CHAPTER- III

PROGRESS AT REGIONAL LEVEL

Conditions of agriculture before the planning period

Many years ago, when man settled in a civilised life with family, cultivating of soils, and looking after of domestic animals began, agriculture has been providing much of the contents of welfare, economic and non-economic. A description of both these constituents of general well being separately throws much light on how much societies have owed to it historically, does so even this day and will continue to do in times to come.

Agriculture in India is economically backward, because it is the most undeveloped part of the economy and an overwhelming number of small and poor farmers, a growth cum-welfare promoting policy are the most desirable thing to wish for. However, it was something that was easily seen by its absence during that time.

Before British rule, the agriculture of India was well. The farmers were interested; they used to produce sufficient production for an area. Their whole of economy deepened on agriculture. In addition, agricultural working population was much in that time. However, our agriculture had been unorganised in British rule. In addition, farmers began to leave of agricultural work and engaged in other fields.
Agriculture was not developed during British rule in India. Because the British government did not take the interest in agricultural field and the condition of agriculture was going to down, people began to live in the condition of slave and their economic condition was started to decreased. There were following factors responsible for these problems:

i) Indian people began to live in slavery.

ii) The policies of government were unfavorable.

iii) It was also affected by Indian social structure.

iv) Population increasing rapidly.

v) People did not take the interest in land reforms.

Agriculture development is so important for the development of any country. Nevertheless, British government did not take the interest in agriculture development as a result, the progress of it, was greatly affected. The population was surpluses and condition of farmers was bad. There was no reformed on land, division, and fragmentation of holdings. The farmers became poorer due to excessive taxation. They had neither capacity nor interest for land reforms and they were not sure of the possession of the till the next year. The condition of agriculture gradually falling down.

The condition of these hills was different in British time. There were no facilities of transportation. The people were not settled in one place; they visited from one place. In 20th century, the people began to settle and maximum area was used for forming, new fields were being carved out. Moreover, agriculture production was much higher.
In that time, the maximum population was engaged in the field of agriculture and work hard. Agriculture was main occupation as there was lack of any other business.

**Agriculture development and policies in Planning Period**

Agriculture is the backbone of the Indian economy and despite concerted industrialization in the last five decades; agriculture still occupies a place of pride. “Agricultural development is central to economic development of the country” on the eve of the First National Plan agriculture was in a hopeless and deplorable condition. Indian farmers were in heavy debt to the village moneylender. The moneylenders were having small and scattered holdings. They had neither the money nor the knowledge about proper use of instrument, chemical manure’s and quality seeds. Agriculture was dependent upon rainfall and upon the vagaries of the monsoons. In spite of the fact that nearly 70% of our working population was engaged in agriculture, we were not self sufficient in food grains production but had to depend on import.

1) **Objective of economic planning for the agricultural sector**

While planning to develop the agricultural sector, the planning commission has kept four broad objectives:

i) Increase agricultural production: the aim has always been,

ii) To bring more land under cultivation,

iii) Rise the per hectare yield through intensive application of such agricultural inputs as irrigation, improved seeds, fertilizers, etc.
2) Increase employment opportunities

Apart from increase in production, the agricultural sector has to generate additional employment opportunities and provide scope for increasing the incomes of the poorer sections in our villages.

3) Reduce the pressure of population on land

The basic objective of planning in the agricultural sector has been to reduce the number of people working on land, on the assumption that there are too many people working on land. The surplus labour on land should be shifted to secondary and tertiary sectors, preferably in rural and semi-urban areas.

4) Reduce inequality of incomes in the rural sector

The government should remove the exploitation of tenants and should distribute surplus land among small and marginal farmers in such a way that there would be some degree of equality and justice in the rural areas.

All these four objectives have generally been followed in all our five-year plans but in practice, agricultural planning in India has come to mean increase in agricultural production, viz. the achievement of the first objective: all other objectives have either been ignore, or given lower priority.

Agricultural progress under the Five Year Plans

The planning commission specified the various programmes for increasing agricultural yields such as soil conservation, irrigation, dry farming land reclamation, supply of fertilizers, manures, better ploughs and improved agricultural implements, adoption of scientific methods etc. The
condition of agricultural progress under five year plans have been cleared following:

1) **First Two Plans (1951 – 61)**

The first plan aimed at solving the food crisis, India was facing at that time and eases the critical agricultural raw material situation, particularly the acute shortage of raw jute. Accordingly, it gave the highest priority to agriculture, especially food production by allotting 31 percent of the total public sector outlay on agriculture, but it fixed rather modest targets of production.

The priority was given to agriculture in this plan and 1960 crores of rupees were expended. Rs. 289.9 crores were spent on agriculture and its related business, Rs. 582.9 crores were spent on irrigation and power means etc. The progress of agriculture was according to hope.

It was a first chain for planned development but it had some disadvantages:

i) Any fixed wide plan had not been made for the development of various crops.

ii) Any special attention had not been given on necessary institutional changes for agricultural development.

iii) There had not been done any solution regarding small size of holding, sub-division, and fragmentation of holdings.

iv) Success according to hope did not get in the field of cooperative cultivation.

The plains of India were affected more than the hills by this Plan. Various studies show that the agriculture yield in the plains was more than
present time and farmers were interested in agriculture and its related business. They were hard workings as a result agriculture areas expended.

Green revolution was started in India but this revolution could not progress in hill areas. Agricultural work was done by traditional methods in the period of green revolution in the hill regions. Because, there was no suitable means of transportation and not available fundamental means of agriculture due to this above problems.

