries which are run by rural people in or near their homes as a spare time or whole time occupation either as a caste industry or traditional profession. It is based primarily on the utilization of locally available raw material and skill with a little capital outlay. The following industries can be conveniently developed in different parts of the country:
- (1) Industries suitable for Wet and Moist regions.
 - (2) Industries suitable for dry and arid regions.
 - (3) Seasonal industries.
 - (4) Development of indigenous industries.
 - (5) Development of processing industries etc.

Yet another suggestion relates to the minimum needs programme. This covers the provision of rural housing, water supply, primary health care and primary education. Such a programme will not only provide employment to a large number of people but will also immensely benefit the rural society.

Self check exercise

Q.7 What do you suggest to uproot the problem of rural unemployment?

Q.8 How will the spread of education be helpful in solving this problem?

2.4.7 Specific Steps taken by Government

Various steps have been taken by the Government of India to solve the problem of unemployment and under-employment in rural areas since the formulation of the First Five-Year Plan. It was felt that a permanent solution to this problem had to be found through the adoption of scientific and intensive agricultural development and promotion of cottage and small scale industries. The linking up of village economy with urban market centres was also envisaged. Population growth, too, was to be controlled. However, as it was felt that all these measures would take

a long time to fructify, the unemployed rural masses should be provided, in the meanwhile, with productive employment, on an adhoc basis through some special schemes. The following schemes have been undertaken to provide productive employment to unemployed rural masses:

1. Drought-Prone Areas Programme:

The Drought-Prone Areas Programme, formerly known as Rural Works Programme, was initiated in 1970-71. Under this scheme, emphasis is laid on the construction works in sectors like medium and minor irrigating, soil conservation, afforestation and communication as they are labour-intensive and production oriented. During 1971, works schemes in 39 districts which are chronically drought-prone areas, were taken up.

During the seventh plan, the central Government spent Rs. 462 crore as its own share on this programme. At present, the programme is being run in 627 blocks of 96 districts in 13 states. Some of the important schemes envisaged under this programme are changes in agronomic practices, cropping pattern, pasture development, proper management of irrigation sources and live stock development.

2. Crash Programme for Rural Employment:

The crash programme introduced in April 1971 involved an outlay of Rs. 150 crore in the three year period 1971-74 to create employment for over 4 lakh persons. The primary objective of the scheme was to generate additional employment through a network of rural projects of various kinds which are labour intensive and productive.

The various schemes under the Fourth Five-Year Plan or the crash plan could not succeed in removing rural unemployment and under-employment because efforts were not made to organise the army of the rural unemployed into appropriate supply camps to be shifted to places of demand at the desired minimum wages.

3. The National Rural Employment Programme (NREP)

The food for Work Programme was restructured and renamed as National Rural Employment Programme (NREP) from October, 1980. This was implemented as centrally sponsored scheme on 50: 50 sharing basis between the Centre and the States. The centre provides its share partly in the form of foodgrains and partly in cash. Additional employment of the order of 300-400 million mandays per year for the unemployed and under-employed is envisaged under the NREP. Besides this the NREP aims to create community assets for strengthening rural infrastructure. These include drinking water wells, community irrigation wells, village tanks, minor irrigation works, rural roads, schools and panchayat ghars etc. Review of the progress of NREP during the first four years of the Seventh Plan reveals that Rs. 2,940 crores, was spent during 1985-86 and 1988-89 but as against it, the employment generated was of the order of 1,477 million mandays. In other words, while more funds have been pumped into the programme, commensurate increase in employment generation has not come about; but there is no doubt that NREP was a step in the right direction. The NREP lasted for 9 years.

4. Rural Landless Employment Guarantee Programme:

To supplement NREP, a new Rural Landless Employment Guarantee Programme (RLEGP) had also been launched on the 15th August 1983. The main objective of this programme was to generate long-term employment in the rural areas, particularly for the landless workers, women, scheduled castes and scheduled tribes. The programme was funded by the Central Government on 100% basis.

Resources were allocated to the States/Union Territories on the basis of the prescribed criteria giving 50% of weightage to number of agricultural labourers, marginal farmers and marginal workers and 50% weightage to incidence of poverty. It is also stipulated that the wage component on a project should not be less than 50% of the total expenditure on the project. During the Seventh Plan, an outlay of Rs.1743.48 crore was provided for this scheme and the employment generation target was fixed at 101.3 crore mandays. The progress of RLEGP during the Seventh Plan reveals that during the first four years, a sum of Rs. 2,412 crore was utilized and this helped to generate employment to the tune of Rs. 1,154 million mandays. During 1989-90, this scheme was merged with NREP and Jawahar Rozgar Yojna came into being.

5. Jawahar Rozgar Yojna

Prime Minister Rajiv Gandhi announced on 28th April, 1989 the launching of the Jawahar Rozgar Yojana (JRY). JRY is specially targeted to help people below the poverty line. Based on the experience gained in the implementation of the Jawahar Rozgar Yojana (JRY) and to achieve the objective of providing 90-100 days of employment per person in backward districts, JRY has been modified from 1993-94 and is now being implemented in the following three streams:

- (a) On the existing pattern with two sub-schemes, namely Indira Awaas Yojna (IAY) and Million Wells Scheme (MWS).
- (b) An intensified JRY in 120 identified backward districts with additional allocations.
- (c) Special and innovative projects.

10 percent of the total resources of JRY are earmarked for the IAY and 30 percent for the MWS. Indira Awaas Yojana is aimed at providing houses, free of cost, to the members of the SC/ST, freed bonded labourers. From 1993-94, the scheme has been extended to other poor categories (besides SC/ST) as well. The MWS was launched as a sub-scheme of NREP/RLEGP during 1988-89 to provide open irrigation wells, free of cost, to poor small and marginal farmers belonging to SCs/STs and get freed bonded labourers. From 1993-94, the scheme has been extended to include poor, small and marginal farmers belonging to non-SC/ST categories.

During 2001-02, employment for 262.42 million lakh mandays were generated under JRY. In 1999 this scheme was restructured and renamed as Jawahar gram samridhi yojna (JGSY)

6. Development of Women and Children in Rural Area (DWACRA)

The integrated rural development programme was initiated on October 2, 1980 in all the 5,011 blocks in the country. It was essentially conceived as an anti-poverty programme under the Sixth Five Year Plan. The basic strategy was to promote self-employment of the poor households through IRDP so that with the transfer of productive assets, they may earn income that help them to cross the poverty level.

During the 7th Five Year Plan, 181,8 lakh families had been assisted through a total investment of Rs. 8688.34 crore. During 1993-94, 25.38 lakh families had been assisted. As per official records, 45 percent of the families assisted belonged to SCs and STs.

This scheme is financed by the Central and State Governments on 50: 50 basis. During the first two years of the Eighth plan steps were taken to improve per capita investment so that assets created under IRDP could help families to cross the poverty line.

7. Scheme of Rural Artisans

The scheme concerning supply of modern tool kits to rural artisans is a supporting component of the IRDP. It was started as a centrally sponsored scheme in 1992-93 in selected districts. All traditional rural artisans living below the poverty line except weavers, tailors, needle workers and bidi workers are covered under this programme. In 1992-93, 97,585 artisans in 62 districts were covered by this scheme.

