CHAPTER - VI

SUMMARY AND CONCLUSIONS
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India is predominantly an agrarian society, with two thirds of the population living in rural areas earning a livelihood through agricultural related activities. Their wellbeing is directly related to the productivity of their land and the health of the environment. Around 35 percent of India’s population live under the officially defined poverty line, of which 84 percent live in rural areas. The total geographical area of the country is 328.7 million hectares (repeated 305 million hectares) with per capita holdings of 0.35 hectares. Only 43 percent of the total area is under cultivation. During the past four decades agricultural production has increased consistently mainly due to the Green Revolution but the per capita availability of food grains have not kept pace due to the rapidly growing population.

Agriculture and poverty has close linkages, since a majority of the poor live in rural areas and their source of livelihood is farming or farm related activities. In absolute terms the number of poor in India rose from 164 millions in 1951 to 350 million at present, of which the majority live in rural areas. Agricultural laborer, marginal and small rainfed landholders are the most prone to poverty, and as is the case for tribal and forest dwellers who depend upon the forest for their subsistence.

Various interventions to alleviate poverty were piecemeal efforts without any emphasis on profound improvement of the land resources and the livelihood of the poor investment in agriculture development mainly concentrated on the Green Revolution pockets, in providing irrigation, high yielding varieties and fertilizers to those who could afford it. Through these measures only 35.15 percent of the total cultivated area could be covered. The rest of the cultivated area is rain dependent resulting in low productivity and uncertainty in production, thus creating excessive pressure on the land resources. In the dry land areas this has created gradual depletion in ground water availability and excessive environmental degradation. Approximately 5,300 million tones of soil is being lost every year, which is around 16 tones per hectare. Along with the soil, other plants nutrients such as nitrogen, phosphorous and potassium are also being lost.
Watershed management is the conservation and regeneration of an entire catchment area of a drainage line through different physical and vegetative measures. The objective is to prevent soil erosion and increase soil moisture content, increase the ground water level and conserve the biomass cover of the soil. It results in an improved land productivity, ensure availability of water for protective irrigation and the increase fodder, fuel, fibre availability. Watershed management activities may also result in a doubling of the annual yields (i.e. rabi and summer crops also) as well as in adopting improved technologies, diversified land use pattern and other economic activities like dairy production.

Agriculture forms the backbone of Indian economy and despite concentrated industrialization in the last five decades, agriculture occupies a place of pride. Being the largest industry in the country, agriculture is the source of livelihood for over 70 per cent of population in the country. The significance of agriculture in the national economy can be best explained by considering the role of agriculture.

An analysis reveals that, 37.0 per cent of actual expenditure in the First Plan was for agriculture and allied activities. This percentage declined sharply to 20.9 in the second plan on account of the adoption of the Mahalanobis strategy which called for a massive increase in the expenditure on the industrial sector particularly heavy and capital goods sector. In fact, the share of industry and minerals in total plan expenditure which was only 2.8 per cent in the First Plan rose to 20.1 per cent in the Second Plan. The percentage share of agriculture in total plan expenditure in the Third Plan was approximately as the same as under the Second Plan After the Third Plan, the share of agriculture in total plan expenditure has varied between 20 and 24 per cent. In the Ninth plan, it is expected to be 19.8 per cent (i.e. almost one-fifth of total plan expenditure).

Dry land areas in the country, account for about 70 per cent of the cropped area and contribute more than half of the country’s food grains production. These areas share 60.80 per cent of the output of coarse cereals, major oilseeds and fibre crops. Even after realizing the entire irrigation potential in the country, about half of the area will still remain un irrigated. The sheer weight of this in crop economy alone can suppress or enhance the growth performance at the country.
Irrigation is deemed necessary for the maximum production of most farm crops, especially in the arid and semi-arid regions. Even in the areas of high rainfall, irrigation of second and third crop or for multiple cropping when rainfall fails. According to the I.C.A.R., the production of irrigated crops is on an average 50 to 100 per cent higher than that of the unirrigated crops in the same locality. In India the growing population demands higher quantities of food grains for its consumption, but in the absence of which imports ranging from 150 to 200 crores of rupees per annum have to be made. To cut short imports, self-sufficiency in food grains is very necessary. This can be achieved, besides putting various inputs in the fields, through increasing irrigation facilities. In fact, among the measures that may be adopted for increasing area under cultivation and the yield of crops, the first place is must be given to the works for the supply and conservation of water.