In the second fifth year plan, the priority was given to industrialization. Moreover, secure equal opportunities for all, particularly for the weaker sections of the people in the country. Out of total outlay of Rs. 4600 crores during the second plan, a sum of Rs. 950 crores was spent on agriculture. Despite the percentage reduction in plan outlay on agriculture, the progress on the agriculture front was significant, for example, food grains yield recorded nearly 80 million tones, 1960 – 61, as against the target of 81 million tones. Likewise, the production of oil seeds, sugarcane and cotton was much more in 1960 – 61 than 1955 – 56. There was, however, a shortfall in the production of all groups of commodities, as against the target fixed, except in the case of sugarcane in which there was remarkable progress. This plan was succeed in plain regions of India only.

Third and Fourth Plan

With the experience of second plan, agriculture was given first place. The government felt that the success of the agricultural area was an essential condition for the success of the entire plan, this plan fixed ambitious targets of production.
It was during the third plan that the government introduced the new agricultural programme known as Intensive Agricultural District Programme (IADP), which was soon followed by a programme of using improved seeds, viz. High yielding varieties programme (HYVP). The new agricultural technology was expected to usher in the green revolution. However, because of the extensive and serious drought conditions in 1965–66, agricultural production was adversely affected.

In the Third Five Year Plan, Rs. 8577 crores were spent and Rs. 6581 crores were spent on agriculture out of total expenditure Rs. 1,916 crores for irrigation and power etc. the special priority was given to agricultural regarding programmes as irrigation, land conservation, use of fertilizers, quality seeds and its distribution, plant protection, quality agricultural instruments and use of scientific methods but we could not achieve targets. In that, the farmers of hill regions were making time, the new fields for agriculture. The people did not know the importance of trees and they were cutting of trees. Any presentation was not applied in this region.

In Fourth Five Year Plan, again priority was given to agriculture, 17.1% amount of total general expenses were spent on agriculture which includes agriculture research, land conservation, animal care, small irrigation plans, milk, forestry etc. to achieve self-sufficiency in the production of food grains, the target of agriculture production was determined 1290 laces tones while production was 1036 tones and annual growth rate was 4.2%

Following measures were adopted to meet the targets-

i) The main thrust was given to intensive agriculture programmes.
ii) More importance was provided to small irrigation programmes.

iii) The Programme of multi-crops and quality seeds launched.

iv) Single window System was initiated for the dispose of all the matters of the farmers.

v) Small-scale farmer’s development plan for small, marginal farmers and agriculture laborer.

vi) Promotion for the new technique and research work

vii) Facilities of agriculture instruments and chemical manure increased.

viii) Land reform programmes were implemented.

ix) Communal development plan was made powerful.

x) The expansion in the quantity of agriculture credit.

Only the plains of the state were profited by these measures. The new fields on hills were being made. And barren lands were being cultivated but agriculture production was good in this region in that time. The farmers did not know the name of chemical manure.

**Fifth Five Years Plan**

The main aim of this plan was to remove poverty and to achieve self-sufficiency so 22% of the total plan expenditure was spent on agriculture. As a result, the following steps were taken to achieve 4.67% annual growth rate in this plan:

i) New agriculture price policy adopted.

ii) Implementation of land reforms.

iii) Suitable management of land and water.
iv) Increase use of chemical manure.

v) Availability of certified seeds and institutional credit.

Following targets were determined:

i) To start agriculture works in additional 1.1 core hectare land.

ii) The scientific use of water, land and core of fertile land was done by above these targets.

iii) To increase chemical manure use up to 50 lacks tones.

iv) Quality seeds area was to increase 400 lacks hectares.

v) To increase

vi) To available of maximum institutional credit.

The objectives of Five Fifth Years Plan had been determined as per-

i) According to this Five Year Plan, to provide of employment for un-employees and semi-un-employees and to increase in production power of rural farmer workers.

ii) The fundamental necessaries in this plan was to progressed as electric power, irrigation, means and roads and all, included to achieve 6% annual growth rate in agriculture production.

iii) To organized of minimum requirements at the block level, so that the profit was achieved of block by this plan.

iv) According to this plan, the regional im-balance development was to remove.

v) To developed block centers, to bring stability in prices, and to achieve public help under this plan.
During Fifth Five Year Plan Uttranchal was backward and there was great requirement of the means of irrigation, knowledge and method of using chemical manure. The diminishing law of return was applying there, as farmers were not using sufficient amount of fertilizers in their fields.

**Agriculture in hill region in Fifth Five Year Plan**

The following programmed were operated under this plan-

1) **Soya been**

   The farmers were educated about the cultivation use and methods of these crops.

2) **Sun-Flower**

   It is main crop of oilseeds. It is more important than other crops of oil seeds and used for food. The provision of 75% grant had been allowed on the prose of these crops. The climate of this area is suitable for production of this crop but people have to awareness about this crop. In addition, commercial knowledge will have to provide to farmers about it.

3) **Potato**

   The production of potato was much higher in this plan in the comparison to the previous plan. The farmers were interested in the production of potato as this corps were sown in the near of home. The monsoons were regular favourable.

4) **Poultry Farm**

   The proposal had been kept to operate poultry farm related programmes for the development of rural farmers. The economic condition of farmers could be increased and life level improved by these programmes.
The suitable management of grants and revenue expenditure had been done under this plan and regional development might be possible.