8. Small Farmers Development Agency and Marginal Farmers and Agricultural Labourers Agency (SFDA/MFALA):

The Government of India set up two special agencies to help the small farmers and agricultural labourers during the early seventies. These were (i) Small Farmers Development Agency and (ii) Marginal Farmers and Agricultural Labourers Agency. The object of SFDA was to make available to small farmers credit to enable them to make use of the latest technology to practise intensive agriculture and diversify their activities. Under the scheme marginal farmers and agricultural labourers, families were to be assisted with subsidised credit support for agricultural and subsidiary occupations like dairy, poultry, fishery, piggyery-rearing, horticultural operations etc.

9. Prime Minister's Rozgar Yojna:

The scheme was started on 2nd Oct. 1993 and presently covers the urban areas only. Subsequently, the scheme will be extended to rural areas also. With effect from April 1994, the scheme for self employment for educated unemployed youth was integrated with PRY.

10. Employment Assurance Scheme:

This scheme was started during 1993-94 and aims at providing 100 days of unskilled manual work to rural poor who are seeking employment. The scheme is to be funded jointly by the Central and State governments on 80: 20 basis. The scope of the scheme has also been enlarged for taking up horticultural activities on individual

beneficiary land of marginal farmers. Over 2.23 crore persons have been registered under the scheme. About 347 million mandays employment was generated during 1995-96 as against 274 million mandays during 1994-95. In 2001-02 about 260.55 million mandays jobs were generated. In 2002 this scheme was merged with JGSY to form sampoorna gram Rozgar Pojna.

11. District Rural Industries Project:

This project was started in October 1994 in a village in Gwalior district and will cover 500 selected villages in the country within a period of 5 years after its inception.

Various other schemes/programmes have been started by government to generate more rural employment e. g. minimum needs programme, Special employment scheme started in the Punjab, special programmes for dairying, agricultural extension and training programme, setting up of rural industrial estates etc.

In short, the reconstruction of Indian agriculture seems to be absolutely essential if periodic and seasonal ebbs of unemployment have to be avoided. Its nature as subsistence farming must change. The methods of agriculture must undergo a revolutionary change.

12. Swaranjayanti gram Swarozgar Yojna (SGSY):

This came into being by merging IRDP, TRYSEM, DWACRA and MWS. The scheme aims at establishing a large no. of micro enterprises in the rural areas and to bring every assisted family above the poverty line in 3 years by providing it with income earning assets.

Self check exercise

Q.9 What are the steps taken by the Govt. to uproot the problem of rural unemployment?

Q.10 Write a short note on Prime Minister's Rozgar Yojna.

2.4.8 Summary

Unemployment is almost a universal feature. Only the extent and causes vary from country to country. In India, there has always been a serious degree of unemployment as well as of under-employment and it has constituted one of the most serious problems. The rural unemployment in rural India is prevalent among small and marginal farmers. These farmers are characterised by lower levels of income, higher incidence of indebtedness, rurality and illiteracy, fewer assets and concentration in traditional activities. Various steps have been taken by the Government of India to solve the problem of unemployment and under-employment in rural areas since the formulation of the First Five-Year Plan but unfortunately, the problem is still there ,it can not be solved.

2.4.9 Glossary

Disguisedly unemployed : When persons involved in any activity are not contributing positively, their MP

		is zero.
Afforestation	:	Plantation of more trees.
Yojna	:	Planning made to achieve the target.
Smridhi	:	Prosperity.

2.4.10 Short answer type Questions

1. What is unemployment and under-Employment?
2. Distinguish between Small and Marginal Trainees.
3. Define usually status, weekly status and daily status unemployment.
4. Write a brief note on JRY.
5. Briefly give the nature of Indian agriculture unemployment.

2.4.11 long answer type questions

- Q.1 What is the problem of Rural Unemployment? Discuss its nature and magnitude in India. Suggest the measures to remove this problem.
- Q.2 Discuss critically the various schemes implemented by government from time to time to eradicate the problem of Rural Unemployment.

2.4.12 Suggested Readings

- B.P. Tyagi : Agricultural Economics and Rural Development.
- Ugra Mohan : Rural Development in India, Problems and Prospects.
- I.C. Dhingra : Indian Economy.

GROWTH & PRODUCTIVITY TRENDS IN INDIAN AGRICULTURE

Agricultural Productivity :

Agricultural production depends not only upon land in use but also upon productivity. Agricultural productivity shows the relationship between agricultural input and output.

Compared to developed nations, agricultural productivity in India is very low but worse still is that it is low compared to many underdeveloped countries as well. In Egypt, for example, productivity of wheat is twice as much as that of India. Productivity of rice in Japan is three times that of India. Even backward countries like Indonesia produces 25% more rice per hectare of land compared to India. Productivity of maize is three times in Argentina than in India. Per hectare output of cotton in China is twice as much as in India. Because of concerted efforts, there has been some notable increase in agricultural productivity in India since independence. Yet it is miserably low compared to most of other countries of the world. It may thus be said that Indian agriculture is a backward agriculture. A backward agriculture is one whose per hectare productivity is low as against the other countries.

Low Agricultural Productivity or Backwardness of Agriculture

Agricultural productivity in India has improved since independence. Yet it is low compared to most of the other countries of the world. Following Table shows level of agricultural productivity in India in 1998-99.

Table 1 Per Hectare Productivity

<i>Product</i>	<i>Country</i>	<i>Kilograms</i>
Rice	India	1,747
	Japan	6,220
	China	6,060
Wheat	India	2,590
	France	7,690
	U. K.	7,560
Cotton	India	224
	Egypt	760
	Australia	1,520

(Source : *Economic Survey, 1998 and Statistical Outline in India, 1998*)

The table shows that despite planned development programmes in India and Green Revolution, agricultural productivity continues to be very

low compared to other countries of the world. It is so, despite the fact that productivity in India has tended to rise as shown by Table 2.

Table No. 2 Progress of Per Hectare Productivity

(Kilograms Per
Hectare)

<i>Crop</i>	<i>1950-51</i>	<i>2002-03</i>
Rice	668	1,804
Wheat	663	2,618
Cotton	88	193
Sugarcane	3,342	65 (Tonnes)
Jute	1,043	2,153
Maize	704	1,838

(Source : Economic Survey 2003-04)

Table 2 shows that per hectare production of wheat has risen from 663 kgs. in 1950-51 to 2,618 kgs. in 2002-03, productivity of rice likewise has risen to 1,804 kgs in from 668 kgs in 1951. But when compared with other countries, productivity level is still very very low. There is a lot of potential to increase agricultural production in India through increased productivity.

(2) Low Productivity Per Labourer : In India productivity per labourer is equally low compared to other countries. Dr. Baljit Singh Writes, "Per worker agricultural production in India is 1/23 west herm any and 1/21 of Japan." It points to the backwardness of Indian agriculture. This explains why every 7 of 10 workers in India are engaged in agriculture, while in U.S.A. 1 out of every 14 workers is engaged in agricultural activities. Indian farmer still fails to fulfil the country's food requirements. American farmer, on the other hand facilitates exports worth crores of tonnes after meeting his domestic needs. The extent to which productivity in India lags behind other countries is highlighted by the following table :

Table 3 : Labour Productivity in Agriculture per year

Country	Average Productivity (Rs.)
1. India	1,213
2. England	16,456
3. Japan	18,120
4. U.S.A.	1,926
5. Germany	27,690

According to the National Income Committee per capita income in agricultural sector was Rs. 500, compared to Rs. 1,700 in the large-

scale industries, and Rs. 1,500 in the Trading sector, in 1950-51. According to some latest estimates, labour productivity in India has risen to Rs. 1,214 at the current prices. Thus, there has been some improvement in labour productivity in agriculture during the period of planning. There are regional differences in agricultural labour productivity in India. In Punjab it is Rs. 3,195, in Haryana Rs. 2,112, in H.P. Rs. 1134, while in Bihar it is only Rs. 755.

Importance of Increase in Agricultural Productivity :

Increase in agricultural productivity is significant from three angles :

- (1) Increase in agricultural production, industrial growth, capital formation, and coping with the growing consumption requirements of the urban population.
- (2) Increase in agricultural productivity facilitates release of labour to be used in other sectors of the economy.
- (3) Increase in agricultural productivity raises purchasing power in the rural areas, thus generating demand for the non-agricultural goods.

Trends in Agricultural Productivity :

Agricultural productivity-both of food crops and non-food crops has certainly risen during the plan period in India. Barring a few abnormal years, agricultural productivity has tended to rise almost consistently over time, though the rise has been relatively more in the case of food crops. Between 1950-51 to 1995-96 overall agricultural productivity increased by 2.7% but productivity of food crops increased by 3% per annum. During the seventh plan, however, overall agricultural productivity increased by 3% per annum. In the case of food grains, while wheat, bajra and rice have shown an appreciable rise in their production there has been rather no improvement in the production of jowar, maize and pulses, Growth rate of agricultural production is expected to be 4 percent during the Eighth Plan.

Average growth rate of agriculture during different periods of time in India is shown in the table on the next page

Trends and Growth rate of production Agricultural Crops**Since 1949-50**

Items	1949-50	1964-65	2006-07	Annual Growth rate (%)	
				1949-50 to 1964-65	1967-68 to 2006-07
1. All Foodgrains (In tonnes)	55	89	216.1	3.2	2.21
Rice	24	39	92.7	3.5	2.20
Wheat	6	12	74.9	4.0	5.0
Coarse Cereals	17	25	39.7	2.2	0.6
Pulres	8	12	14.2	1.4	-0.2
2. All non-food grains (in tonnes)	-	-	-----	3.5	2.6
Oil seeds (In tonnes)	5	9	23.8	3.3	1.9
Sugarcane (In tonnes)	50	122	345.3	4.3	2.5
Cotton (on bales of 70 kg. each)	3	6	22.7	4.6	1.4
Potatio	2	4	23.9	4.3	4.9
3. All Crops				3.1	2.4

From above table we came to know about production in foodgrains was 55 Million tonnes in 1949-50, which increased to 216 million tonnes but annual growth rate for coarse cereals and pulres is marfind and even for pulrs it is negative -2.9

Causes of the Backwardness of Agriculture :

Agricultural productivity, according to economists, depends mainly upon three factors :

(i) Human factors, (ii) Institutional factors, and (iii) Technical factors. Human factors are related to training and efficiency of the farmers and social conventions. Institutional factors related to the relationship between the tillers of the soil and owners of the soil. Technical factors relate to techniques and methods of cultivation. It is from all the human, institutional and technical angles that Indian agriculture is backward. Following are some of the main causes of the backwardness of the Indian agriculture :

(I) Human Factors :

Principle Human factors responsible for the backwardness of Indian agriculture are as follows :

- (i) **Pressure of Population on Land :** Heavy pressure of population on land is one of the principal causes of the backwardness of Indian agriculture. In 1901, 19 crore 30 lakh people were dependent upon agriculture. The number has now

increased to 58 crore 80 lakh. Consequently per capita cultivable land which was 0.43 hectare in 1901 has now reduced to just 0.23 hectare. Heavy pressure on land has led to subdivision and fragmentation as well as disguised unemployment. Saving capacity of the farmers has also been reduced.

- (ii) **Social Atmosphere :** Social atmosphere is also not conducive to growth Indian farmer is illiterate, and thus fails to be abreast with the latest techniques of production. He is fatalist in outlook, and therefore, has no urge to make progress. He is superstitious and orthodox. He is in the firm urge to make progress. He is in the firm grip of casteism. Because of ignorance and casteism, Indian farmers quarrel over trifle. Most of their time and money is wasted in litigation. Social environment of the rural sector is in no way conducive to the growth of agriculture in India.

(II) Institutional Factors :

- (i) **Small Size of Farms :** Generally, holdings in India are of very small size. India's average size of the holding is 2.3 hectares. More than 70% of the holdings are even less than two hectares. In America the average size of holding is 122 hectares. Not only holdings are small but also fragmented. Because of small size of holding, scientific cultivation becomes difficult. There is wastage of cattle implements and land, irrigation facilities are not properly utilized. On account of small and fragmented holdings, there are disputes and litigations among the farmers over irrigation turn. It also adversely affects Indian agriculture.
- (ii) **Land Tenure System :** Zamindari system has been an important factor responsible for the backwardness of Indian agriculture. In this system the tiller of the soil is not the owner of the soil, Zamindar, the owner of the soil, could evict the tenant at will. As a result, the tiller never takes any interest in the improvement of land. Zamindar also took no interest in the development of cultivation. Though Zamindari system has been abolished after independence, yet the position of the cultivators is far from satisfactory. They have to pay exorbitant rent. The behaviour of the land lords continues to be arrogant and arbitrary. They throw the cultivator out of the land on flimsy excuse. Under the circumstances it would be too much to expect of the cultivators to increase agricultural productivity.

(III) Technical Factors :

- (i) **Inadequate Irrigation Facilities :** Indian agriculture is still largely rain fed. Because of uncertainty of rainfall, agriculture

becomes a gamble in monsoon. Even after 57 years of Independence only 34 per cent of the agricultural land has permanent irrigation facility makes it impossible for the farmer to raise more than one crop year.