5) Plan of reforms of agriculture expenditures

The agriculture conditions of the hills are quite different from that of the plains of India because of the different topographical conditions. It is mostly labour oriented besides there is absence of extensive study and pure data. A simultaneous study was conducted in hills and plains after the abolition of Zamidari system but it could not be conducted properly in the hills. Therefore, Lokpals were given this field of study. They had to conduct the study within one year so they selected 1% villages from each sector. This study conducted between 15 Feb. to 15 June in every year. In addition, study of Ravi and Jayad crops was done on the spot. First study was to be done every year in a village area of Lokpal during Ravi and Khareef crops. The real study would be in the time of Khareef. Lady statistical instructors were appointed for this purpose in order to complete the study in time. The post of statistical officer was created to co-operate with statistical instructors.

6) Irrigation means in agriculture

The priority was given to increase the means of irrigation in this plan. There were the provision for the total management of irrigation, seeds, manure and instruments.

7) Plan to reduce of Go down expenses for agriculture yield

There was no Godown facilities in this area. So the Godown were made available. Loan committees of the farmers were set up to provide loans and to insure their production and sale.
8) Distribution of chemical manure

The farmers of hills were ignorant of the use of chemical manure. The provision of the government aid was done for the transportation of chemical manures to seed centers to sales centers. This continued, from this plan to fourth five years plan. The sufficient facilities of intensive agriculture such as use of chemical manures, pesticides in proposed irrigated land and economic use of chemical manure used in un-irrigated land. In addition, production would be effected by this action. The provision of the government aid for the transportation expenses of manures had been done in fifth five years plan still the proper use of chemical manures had not been.

9) Food grains production

The provision to increase food grains production in this plan for which were made. The suggestions were as follows-

i) - To implemented of regional development plan.

ii) Agriculture Research Institute is must for soil test and other related work.

iii) Intensive training centres are necessary to provide knowledge about new methods and techniques and agriculture.

10) Distribution of seed centers

Seeds are necessary for the growth and quality in agricultural production. All other means of agriculture are damaged the lack of progressive seeds. The quality seeds were provide for whole crops of wheat and paddy. Pesticites were to protect food grains. The plans were made for the supply of the seeds to more part of registered departmental stores before
the time. In addition, even the searches of the seeds were made up Block level. The production and distribution of quality seeds was the main target in this Plan.

**Sixth Five-Year Plan (1980 – 85)**

The sixth plan was hailed as great success, particularly because of the success on the agricultural front. As against the annual growth rate was 3.8% for agriculture, the actual growth rate was 4.3%. During this period, the Indian economy made an all-round progress and most of the targets fixed by the planning commission were realized, though during the last year of the plan many parts of the country faced serve famine conditions and agricultural output was less than the record out put of the previous year. Broadly, however, the sixth plan could be taken as a success. The provision had been kept to increase in the part of poor class in use of public service and consumed, national income according to social and economic targets. The following targets related to agriculture were fixed under this plan:

i) To implemented of land reforms programmes fatly.

ii) To span of new technical profits in agriculture fields of maximum farmers and to increase skill of agriculture management.

iii) To increase in income and employment by agriculture development in rural areas.

iv) To available various types of agricultural inputs.

v) To provided cheap credit facilities for farmers.

The priority was given to land utilization and various crops system reforms in agriculture to increase agriculture yield in hill regions in which
provision had been kept the treatment of progressive agricultural methods as safety regarding treatments, land and soil conservation, to increase in agriculture investments and span of agricultural service, to available chemical manure, quality seed and means of irrigation and the provision had been kept the consolidation of agriculture by increase in two crops areas. The proposal had been kept to increase in production and other cash crops for variety in agriculture and reforms in agriculture system and used of modern technology of agriculture methods.

The special programmes were introduced to reforms in cultivable barren land and to increase in area of cash crops instead of heavy grains. The targets were determined to make the facilities of loan, marketing, communication and to provide suitable price of products to producers.

The following policies were formed for agriculture development and this plan:

i) To use of land, and land level water and the means of irrigation would be increase.

ii) To bring maximum irrigated land under the use of progressive quality seeds.

iii) To utilize agriculture research findings.

iv) Expansion of multi crops areas.

v) The area would be brought under progressive type’s agriculture system by using treatment of land conservation.

vi) More area would be included under the production of cash crops instead of Manduwa and Sawa.
vii) Proper management of supply of Agro-loan, manures, seeds and instruments.

viii) To management of agricultural marketing and storages.

ix) To increase the production of pulses and oil seeds.

Irrigation has important role in progress of agriculture. Agriculture production is not possible without suitable means of irrigation.

The agriculture department for the progress of agriculture had taken the following steps:

i) The seed development and promotion centers would be established in hill.

ii) The 100% government aid for farmers of the hills.

iii) The promotion for the production of oil seeds and other cash crops.

iv) The proposal survey of crop area.

v) The proposal was “Agriculture defense and Kurmulla Abolition Programme.

vi) Establishment of soil test centres in hill.

Having seen the importance of 20th points programmes reduced area of non-cash crops as Manduwa, Sawa etc. and cash crops sowed instead of non-cash crops in hill region. The technical knowledge was provided to increase permanent productivity in un-irrigated areas.

**Agriculture in Seventh Five Years Plan**

In this plan, the priority field was land and water protection. Water management programmes for the development of hill areas. In addition, scientific management of horticulture forestry, animal care, milk
development small irrigation and small industries and cottage included for increase local income and agriculture yield. The priority was also given to the development of sheep, reforms in variety of animal and development of gracing under this plan.

In this fifth years plan, reforms in the land productivity and crops system were important. The main programmes were coffee development, land and water protection, use of chemical manures, and increase in area of cash crops etc. Agriculture was remains undeveloped.