- (ii) **Old Implements** : Old implements is a typical technical character of Indian agriculture. In this advanced scientific age, one still finds the use of wooden ploughs, sickles and spades in Indian agriculture. Tractors and modern equipments are still not commonly used. Owing to the use of out-moded implements, productivity keeps low.
- (iii) **Old Methods of Cultivation** : Methods of cultivation continue to be conventional. Rotation of crops is not scientifically practised. Productivity is thus bound to be low.
- (iv) **Lack of High Yielding Variety Seeds** : High yielding variety of seeds are still not commonly used. Farmers in India fail to appreciate the significance of these seeds. Also they cannot afford to buy them, and sometimes these are not available either. Consequently, productivity suffers.
- (v) **Lack of Manure** : Manures are significant input to raise productivity. But the Indian farmer fails in the judicious use of manures. Cow dung, an important source of manure in India, is used more as a fuel. Nearly 60 per cent of it is burnt. Chemical fertilizers are expensive and are mostly imported from abroad. Thus chemical fertilizers are not available to Indian farmers in sufficient quantity.
- (vi) **Defective Marketing** : Defective marketing system is an important factor in the context of backwardness of agriculture. Farmers in India fail to get the reasonable price for their produce. Lack of means of transport compels the farmer to sell his produce to the local 'Sahukars' at unremunerative prices. Lack of warehouses compels the farmer to sell his produce immediately after heaviest when prices are low. All this discourages the farmer to produce more and he continues to take agriculture as a way of life.
- (vii) **Diseases of the Crops and Pests** : Large portion of the farmers produce is destroyed by plant diseases, monkeys, rats and by the insects and pests. According to Prof. N. Singh, "In India crops worth Rs. 100 crores is annually destroyed by the insects and pests."
- (viii) **Weak Cattle** : Owing to limited mechanization in Indian agriculture, cattle power assumes more significance. Indian cattle are weak and their mortality rate is very high. Farmers have to maintain a large number of cattle involving lot of expenditure. It adds to the cost of agricultural production. It is estimated that cultivation through cattle is more expensive than the tractors.

- (ix) **Defective Soil** : Indian soil is qualitatively poor. Soil erosion, waterlogging, deficiency of nitrogen and moisture are some of the well known drawbacks that lower the productivity of land.
- (x) **Lack of Credit Facilities** : Credit facilities continue to be scant in the rural areas. It is not easy for the farmers to take the desired amount of credit from co-operative banks and credit societies. Quite often, they still have to depend for consumption loans upon 'Mahajans' and 'Sahukars' who charge exorbitant interest rates. Its adversely effect agricultural productivity. The farmer has to pay a large portion of his income to the moneylender by way of interest. Farmers are very often forced to sell their produce at low prices to the moneylenders. Low income of the farmers results in low productivity.

In short, all the three sets of factors, human, institutional and technical are responsible for keeping Indian agriculture in the state of backwardness.

Remedies of Backwardness :

Following are the remedies for backwardness of Indian agriculture :

- (1) **Less Pressure of Population** : It is essential that the pressure of population on the soil is reduced. It requires the growth of industries so that the surplus farm-population can be usefully charged elsewhere. Also small and cottage industries must be developed in the rural areas. Besides this rigorous means are to be adopted to control the growth rate of population.
- (2) **Irrigation** : With a view to reducing the dependence of Indian agriculture on rainfall, it is essential that permanent means of irrigation are developed. There should be more canals and tubewell. Multipurpose river valley projects can also solve the problem of irrigation.
- (3) **Mechanization** : More and more mechanized means of cultivation need to be introduced to suit the needs and means of the farmers. Also there should be proper arrangement for their sale and maintenance. Exhibitions of agricultural tools and implements may be organized to arouse awareness amongst the farmers of the significance of mechanization. Arrangements should be made to sell implements to the farmers on instalment basis.
- (4) **Scientific Cultivation** : Scientific methods of cultivation should be propagated. Farmers should be educated about rotation of crops, use of fertilizers, inputs-mix and the like techniques. Farmers should be taken to state demonstration farms to show them the new and scientific methods of cultivation. Farmers using new techniques must be encouraged, may be through wards. More research on the crops, seeds, land and fertilizers may prove to be useful in this context.

- (5) **Good Seeds** : Farmers should be given complete knowledge regarding various varieties of seeds. Quality seeds should be sold through co-operative societies or “Village Panchyats” “Small farmers be given these seeds on loan. More research is needed regarding quality and good seeds may be procured from abroad.
- (6) **Manure** : Farmers should be educated on the use of Green manure. Oil cakes may also be used as fertilizers. Giving up their unwarranted superstitions and religious sentiments, farmers should be prepared to use bones and fish as manures. Production of chemical manures should be raised in country and be made available to the farmers at reduced rates.
- (7) **Finance** : Farmers must get credit at reasonable rates of interest. More and more Land Development Banks should be opened. Credit activities of ‘Mahajans’ must be properly scrutinized. Commercial banks branches should be spread in the rural areas.
- (8) **Land Reforms** : Land Reforms are very vital to the progress of agriculture. Zamindari system should be abolished and ownership of land should be bestowed upon those farmers who actually cultivate. Ceiling on land holding be imposed. Minimum size of farm should be fixed. Economical prosperity of the farmers would contribute to the prosperity of the national as a whole. And waterlogging be removed. In India, about 160 lakh hectares of cultivable land is lying wasted. It should be reclaimed.
- (9) **Tenancy Reforms** : Progress of agriculture pre-suspenses the much needed tenancy reforms. Land rent should be fixed. No begar (work without remuneration) should be taken from them. Cultivators should not be evicted so long as they continue to pay rent. He must also be compensated for all permanent improvements made by them on the soil at the time of their eviction.
- (10) **Agricultural Marketing** : Agricultural marketing must be improved so that farmer gets appropriate price of his produce. Regulated markets and co-operative marketing societies should be established. Ware housing facilities should be improved. Also, means of transport should improve.
- (11) **Mixed Farming** : Mixed farming should be encouraged so that crop cultivation, animal husbandry, vegetable and fruit growing should be practised side by side. Dairy farming should be particularly encouraged with a view to improving the economic conditions of the farmers.
- (12) **Education** : Education must be spread in the rural areas as much as possible. Farmers must be educated in general and farming

operations in particular. It will remove orthodoxy and superstitions among them. They will assimilate new ideas. With the knowledge of new techniques of cultivation, they will strive to increase production. To achieve this objective, free education should be given to the villagers. Night classes should be arranged for adult farmers.

- (13) Improvement in the Breed of Livestock :** Artificial insemination should be used for improving cattle breed. Provision of good fodder will keep the cattle healthy. Cattle should be immediately attended. More and more veterinary hospitals need to be opened to treat sick cattle.
- (14) Reduction in the Risk of Farmers :** Indian farmer is exposed to a variety of risks, related to uncertain rainfall in particular. The crops are also destroyed by the menace of insects and pests, besides floods sometimes. All this adversely affected economic condition of the farmer, and therefore farming. Crop insurance may serve as a useful in this context. Also, judicious use of insecticides and pesticides should help check the menace of insects and pests.
- (15) Help to Small Farmers :** To maintain the impact of Green Revolution, it is essential that small farmers are helped with HYV seeds, fertilizers and new farming techniques. Also, they should be given loan at concessional rates of interest to enable them to make use of new technology. Economic prosperity of the farmers would contribute to the prosperity of the nation as a whole.
- (16) Price Stability :** Benefits of Green Revolution are mixed with the fear that, owing to increased productivity, crop prices may fall. The government should ensure that farmers get reasonable price for their produce. Otherwise farmers will not adopt improved technique and agricultural growth will not be stabilized.
- (17) Efficient Administration :** Development plans regarding agriculture can be successful only if there is efficient administration of the plans. Only such officials should be associated with integrated Rural Development Programme. Co-operative societies and various other development agencies which are compatible with the rural life and are committed to the cause of rural upliftment.
- (18) Use of New Technology :** New technology should be used to raise agricultural productivity. Intensive cultivation should be particularly emphasized. Ample supply of seeds, chemical fertilizers, agricultural tools and implements should be arranged.