**Aims of Seventh Five -Year Plan**

The following aims were set up this plan.

i) The policies and programmes of this plans were be too implemented in such a way so that they may increase employment opportunities with the foodgrains production.

ii) The targets dealing with social and economic justice speedily.

**The Priorities of Seventh Five -Year Plan**

To increased agriculture growth rate and the following steps were adopted-

i) Formation of seed Go down near agriculture areas and promotion of progressive quality seeds.

ii) The programmes for rice, oil seeds and dry farming would be further expanded.

iii) To increase useful manure in the area of dry farming.

iv) Providing more agricultural land to the farmers.

**Strategy in this Plan**
The following strategy was planned-

i) To improve agriculture technique, to increase agricultural yield, to meet the necessity of small and the marginal farmers.

ii) To increased in crops consolidation.

iii) To developed horticulture, forestry, animal care, tourism, land and water protection etc.

New programs introduced for agriculture development in Seventh Five Years Plans-

The following new programmes were operated for agriculture development-

i) Special rice production programmes started in 430 blocks during 1985 – 86.

ii) Following three programmes were included under oil seed development programmes:

a) National Oil Seed Development Programme.

b) Technical missions an oil seeds.

c) Project related to oil seeds production.

iii) National water shed development programme had been started for the development of dry areas or areas depended on rain.

The Condition of District Pauri in Seventh Five Year Plan

The total reporting area of district Pauri was 733393 hectares and 61.36% of it was the forest area in 1987 – 88. The reporting area increased 0.88% in 1988- 89 while forest area was as it was during 1989 – 90, the
reporting area increased by 2.44% but forest area reduced by 0.0899% thus the total forest year was 59.3% in the period.

The cultureable barren land was 36207 hectares in 1987 – 88 that was 4.94% of total reported area and it did not changed during 1988 – 89 but it increased by 18.62% in 1989 – 90 and it was about 5.6% of total reported area.

The present follow land was 1777 hectares in 1987.88 that was 0.242% of total reported area. In 1988 – 89, it was about about 0.240% and it further decreased in 1989 – 90 and was remained about 0.02% of the total reported area. The other fallow land was 11326 hectares in 1987 – 88 that was 1.54% of total reported area and this against the same in 1988 – 89 whereas it increased 2.27% in 1989 – 90 of total reported area.

The sandy and un-cultureable land was 29291 hectares in 1987 – 88, it was 1.54% of total reporting area, it was same in 1988 – 99 but it increased 13.49% in 1989 – 90 and was 4.4% of total reporting area.

The land used beside agriculture was 16,500 hectares in 1987 – 88 that was 2.25% of total reporting area. It was increased 3 hectares in 1988 – 89 but it was increased 2.59% in 1989 –90. It was 2.23% of total reporting area.

In 1987 – 88, the grazing area was 41487 hectares, which was 5.66% of total reported area, and this gracing area did not changed in 1988 – 89, but it increased 0.029% in 1989 – 90 and it was 5.5% of total reporting area.
The area of horticulture under trees was 58211 hectares in 1987 – 88 that was 7.94% of total reported area and it did not changed in 1988 – 89, but increased 0.99% in 1989 – 90 that was 5.53% of total reported area.

The net sown area in 1987 – 88 was 94779 hectares; it was 12.93% of total reported area. This area was increased by 6.896% in 1988 – 89 but it decreased about 4.76% in 1989 – 90 and it remained about 12.72% of the total reported area.

The area sown more once was 49667 hectares in 1987 – 88, it was 1.96% of total reported area, it increased 7.88% in 1988 – 89 but it decreased 5.15% in 1989 – 90, it was 6.7% of total reported area. The total sown area was 14460 hectares in 1987 – 88, and 19.69% of total reported area, it increased 7.22% in 1988 – 89, but it decreased 4.89% in 1989 – 90 and 19.43% of total reported area.

The gross irrigated area was 14768 hectares in 1987 – 88, it was 2.01% of total reported area, and increased 13.09% in 1988 – 89 but it decreased 7.92% in 1989 – 90. The net irrigated area was 11896 in 1987 – 88, it decreased 25.11% in 1988.89 and decreased 10.18% in 1989 – 90 was 1.055% of total reported area.

Canals, in 1987 – 88, 40.25% in 1988-89 and 44.75% in 1989-90 in district Pauri the irrigated area was going to increased in every year irrigated the 33.14% area.

In 1987-88, the total area of Paddy was 25143 hectares in which, 25.49% was irrigated, this area increased by 10.45% in 1988-89 and irrigated area was 18.03% and increased by 7.58% in 1988-89. However,
area of Paddy decreased by 7.78% in 1989-90 and irrigated area of paddy was 24.175%. The total area of wheat was 41336 hectares in 1987-88 and irrigated area was 16.76%. In 1988-89, the area of wheat increased 8.69% but it decreased 4.95% in 1989-90. The irrigated area was 17.12% in 1988-89 and 18.11% in 1989-90, this irrigated area increasing.

The area of barley was 8616 hectares in 1987-88 and it increased 2.34% in 1988-89 but decreased 7.67% in 1989-90. The total area of maize was 2148 hectare in 1987-88; it increased 10.48% in 1988-89 but decreased 3.61% in 1989-90. The irrigated area of rice was 2.19% in 1987-88, 3.065% in 1988-89, and 1.83% in 1989-90. The total area of rice was going to decrease in 1989-90 but also percentage of irrigated area. The area of Manduwa was 35839 hectare in 1987-88; it increased 6.83% in 1988-89, but decreased 12.04% in 1989-90. The area of sawa was 21.04% in 1988-89. This area was also 1.12% increased in 1989-90.