In short, various measures are needed for the growth of Indian agricultural. In the words of Dr. Burns, "About 30 per cent increase in

output per hectare can be achieved through judicious use of fertilizers. 10 per cent through goods seeds and 20% per cent by way of controlling various crop disease". Development of agriculture has been emphasized in five year plans. In fact, Indian economy cannot develop without the development of agriculture.

Measures Employed to Develop Agriculture sector :

Many steps have been initiated since independence for the development of agriculture. In fact, major breakthrough has been achieved. Food grains production has substantially increased from 550 lakh tonnes in 1,951 to 1,991 lakh tonne in 1995 further increased to 2,090 tonnes in 2000-2001. Increase in agricultural production may be explained in terms of :

- (1) Increase in Area under Cultivation
- (2) Increase in productivity
- (3) Changes in Cropping Pattern.

In India, from 1951 to 1997, growth rate of agriculture is 2.9%. Increased production was 54.8% due to increase in area under cultivation and 45.2% due to increase in productivity. According to certain estimates by Minhas and Vaidyanthan, 45.38% of increased in an agricultural output has been due to expansion of area under cultivation, 46.25% due to increased productivity and 8.37% due to cropping pattern. In the initial 10 years of Planning, increase in agricultural production was due to extension of area under cultivation than increase in productivity. Growth rate of agriculture in India, at present, is 4.6 percent per annum. It is to be raised to 3 percent per annum. No precise estimate is available regarding the effect of crop rotation on agriculture. Considering the problem in right perspective, it becomes evident that in the second decade of economic planning, main cause of increase in agricultural production was improvement in productivity as against extension in agricultural area. Various measures adopted during the plan period for raising agricultural output may be categorized as (1) Technical measures, and (2) Institutional Measures.

Technical Measures :

Technical measures include : (1) Multiple cropping (2) Expansion of irrigation facilities (3) Manures (4) Use of high yielding variety of seeds (5) Plant protection (6) Scientific methods of cultivation (7) Mechanization (8) Development of agricultural land and (9) Improvement in animal husbandry.

Institutional Measures :

Institutional measures include (1) land reforms (2) tenancy reforms, (3) Improvement in marketing of agricultural produce and (4) improvement of credit facilities. In what follows, we discuss these measures in detail.

- (1) Increase in the area under cultivation :** Area under cultivation increase either (i) because of increase in the net area

or (ii) because of multiple cropping. The latter refers to raising more than one crop during the year. Attempts have been made to increase the area under cultivation during Five Year Plans by both these methods. During the plan period, area under cultivation increased by 38 per cent. In 1950-51 total area under cultivation was 13 crores hectare, while presently it is estimated to be 17 crores hectare. In order to increase the area under cultivation, lot of cultivable waste land has been brought under cultivation. Area under current fallow has been reduced. Efforts have been made to reclaim the land lying waste due to soil erosion. And, more than 3 crores hectare of land has been put under multiple cropping.

- (2) **More Irrigation :** Irrigation facilities have been increased over time. Many major and minor irrigation projects have been launched in the country. In 1951, only 18 per cent of land was irrigated land, which now has increased to 34 per cent. Multi-purpose projects and instalation of Tubewells have been particularly useful in this context. Dry farming has been introduced in areas where permanent means of irrigation are not possible in 1996-97 total irrigation area was estimated to be 894 lakh hectares further increased to 947 lakh hectares in 1999-2000.
- (3) **More Use of Fertilizers :** Judicious application of fertilizers has also contributed to the growth of agricultural output. Various steps have been initiated to encourage the use of cow-dung as manure rather than as fuel. Use of chemical fertilizers has also increased, besides the greater application of 'Compost'. In 1996-97, nearly 143 lakh tonnes of chemical fertilizers were used and 181 lakh tonnes in 1999-2000.
- (4) **High Yielding Variety Seeds :** High yielding variety seeds have almost revolutionalized Indian agriculture since 1964-65. HYV seeds have been evolved especially in respect of wheat, bajra, rice, maize, jowar and cotton. National Seeds Corporation has been set up for the proper growth and distribution of these seeds. In 1996-97 nearly 750 lakh hectares of land was cultivated with high yielding variety seeds.
- (5) **Plant Protection :** Considerable efforts have been made to protect crops from the insects and pests. Fourteen Central Protection Centres have been set up for this purpose.
- (6) **Scientific Cultivation :** Scientific cultivation has been particularly emphasized during the plan period. It has been endeavoured to adopt superior agricultural technology in respect

of crop rotation selection of quality seeds, use of proper manure, treatment of soil, selection of crops, dry farming etc. In this context, Intensive Agricultural Area Programme has been started. Many agricultural research centres and agricultural universities have been set up for developing new scientific methods of cultivation. Haryana Agricultural University, Punjab Agricultural University Ludhiana, Himachal Agricultural University Palampur; ICAR, Delhi are making substantial contribution to the field of scientific methods of cultivation.

- (7) **Mechanization** : Use of tractors, thrashers and various agricultural tools and implements are being popularized. Small farmers are assisted with cheap credit facilities through Cooperative Societies, Community Development Blocks and nationalized banks for the purchases of machinery and equipment. Agro-Industries corporations have been set up in almost all states with a view to encouraging mechanization in agriculture.
- (8) **Development of Agricultural Land** : Efforts are afoot for the development of agricultural land during Five Year Plans, Notable success has been achieved in the levelling of land, terracing of fields, and contour bunding. Land surveys are also being conducted.
- (9) **Improvement of Animal Husbandry** : During the Plans, key village schemes have been started particularly with a view to improving cattle-breed. Many veterinary centres have been opened to check cattle diseases. As many as 86 Intensive Cattle Development Projects have been started for improving the cattle wealth of the country.
- (10) **Land Reforms** : In order to increase the productivity of agriculture, in addition to technical factors, institutional factors like land reforms are also of great importance. After independence, government has undertaken many land reform measures, e.g. (i) Zamindari system has been abolished. The actual cultivator has been given the ownership right of the occupancy tenant (ii) Tenancy system has been reformed by enacting various legislative measures in different states (iii) Ceiling on land holding has been fixed (iv) By 1977, about 630 lakh hectares of holdings have been consolidated (v) Co-operative farming has also been developed. (vi) In order to improve the lot of landless farmers, Acharya Vinoba Bhave launched Bhoodan movement in the country.
- (11) **Improvement in Agricultural Marketing** : Improved agricultural marketing at ensuring the farmers the appropriate rewards from the sale of their product. Three directional efforts have been made in this regard.

- (i) Regulated Markets :** Regulated markets are managed by the Market Committee appointed by the government. These committees ensure that the farmers are not exploited by the middle-men. Metric system of weighting is adopted in these markets by 1977, nearly 7,001 markets in the country were regulated.
- (ii) Cooperative Marketing Societies :** These are yet another agency for bringing about marketing reforms. These societies sell the produce of their members at appropriate prices. They also arrange for the speedy and cheap means of transport and proper grading of crops. Also, these societies offer storage and warehousing facilities to the farmers. At present nearly 6,777 such societies are working in the country.
- (iii) Price Support :** In order to encourage the farmers to increase agricultural production, it is essential that fall in agricultural prices be insured against, it is through price support system. Under this system, government assures the producers a minimum price of their crops. Government trading agencies arrange to buy the entire crop of the farmers at the minimum price. Presently the policy of support price covers wheat, rice, cotton, gram and new other grains.
- (12) Credit Facilities :** Cooperative credit societies have been formed with the view to provide credit facilities to the farmers at reasonable rates of interest. Number of Land Development Banks has been increased. Presently, there are as many as 93,000 primary credit societies and 2,440 primary Land Development Banks in the country. After nationalization, commercial banks has also started giving loans for farming operations, Regional Rural Banks and farmer societies are to further strengthen the rural credit programs. National Bank of Agriculture And Rural Development has been established as an apex agricultural finance institution. In 1996-97, loans worth Rs. 28,653 crores will be granted by different financial institutions. Integrated rural development programme was started in 1978. The programme seeks to uplift the poor farming population above the poverty line and remove unemployment through appropriate utilization of the natural and human resources of the rural areas.

WTO AND AGRICULTURE IN INDIA**2.6.1 Introduction****2.6.2 Objectives****2.6.3 World Trade Organisation (WTO)**

2.6.3.1 Objectives of the WTO

2.6.3.2 Origin and Evolution of WTO

2.6.3.3 Structure and Membership

2.6.3.4 Functions

2.6.4 Indian Agriculture and the WTO:

2.6.4.1 Tariffication (Market Access)

2.6.4.2 Domestic Support

2.6.4.3 Export Subsidies

2.6.4.4 WTO and Fourth Ministerial Conference at Doha

2.6.4.5 Fifth Ministerial Conference at Cancun

2.6.5 Summary**2.6.6 Glossary****2.6.7 Short answer type Questions****2.6.8 Long answer type Questions****2.6.9 Suggested Readings****2.6.1. Introduction**

The World Trade Organization (WTO) is the legal and institutional foundation of the multilateral trading system. It provides the principle contractual obligations determining how governments frame and implement domestic trade legislation and regulations. And it is the platform on which trade relations among countries evolve through collective debate, negotiation and adjudication. It is the largest, most comprehensive trade agreement in history. WTO is a significant step for pulling out the developing countries from the paradoxical rapture of 'no rule situation' on access to the international market, ensuring their comparative advantages and competitive environment.

2.6.2. Objectives of the lesson

The objectives of the present lesson are to discuss the origin and evolution, structure and functions of World Trade Organisation. Further three provisions of Agreement on Agricultural (AOA) have also been highlighted. Recently held Fourth Ministerial Conference at Doha in November, 2001 and aftermath scenario has also been touched.

2.6.3. World Trade Organisation (WTO)

2.6.3.1 Objectives of the WTO

World Trade Organisation replaced General Agreement on Tariffs and Trade (GATT). The GATT is comprised of a trade pact among the member-countries and an organisation. It is basically a forum for international bargaining on lowering the barriers to trade to liberalise it as among countries. It has evolved a set of rules for the conduct of world trade. WTO enforces and update these rules. The agreement establishing WTO reiterates of objectives of GATT:

- (i) Raising standard of living and incomes, ensuring full employment, expanding production and trade, optimal use of world's resources, at the same time extending the objectives to services and making them more precise.
- (ii) Introduces the idea of Sustainable Development in relation to the optimal use of world's resources, and the need to protect and preserve the environment in a manner consistent with the various levels of national economic development.
- (iii) Recognises the need for positive efforts designed to ensure that developing countries, especially the least developed ones secure a better share of growth in international trade.

The WTO will continue the decision making practice followed under the GATT. Decisions will be taken by a majority of votes cast on the basis of one country, one vote.

2.6.3.2 Origin and Evolution of WTO

After the Second World War, many countries got down together to work on ways and means to promote international trade. The result was the signing of the General Agreement on Tariffs and Trade (GATT) by 23 countries in 1947. India was one of the founder members of GATT. GATT was all along concerned with the promotion of international trade through tariff reduction, doing away with non-discriminatory practices among trading partners, and evolving rules to counter protectionism. GATT provided for reduction in and trade restrictions in a phased manner over a period of time. In all, eight Rounds of Multilateral Trade Negotiations (MTNS) were held under the auspices of GATT. Table 1. gives details regarding these different Rounds. The Eighth and Last Round of negotiations was launched in Punta del Este, Uruguay in 1986, known as 'Uruguay Round', this Round took more than eight years of complex negotiations as considerable differences existed among the member nations on the various issue under discussion. The eighth, the Uruguay Round, went beyond the area of trade in goods and covered trade in services and norms and standards of intellectual property rights as well. The signing of the Final Act of the Uruguay Round by member nations of GATT in April 1994 paved the way for the setting up of the World Trade Organisation (WTO). An agreement to this effect was signed by 104 members. The WTO Agreement came into force from January 1, 1995 and India has become one of the 132 founding members of WTO. At present its membership has increased to 143 with China joining as member of WTO recently.

Many more countries, notably Russian Federation, Saudi Arabia etc. are waiting to join it. The first six Rounds of MTNs concerned almost exclusively on reducing tariffs, while the Seventh Round (Tokyo Round) moved on to tackle non-tariff barriers (NTBs). The UR sought to broaden the scope of MTNs far wider by including new areas such as trade in services, Trade Related aspects of Intellectual Property (TRIPs) and Trade Related Investment Measures (TRIMs). It is based on the principles of non-discrimination, free trade, and promotion of fair competition among the member countries.

The Uruguay Round took up three basic subjects for discussion:

1. Reducing specific trade barriers and improving market access;
2. Strengthening GATT disciplines;
3. Problems of liberalisation of trade in services, trade related aspects of intellectual property rights (TRIPs) and trade related investment measures (TRIMs).

Gradually, the canvas of WTO negotiations expanded. In the 1999 Seattle Ministerial Conference, non-trade issues, most stensibly those connected with environment, child labour and labour standards, were also raised, mostly by the developed western economies and the USA. In this conference agricultural issues were reviewed again, but no unanimous discussion could be reached.