The area of total pulses was 3771 hectare in 1987-88 and 1988-89, but increased 34.76% in 1989-90. The irrigated area of pulses was 3.845% in 1987-88 and 1988-89 but it was 6.946% in 1989-90, this irrigated area was increased and total pulses area was also increased in 1989-90. The total oil seed area was 749 hectare and irrigated area was 27.90% in 187-88 and 1988-89. However, this area was increased 22.16% in 1989-90 and irrigated area was 40.76% in this year. In 1987-88, the total area of Potato was 258 hectare and was same in 1988-89, but it increased 21.70% in 1989-90. The irrigated area of these crops in 1987-88 was 25.19% but this area was decreased 5.13% and was 20.06% in 1989-90. The length of canals in 1987-
88 was 624 Km, it increased 25.48% in 1988-89, 5% in 1989-90, and 6.40% in 1990-91 in this district Pauri. In 1989-90, the 44.75% irrigated work done by canals, 51.89%, 3.36% by government hand pump and 51.89% by other means.

The 479-ton chemical fertilizer was distributed in 479 in which was 57.83% Nitrogen, 36.12% Phosphate, and 6.054% Potash in 1987-88, in 1088-89, this chemical fertilizer was increased 33.19%, the Nitrogen was 55.96%, Phosphate-34.33%, and Potash was 9.72%. However, total distribution of this manure was decreased 5.799% in 1989-90. In this year, Nitrogen was distributed 57.07%, Phosphate-39.27% and Potash was distributed-3.66%.

The percentage of gross sown area from pure sown area was 150.1 in 1988-89 and 152.7 in 1989-90, and it was 150.1 in 1990-91. The percentage of pure sown area from gross sown area under food grains crops was 96.2% in 1988-89, but it decreased 0.5% in 1989-90, and also decreased 0.5% in 1990-91 in district Pauri. The percentage of gross irrigated area from pure irrigated area was 186.2 in 1988-89 and decreased 19.5 in 1989-90, but increased 19.00 in 1990-91. Moreover, the percentage of gross irrigated area from pure sown area was 8.8, in 1988-89 and increased 0.6% in 1989-90, and increased 1.1% in 1990-91.

The production of total food grains in 1987-88 was 98016 metric tons and it was increased 63.04% in 1988-89, but decreased 5.068% in 1989-90. In addition, the total production of oil seeds in 1987-88 was 296 metric tons and increased 27.14% in 1988-89, and increased 40.65% in 1989-90. In
1987-88, pulses production was 1678 metric tons, increased 17.82% in 1988-89, and increased 15.33% in 1989-90.

The average production of rice was 6.37 quintile per hectare in 1987-88, and increased 67.50% in 1988-89 but decreased 1.59% in 1989-90. In 1987-88, the average production of wheat was 8.40 quintile and increased 32.02% in 1988-89, but it decreased 1.80% in 1989-90. The average production of barley was 7.31 quintile per hectare in 1987-88. Nevertheless, increased 30.92% in 1988-89, and 14.73 in 1989-90. Manduwa was 6.16 quintile in 1987-88 and increased 75.65% in 1988-89, and 3.23% in 1989-90. In 1987-88, the average production of maize was 6.46 quintile and increased 37.93% in 1988-89 but decreased 8.19% in 1989-90. The average production of Potato was 193.73 quintile per hectare in 1987-88, but decreased 5.03% in 188-89 and 1.065% in 1989-90 in this district.

According to economic calculation 1991, the total number of rural industries was 11830 in which 1.55% was related to agriculture and rest 98.45% was non-agricultural. In addition, total number of urban industries was 4468 in which 0.246% was related to agriculture and rest 99.75% non-agricultural. The 22912 workers were working in rural industries in which 91.17% were man and rest 8.83% women. In addition, workers engaged in urban industries were 17182 in which were 93.85% Male and rest 6.15% female in district Pauri.

The district Pauri has 12.95% fruits area, and 16.13% vegetables area, out of total area of Uttranchal.

**Eighth Five Year Plan (1992 – 97)**
This plan was sound in its approach and the strategy of development and in the targets of agriculture yield. The conditions of weather and climate were favorable and broadly, many of the targets could be fulfilled. The production of oil seeds, sugarcane, cotton and jute were more than the targets of these crops in this plan. The target of agriculture growth rate was 3.1% in this plan. The main aims of this plan in agriculture field were following:

i) To increase the income of farmers.

ii) To increase production and productivity according to increasing demand.

iii) To increase the export of agriculture products.

iv) To reduce un-employment in rural areas.

v) To develop agriculture related activities.

vi) To apply land reforms act effectively.

vii) To take research in agriculture fields.

viii) To develop of technique according to local conditions.

ix) To improve agricultural marketing.

x) To increase agriculture production in low productivity areas.