<i>Year</i>	<i>Place</i>	<i>Participating Countries</i>	<i>Subjects covered</i>
1947	Havana	23	Tariff cuts on 45,000 products \$IV billion of trade per annum.
1949	France	13	Custom tariffs on 5,000 additional items of international trade was reduced.
1950-51	Britain	38	Tariff reduction on 8,700 items.
1955-56	Geneva	26	The value of merchandise trade subjected to tariff cuts was estimated at \$2.5 billion.
1960-62	Geneva	26	Cut in custom duties amounting to \$5 billion on 4,400 items.
1964-67	Kennedy Round (Geneva)	62	50 percent cuts in tariffs on industrial products worth \$ 40 billion.
1973-79	Tokyo Round (Tokyo)	102	Cut in customs duties by 20-30 percent on goods valued at over \$300 billion.
1986-94	Uruguay Round (Punta del Este)	123	Tariffs, non-tariff measures, intellectual property rights, dispute settlement, textiles and clothing, agriculture, establishment of the WTO etc.

2.6.3.3 Structure and Membership

The structure of WTO is dominated by its highest authority, the Ministerial Conference, composed of representatives of all WTO members, which is required to meet atleast in every two years and which can take decisions on all matters under any of the multilateral trade agreements.

The day-to-day work of the WTO, however, falls to a number of subsidiary bodies, principally the General Council, also composed of all WTO members, which is required to report to the Ministerial Conference. As well as conducting its regular work on behalf of the Ministerial Conference, the General Council convenes in two particular forms-as the Dispute Settlement Body, to oversee the dispute settlement procedures and as the Trade Policy Review Body to conduct regular reviews of the trade policies of individual WTO members.

The General Council delegates responsibility to three other major bodies-namely the councils for Trade in Goods, Trade in Services and Trade-Related Aspects of Intellectual property Rights. Three other bodies are established by the Ministerial Conference and report to the General Council namely. The Committee on Trade and Development, and committee on Balance of Payments and the Committee on Product Finance and Administration. Most WTO members were previously GATT members who signed the Final Act of the Uruguay Round and concluded their market access negotiations on goods and services by the Marrakesh meeting in 1994. A few countries which joined the GATT later in 1994, signed the Final Act and concluded negotiations on their goods and services schedules, and become WTO members. Other countries that had participated in the Uruguay Round negotiations, concluded their domestic ratification procedures only during the course of 1995, and became members thereafter.

Aside from these arrangements which relate to 'original' WTO membership, any other state or customs territory having full autonomy in the conduct of its trade policies may accede to the WTO on terms agreed with WTO members.

2.6.3.4 Functions

The WTO is based in Geneva, Switzerland. Its specific functions are:

1. The WTO shall facilitate the implementation, administration and operation and further the objectives of the Multilateral Trade Agreement and shall also provide the framework for the implementation, administration and operation of plurilateral Trade Agreements.
2. The WTO shall provide the form for negotiations among its members concerning their multilateral trade relations in matters dealt with

under the Agreement.

3. The WTO shall administer the 'Understanding on Rules and Procedures Governing the Settlement of Disputes.'
4. The WTO shall administer the 'Trade Review Mechanism.'
5. With a view to achieving greater coherence in global economic policy making, the WTO shall co-operate, as appropriate, with the IMF and IBRD and its affiliated agencies.

The General Council will serve four main functions:

1. To supervise on a regular basis the operations of the revised agreements and ministerial declaration relating to (a) goods, (b) services, and (c) TRIPs,
2. To act as a Dispute Settlement body,
3. To serve as a Trade Review Mechanism, and
4. To establish Goods Council, Services Council and TRIPs Council, as subsidiary bodies.

The WTO is a more powerful body with enlarged functions than the GATT and is envisaged to play a major role in the world economic affairs.

Self check exercise

- Q.1 What is the full form of WTO?
- Q.2 What are the main objectives of WTO?
- Q.3 Write a note on the organization of WTO.
- Q.4 Discuss the main functions of WTO.
- Q.5 Explain the origin of WTO.

2.6.4 Indian Agriculture and WTO

Agricultural trade was the most hotly debated item on the agenda of the Uruguay Round (UR) of Multilateral Trade Negotiations. It is not because of the issue being new but of the rules applying to agricultural trade were weaker than those applied to manufactured goods, under GATT 1947. The UR agreement on agriculture tried to bring discipline and fair competition in the sector by removing the distortion. The most avowed goal of the WTO is to create a fair and equitable, rule-based multilateral trade system. The most appealing aspect is that the new multilateral trade regime would be transparent and non-discriminatory. All quantitative restrictions (e.g. quotas, mandatory import licensing, other forms of restrictions, etc.) would be replaced by tariff, so as to make the process more transparent and open to international public scrutiny; all reductions and adjustments in tariffs would be effected through negotiations, and are to be notified to the WTO. Most importantly, such reduced tariffs are to be compulsory bound, by each member country, against subsequent increases. Then, all kinds of subsidies would be reduced/eliminated in due course, most substantially by the developed economies, so that the developing economics, under their sheer comparative cost

advantage, could gain larger access to the markets in the developed world. This UR of Trade Negotiations was unique in several respects as it covered many new areas such as agriculture, textiles, technology, intellectual property rights (IPRs), trade-related investment, services etc.

The Agreement on Agriculture (AOA) as a package provides basically three commitments:

(i) Tariffication (Market Access);

<i>Type of Rule</i>	<i>Market Access (Base: 1986-88)</i>	<i>Export Competition (Base: 1986-90)</i>	<i>Domestic Support (Base: 1986-88)</i>
Price	Tariffication of Non-Tariff Measures	Reduction of outlays on export subsidies by 36%	Reduction of aggregate measure of support (AMS) by 20%, except for 'green box' measures.
Quantity	Minimum access commitments 3% of domestic consumption growing to 5%	Reduction in volume of subsidised exports by 21%	
Other	Safeguard Provision	Peace Clause	

2.6.4.1 Tariffication (Market Access)

Tariffication under URAA implied conversion of all non-tariff barriers (NTBs) into equivalent tariff barriers. Once Non-tariff barriers (NTBs) were tariffed, a reduction in the base tariff structure was envisaged under a time bound programme by 24 percent over ten years in the case of developing countries and by 36 percent over 6 years for the developed countries. The least developed countries were exempt from these reductions. In cases, where the bound tariffs were either too high, or tariffication was not done completely, there was a call to maintain current market access by providing a minimum access (quota) equal to 3 percent of domestic consumption of a particular product in the base year 1986-88. This minimum access was to be gradually increased to 5 percent of base period consumption. Lower in-quota tariffs were to facilitate this access; and there tariff-quotas were to be established on a tariff line-by-line basis.

India committed for tariffication of 686 lines under the URAA at 6-digit, or sub-groups of 6-digit, of HS classification.

QR Commitments

In the URA, it was decided to remove all type of QRS or prohibitions (other than tariff), whether maintained through quotas or import-export licenses. India has also agreed to phase out QRS on all commodities (agriculture and non-

agriculture) except for around 632 commodities for reasons related to security, religion, etc. Government of India has phased out QRS on all these 1429 items by March 2001.

2.6.4.2 Domestic Support

Domestic support is to be reduced by 20% over six years period in the total level of trade distorting support from a 1986-88 base, while it is 14% over ten years for developing countries and least-developed countries are not required to make any such commitments. Under 'Green Box' policies certain domestic support are excluded from reduction commitments. Such policies include general government services, for example in the areas of research, disease control, infrastructure and food security. It also include direct payments to producers, income support, structural adjustment assistance, direct payments under environmental programmes and under assistance programmes.

The non-exempted types of subsidies included in the aggregate measure of support (AMS) required to be reduced including assistance in the form of production limiting subsidies and assistance given for growth of agriculture and rural development like procurement at support prices and subsidies on inputs and credit. However, even these subsidies are required to be reduced only if their total amount as a proportion of the value of agricultural production exceeds five percent in case of developed countries and 10 percent in case of developing countries. If the non-exempted subsidies are above these limits, they are required to be reduced by 20 percent in case of developed countries and by 13.3 percent in developing countries by 1999.

According to government of India, India's total AMS is negative (without taking into account exemptions available on input subsidies to low income and resources poor farmers) and there are no reduction commitments. Nor does India have any minimum market access commitments in agriculture sector. Assistance for 'food security' such as food subsidy under the public distribution system (PDS) will be exempted to the extent they confine to the poor.

2.6.4.3 Export Subsidies

The agreement on export subsidies requires WTO members to cut both the amount of money they spend on export subsidies and the quantities of exports that receive subsidies. Taking averages for 1986-90 as the base level, developed countries have agreed to cut the value of export subsidies by 36% over the six years starting in 1995 (24% over 10 years for developing countries), Developed countries have also agreed to reduce the quantities of subsidized exports by 21% over the six years (14% over 10 years for developing countries). Least developed countries do not need to make any cuts.

During the six-year implementation period, developing countries are allowed under certain conditions to use subsidies to reduce the costs of marketing and transporting exports. India hardly provides any export subsidies in agriculture,

expect for a very small sum as freight subsidy for some horticultural products. However, there is a general exception of export income from income tax, irrespective of whether the income from exports of agriculture or non-agricultural commodities.

Overall, the Agricultural Agreement aims to minimise agricultural subsidies and accelerate the opportunities of markets in developed countries for developing and least developed countries.

Self check exercise

- Q.6 What are three commitment of AOA?
- Q.7 Write a note on domestic support.
- Q.8 Write a note on agreement on export subsidies.

2.6.4.4 WTO and Fourth Ministerial Conference at Doha

Recently Fourth Ministerial Conference of WTO was held at Doha from Nov. 9 to Nov. 14, 2001. The Union Commerce and Industry Minister, Mr. Murasoli Maran expressed satisfaction over the outcome of the Doha Ministerial Conference of the WTO saying that the final declaration takes care of India's concerns in Key areas of agriculture implementation, TRIP, trade and transfer of technology and WTO rules. He said the development dimension of agriculture had received focused attention with additional flexibility being given for providing domestic support and protection from imports on grounds of food security and rural development.

Special and differential treatment for the developing countries in all three areas of agriculture-market access, domestic support and export competition-would now be an integral part of the negotiations on agriculture to enable the developing countries to take care of their development concerns.

A commitment for phase out of export subsidies by the developed countries has been secured in the declaration. This would facilitate the Indian farmers access to global markets by making Indian agriculture globally more competitive. The negotiating agenda has also been broadened to include market access for non-agricultural products, rules in the areas of anti-dumping, subsidies and countervailing measures and regional agreements, outstanding implementation issues, the dispute settlement understanding and certain aspects of trade and environment.

2.6.4.5 Fifth Ministerial Conference at Cancun

The fifth WTO Ministerial meeting, held at Cancun, Mexico during September 10-14, 2003, ended without any agreement. In agriculture negotiations, members remain sharply divided over further reforms and liberalization of agriculture. The formation and consolidation of the G-20 on agriculture, of which India is a founder member, as a powerful negotiating group of developing countries with offensive and defensive interests in agriculture, emerged as the most significant development with regard to the agriculture negotiations.

At a Ministers Conference in Geneva during July, 2004, an agreement-WTO

Framework Agreement-was arrived at among the 147 member countries of WTO, which spelled out the broad principles on the basis of which further negotiations will be held for formulating new WTO rules, including India's key demands for ending exports subsidies doled out by the rich nations. A major victory for India and the developing countries is that the USA and the European Union countries have agreed to phase out, in a time bound manner, their domestic and export subsidies to agriculture, amounting to \$440 billion annually.

2.6.5 Summary

In the present lesson we have discussed the objectives, origin, structure and functions of World Trade Organisation. The World Trade Organisation became operational in 1995. With it, started the implementation of the Uruguay Round Agreements (URAs). Before WTO came into being agricultural trade was never subject to GATT disciplines. Therefore, high distortions in agricultural trade between developed and developing countries was a common feature. In other words, the massive direct and indirect subsidies given by developed countries to their agriculture and adaptation of non-tariff barriers (NTB) over the years have been distorting international trade in agriculture WTO Agreement on Agriculture (AOA) is an attempt to correct this distortion. As a founder member of WTO, India is committed to implement various provision of AOA. These include commitments on market access, domestic support and export subsidies. We have discussed these three pillars of AOA. Further we have also given the outcome with regard to agriculture of recently held Fourth Ministerial Conference at Doha in November, 2001. Indian agriculture is going to be influenced by the WTO regime, both positively and negatively. In fact, WTO regime has many safeguards, relaxations and exemptions for the developing countries which India must exploit to its favour. India should try to maximise its gains and minimise its losses in the changing scenario. Indian agriculture faces serious challenges both from inside and outside. In order to meet this challenge, the India Government would have to take serious and bold initiatives.

2.6.6 Glossary

Agreement	:	concurrence
Non discriminatory	:	when there is no biasness, everything is fair and equitable.
Multilateral	:	many sided or many party
Quantitative	:	when something is measured in quantity(amount or number).

2.6.7 Short Questions

1. State two objectives of World Trade Organisation.
2. Give two functions of WTO.
3. What do you mean by market access.

4. Mention three provisions of Agreement on Agriculture.

2.6.8 Long Questions

1. Discuss the objectives and functions of WTO.
2. Explain three major provisions of Agreement on Agriculture.
3. Write a note on WTO.
4. Discuss the origin and Evolution of WTO.
5. Discuss the impact of WTO on Indian agriculture.

2.6.9 Suggested Readings

1. WTO and the Indian Economy by Dr. G.K. Chadha (Ed.) 2001 Indian Eco. Association.
2. GATT to WTO Gandhian Alternative to Nieu by Sandeep Chauhan, Deep and Deep Publications Pvt. Ltd., 2001.
3. World Trade Organisation (WTO) and Developing Countries by Surendra Bhandari, Deep and Deep Publications Pvt. Ltd., 1998.
4. A study of World Trade Organisation by K.R. Gupta, 2000.
5. Indian Economy by S.K. Misra and V.K. Puri, 2000 Himalaya Publishing House.
6. Futile Grandstanding by Rohit Saran in Doha in India Today, Nov. 26, 2001.
7. The Financial Express, Nov. 22, 2001.
8. The Tribune, Nov. 17, 2001.
9. The Indian Economy by I.C. Dhingra, 2000.

Type Setting :

Department of Distance Education, Punjabi University, Patiala.(H.S)