**Agriculture Progress in District Pauri under Eighth Five-Year Plan**

The total reported area in 1993-94 was 759650 hectares and it was increased 7.00 hectares in 1994-95, but it decreased 4.00 hectares in 1995-96. The forest area was 59.40% of total reported area in 1993-94, 1994-95 and 1995-96, but this area increased to 7.00 hectare in 1994-95. The cultureable land was 44308 in 199-94 and 1994-95 but it decreased by
1.62%, in 1994-95. It was 5.737% of total reported area in this Five Year Plan. The average current fallow land was 144.33 hectare in this plan, which was 0.0189% of total reported area, and other fallow land was 2.345% of total reported area under this plan. In 1993-94, the land used beside agriculture was 17465 hectare; it increased 0.39% in 1994-95 but decreased by 1.11% in 1995-96. The average grazing area was 43158.67 hectare, which was 5.68% of total reported area. This area was increased by 3.006% during Five Year Plan. The average horticulture / land under trees were 61397.33 hectares in this plan and increased 4.81% in the compassion of Seventh Five Years Plan. The net sown area was 89794 hectare in 1993-94 it decreased 0.967% in 1994-95 but it increased 2.75% in 1995-96. The total sown year decreased 5.31% in this planning period. The area sown once more was 48998 hectares in 1993-94 and increased 4.77% in 1994-95 but it decreased 1.37% in 1995-96. This year was decreased 0.38% in this planning period. The gross irrigated area was 17662 hectares in 1993-94 and this area decreased 6.69% in 1994-95 but increased 0.504% in 1995-96. This area was increased 7.69% in this planning period. In 1993-94, the pure irrigated area was 9395 hectares and it decreased 8.81% in 1994-95, and increased 2.25% in 1995-96. This area was 9.47% in this Five Year Plan. The area of Paddy was 24774 hectares in 1993-94, and decreased 11.46% in 1994-95 but increased 19.198% in 1995-96, and its irrigated area was 33.15% in 1993-94, it decreased 4.28% in 1994-95 and 0.53% in 1995-96. The area of paddy increased 2.09% and its irrigated area increased 26.31% in this Five Year Plan.
The total area of wheat was 39701 hectares in 1993 – 94, it increased 5.14% in 1994-95 and decreased 5.059% in 1995-96 and its irrigated area was 8061 hectares in 1993-94 and it decreased 5.76% in 1994-95, but it increased 0.28% in 1995-96. The area of wheat was decreased 7.198% and its irrigated area decreased 1.51% in this Five Year Plan. The area of barley was 8008 hectares in 1993-94, it decreased 6.33% in 1994-95 but it increased 32.049% in 1995-96, and its irrigated area was 101 hectares in 1993-94 and decreased 0.99% in 1994-95 and 10% in 1995-96. The area of this crops increased 17.97% in this Five Year Plan. The area of maize was 2303 hectares in 1993-94, and it decreased 2.34% in 1994-95 but increased 1.51% in 1995-96 and it’s irrigate area was 76 hectares in 1993-94 and it decreased 23.68% in 1994-94 and 36.21% in 1995-96. Its area was decreased 0.52% in this plan.

The area of manduwa was 36055 hectares in 1993-94, and decreased 11.025% in 1994-95 and 2.27% in 1995-96. This area was decreased 6.91% in this Five Year Plan. The interest of farmers is reducing in these crops. The total area of sawa was 20488 in 1993-94; it increased 5.51% in 1994-95 but decreased 2.03% in 1995-96. The area of this crops decreased 9.41% in this Five Year Plan.

The total area of pulses in 1993-94 was 4825 hectares, and decreased 5.64% in 1994-95, but increased 2.79% in 1995-96 and its irrigated area was 102 hectares in 1993 – 94, it increased 76.47% in 1994-95 but decreased 5.56% in 1995-96. The area of this crop decreased 7.91% and its irrigated area 51.84% in this five years plan. The area of total oil seeds in 1993-94
was 976 hectares and it was same in 1994-95 but it decreased 16.086% in 1995-96 and its irrigated area was 525 hectares in 1993-94, and decreased 3.81% in 1994-95 and 52.87% in 1995-96. This area decreased 10.49% and its irrigated area 36.19% in this Planning Period. The area of potato was 313 hectares in 1993-94 and increased 15.34% in 1994-95 and 1995-96. Its irrigated area was 63 hectares in 1993-94 and decreased 1.5% in 1993-94 and 1995-96. The area of this crop creased 13% but its irrigated area decreased 1.58% in this Five Year Plan.

The total production of paddy was 27460 metric tons in 1993-94, and decreased 6.875% in 1994-95 but increased 4.52% in 1995-96. The production of this crop was decreased 0.64% in this Five Year Plan. The production of wheat was 38173 metric tons in 1993 – 94, and increased 20.47% in 1994-95 and 9.702% in 1995 – 96. Its production increased 6.72% in this Five Year Plan. The production of manduwa was 39540 metric tons in 1993-94 and decreased 0.32% in 1994-95 but it increased 2.59% in 1995-96. This production of this crops increased 7.765% in this Five Year Plan. Maize production was 2264 metric tons in 1993-94 and increased 4.77% in 1994-95 and 2.276% in 1995-96. In 1993-94, barley production was 7538 metric tons and increased 9.47% in 1994-95 and 28.50% in 1995-96. Sawa production was 25624 in 1993-94 and increased 5.612% in 1993-94, and 1.134% in 1995-96 its production increased 2.23% in this Five Year Plan.

The total production of pulses in 1993-94 was 2215 metric tons and increased 8.93% in 1994-95 and 0.95% in 1995-96; its production increased
6.84% in this Five Year Plan. The oil seeds production was 699 metric tons in 1993-94 and decreased 7.58% in 1994-95, 2.63% in 1995-96. However, it production increased 21.19% in this Plan.

The potato production was 6079 metric tons in 1993-94 it increased 7.93 in 1994-95 and 10.5% in 1995-96.

The 533 metric tons chemical manure was distributed in 1994-95 in which 63.41% was nitrogen, 32.6% phosphorus and rest 3.94% potash but only 348 metric tons manure was distributed in 1995-96 in which 71.55% was nitrogen, 24.71% phosphorus and rest 3.73% potash.

The gross irrigated area was 17662 in 1993-94, but it decreased 6.69% in 1994-95 and increased 0.503% in 1995-96. The pure irrigated area was 9395 hectares in 1993-94, and decreased 8.81% in 1994-95 but it increased 2.25% in 1995-96. The gross irrigated area increased 7.69% but pure irrigated area decreased 9.47% in this Five Year Plan.

The length of canals was 971 Km in 1994-95 and it increased 0.515% in 1995-96 but it decreased 6.45% in 1996-97. Because, it is damaged due to geographical conditions. The number Diggi was 5303 in 1994-95 and increased 1.51% in 1995-96 but it decreased 4.069% in 1996-97. The number of hydram was 126 in 1994-95, 168 in 1995-96 and 131 were 1996-97. The length of Gool was 1204 Km in 1994-95 and it increased 7.72% in 1995-96 and 4.086% in 1996-97. Canals, 6.6% by government hand-pump and 49.7% by other means in 1995-96 in this district Pauri did the 43.7% irrigated work.

**Ninth Five-Year Plan (1997-2002)**
This plan was not much of a success, as far as the agricultural targets were concerned. However, the following main factors were related with agriculture development:

i) To land management with scientific methods.

ii) To bring variety in agriculture production systems.

iii) To reconstruction of National Water Shed Programme for rain irrigated areas.

iv) To improved the use of bio-fertilizers, chemical fertilizers and re-used of wasted materials.

v) To promote of agriculture related work.

vi) To expand of fundamental facilities regarding marketing and storage.

vii) To developed of vegetables, fruits and flowers for export.

viii) To make of agricultural based industries for international competition.

ix) To fast implemented of land reforms programmes.

**Strategies of Agricultural Development under this Plan**

A significant shortfall in public sector investment in agriculture was observed in the eighth plan; this could not be allowed in the Ninth plan. Composition of investment has to change from long-gestation to short-gestation projects, which requires the optimal use of the existing resources (particularly irrigation potential). Credit is one of the most important determinants of private investment and its availability at reasonable rate has to be ensured.
Accelerated agricultural growth of 4.5 per cent in the Ninth Plan with 3.82 percent growth of crop production could come about only through increased cropping intensity and higher yields, and is based on the following conditions:

i) Cropping intensity to rise from 1342 to 140.4 per cent.

ii) Value of yield to rise from Rs. 15,326 per hectare to Rs. 17,688 per hectares at 1996-97 prices.

iii) Gross cropped area to rise from 190.5 million hectares to 203 million hectares.

iv) Fertilizer consumption to rise from 14.3 million tones to 20 million tons.

There is a symbiotic relationship between agricultural and rural non-farm sectors through backward and forward linkages. For rapid agricultural growth, rural non-farm activities need to be encouraged. These are also a need to diversify within agriculture itself. In this, animal husbandry, diary and fishery are expected to be major contributors to the achievement of 4.5 per cent rate of growth both domestic demand and exports must rise rapidly. However, a high target rate of growth of agricultural output and export would also require a massive expansion and up gradation of agricultural marketing, storage and distribution infrastructure, facilities for packaging, grading and certification of agricultural commodities and development of future markets would require special attention.\(^4\)

The reported area of district Pauri was 708237 hectares in 1997-98, and increased 6.28% in 1998-99, in 2001-02, this area was 752364 hectares.
The forest area was 59.03% total reported area in 1999-2000. This area increased 0.082% in 2000-2001 and it in 2001-02. The cultureable wastage land was 42489 in 1999-2000, and it increased 8.56% in 2001-2002. The follow land was 18692 hectares in 2001-02 it was 2.48% of total reported area. The sandy fallow land was 35582 hectares in 2001-2002; it was 4.73% of total reported area. This land increased 4.86% in this Five Year Plan. Area under horticulture trees in 2001-2002 was 64180; it was 8.53% of total reported area. This area increased 5.18% in ninth five years plan. Because government is going to provide the priority to this field at present, land used besides agriculture was 16748 hectares in 1999-2000 and it increased 8.56% in 2001-2002, it was 2.42% of total reported area. This area increased 4.86% in this plan. The grazing area was 41449 in 1999-2000 and it increased 8.56% in 2000-2001 and 0.049% in 2001-02, it was 5.98% of total reported area. In addition, it increased 4.91% in this Five Year Plan.

The gross sown area was 122988 hectares in 1997-98, and increased 22.78% in 1998-99, 17.02% in 1999-2000 and 0.082% in 2001-02. The net sown area was 83581 in 1997-98; it increased 18.17% in 1998-99, but decreased 6.78% in 2001-2002. This area increased 0.763% in this Planning Period. The area sown more than once was 52240 hectares in 1999-2000; it decreased 14.8% in 2000-2001 but increased 0.206% in 2001-2002. This area decreased 11.94% in this Five Year Plan.

The rice production was 32536 metric tons in 1998-99, but its production decreased 28.87% in 1999-2000, and 21.93% increased in 2000-01, and decreased 17.55% in 2001-02. The production of this crop decreased
14.889% in this Five Year Plan. The wheat was 4295 metric ton in 1998-99 and decreased 0.46% in 1999-2000, 31.39% in 2000-2001 and increased 18.93% in 2002-03. Its production decreased 30.85% in this Five Year Plan.

The production of manduwa was 47822 metric ton in 1998-99 but it decreased 20.5% in 1999-2000, and 4.77% in 2000-01, but it increased 3.31% in 2001-02. Its production decreased 7.74% in this five years plan. In 1998-99, the production of sawa was 28719 metric tons but it decreased 21.49% in 1999-2001, 4.12% in 2000-01 but it increased 3.39% in 2001-02, its production decreased 18.34% in this Five Year Plan. The production of barley was 6238 metric ton in 1998-99; it increased 23.28% in 1999-2000 but decreased 0.91% in 2000-01 and 7.58% in 2001-02. Its production decreased 22.68% in this Five Year Plan.

The total production of pulses in 1998-99 was 1902 metric tons in which 44.53% Horse bean, 34.43% lentil, 3.05% Grums, 1.52% Pea and 16.456% Arhar, its production increased 23.396% in 1999-2000 in which 54.78% horse bean, 36.21% gram, 24.13% pea and 25.56% Arhar but lentil decreased 19.389%. In 2000-01, its production decreased 0.51% but it increased 6.89% in 2001-02, in which 7.481% horse bean, 9.615 lentil, 6.41% Grams, 5.71% pea and 1.53% Arhar increased. The production of pulses increased 2.46% in this Five Year Plan.

The total production of oil seeds was 669 metric tons in which, 518 metric ton mustards, 40 metric ton sesame, 1.00 metric ton sunflower and 110.00 metric ton soybean in 1999-2000 whereas it was 466 ton in 1998-99, it increased 43.56%. This production decreased 21.52% in 2000-01 in which
22.59% mustered 15% sesamum and 18.18% soybean decreased, its production decreased 84.95% in 2001-02, which was more decreased.

**Soil Erosion**

There are four units of land erosion in Pauri. Kotdwara, Satpuli and Duggadda in District. The planning work and survey has been done in 7510 hectare land by these units in 1998-99, and 7420 Km Goal was formatted.

**Drought Prone Area Plan (DPAP)**

This Plan is operating in 10 blocks namely Pauri, Kotdwara, Khirsu, Kaljikhal, Pabau, Thailsain, Beuronkhal, Dwarikhal, Jairikhal and Akeswar in this district under Drought Eradication Plan. The aims of this plan were to maintain ecological balance, to open opportunity of employment in rural areas and to reduce the effect of drought. It is expended 28% on land conservation works, 24% social forestry, 18% water resources 13% horticulture; fishery, animal husbandry etc. and 10% project administration under this plan.

**Horticulture and Vegetables Production**

This area is better for fruits and vegetables production than agriculture. The vegetables can be produced in throughout the year due to different climate in high and low areas. This production is low due to lack of irrigated facilities.

There are 10-government horticulture, 23 horticulture flying squad centers, 5 fruit protection centre and 6 mushroom units in this district at present. In addition, Potato Development Programme is operating in District.
In 1998-99, 450 thousand fruits trees, 7620 Kg vegetable seeds, and 730 quintiles quality potato seeds was distributed. The old horticulture had been reconstructed in 45-hectare areas.

There are so many developmental programmes were operating since 2001 by agriculture department in this district. These plans are as follows:

1) Seed Gram Yojana

This programme is being operated in a compact area with the certified seed in Ravi and Khareef crops. It is a provision of the grant Rs. Rate of 1000/- (one thousand) per hectare for farmers after registration of farmers in Uttranchal seed and organics certification institute.

2) Bio-fertilizer and Micro Element Instigator Programme

It is 25% grant in the distribution of Zinc Soleplate and culture/P.S.B. packet for the treatment of crops and seeds under this programme.

3) Agriculture Technique Transfer Plan to Woman Farmers

The modern knowledge and techniques are being provided to women farmers for the increasing the participation of women in agriculture, this is done in so many ways such as, visit to agriculture research centers, literature distribution, making group of women at Gram and Nyaya Panchayat level by regional employees.

4) Agriculture Defense Programme and Insect Diseases Control

Under this plan, the chemicals and pesticides distribute to the farmers in which 50% as granted as aid free of cost subsidiary.

Macro mode Managing Programme

1) Certified Seed Distribution
In this grant, Paddy seeds worth of Rs. 200 and Wheat seeds worth of Rs. 400 distributed among the farmers.

2) **The Presentation of Area of the Technique**

All the farmers along with agricultural invests provide per acre 1000. The goal of per crop is prescribed 4.00 acre in all the blocks.

3) **The Distribution of agriculture Instrument and its Defense**

**Instruments**

The agriculture instruments are distributed to farmers, on grant of 25% in this district.

4) **Fast Maize Development Programme**

Under this scheme, many programmes are being operated in this district namely; distribution of certified seed, agricultural instruments, and presentation of IPM and trading is going to provide to farmers with this scheme.

5) **National Pulses and Oil Seeds Production Programmes**

Under this programme, the grant is given certified seeds up to maximum 800 per quintile or 30% whichever is less. Besides it, the grant is given maximum Rs. 2000/- for Block exhibition and 50% for agriculture instruments. There is also provision to provide the training for farmers.

6) **Bio-Programme**

This programme is being operated to increase agriculture yield and increase fertility. It also helped to maintain balance of nature and environment.
The five villages from every block i.e. 75 villages were taken since 2001 to 2003-04 under this programme. In addition, total 1125 framers were selected and they got the profit. An E.M. kit was provided to farmers for bio-agriculture. This programme was so successful that government declared Uttaranchal a Bio-State.