Irrigation in India has been practiced from ancient times and irrigation tanks and wells are a familiar feature of the Indian landscape to supplement and conserve the rainfall. Provision of water for the cultivation had figured prominently among the duties enjoined on the rulers of the land, who undertook the construction of irrigation works as benevolent works and many of the munificence of kings and philanthropists.

An intensive programme known as Integrated Dry Land Agricultural Development, was launched in 1970-71, initially in pilot projects (in Hyderabad; Rajkot, Hissar; Indore, Sholapur, Bellary, Jodhpur, Tirunelvelly and Jhansi). Later on it was introduced in 15 more pilot projects during 1971-74 in Anantapur, Palamau, Kutch, Mohindergarh, Jammu, Rowa, Akola, Hebbel, Bijapur, Udaipur, Bhilwara, Salem, Ghazipur, Agra and Bhubaneshwar. During 1977-78, 24 pilot schemes were in progress. Each project covered an additional area of 800 hectares. The programmes include cultivation of drought resistant, short duration and high yielding varieties of crops with package of practices, land development including land shaping and land leveling, construction of well, bunds and bundies and distribution of improved farm machinery, seeds, fertilizers and pesticides.

Traditionally, India depended on agriculture and the Indian farmers themselves maintained the watersheds, ponds, tanks and irrigation system for centuries. As noted by Jalswal and Purandare (1995), the farmers and villagers themselves undertook activities such as desiltation of water channels and ponds,
protection of vegetative and soil conservation activities collectively under the guidance of village councils. Increase in population pressure and erosion of socio-religious-political institutions degraded the land, water and vegetation.

The need for public effort in watershed development was recognized in India soon after independence. Watershed approach was put to practice for the first time in the country in 1949 by the Damodar Valley Corporation. Major multipurpose irrigation projects launched in India aimed at improvement of mega watersheds. The importance of micro watershed development was recognized and practiced in the country since 1973 due to the recommendations of the Task Force on Integrated Development of Drought Prone Areas. From 1979-80, watershed development was transferred to the State Governments as per the recommendations of the National Development Council.

During the implementation of Watershed Development Programmes, many constraints have come to force. To inquire into these constraints and to suggest suitable remedies, a committee was appointed in 1993 under the leadership of Prof. C.H. Hanumantha Rao. On the basis of the recommendations of this committee, the Technical Committee on DPAP and DDP (1996), the Ministry of Rural Development Programmes in the country. The following guidelines of the Watershed programmes in India.

Anantapur district was a part of Ballary District in the 1880 and was separated from the same district in the year 1882. It was expanded with the addition of Revenue Mandals of Kadiri, Mudigubba, Nallamada, Nambulapulikunta, Talupula, Nallacheruvu, O.D.Cheruvu, Tanakal, Anmadagur and Gandlpenta. During the year 1956, the Revenue Mandals of Rayadurg, D.Hirehal, Kanekal, Bommanahal and Gummagatta of Rayadurg, D.Hirehal, Kanekal, Bommanahal and Gummagatta of Ballary District were added to Anantapur district. At present, the district has been divided in to three Revenue Divisions namely Anantapur Division, Dharmavaram Division and Penukonda Division with 63 Revenue Mandals with 20, 27 and 26 Mandals in each Division respectively.

The total geographical area of the district is 1915219.43 hectares. Out of this during the year 1989-90 about 53 percent is the net sown area (1,015,307.60 hectares), 10.27 percent is under forests (196,880.97 hectares), 9.17 percent under barren and uncultivable land (175,750.20 hectares), 8.29 percent is land put to non-agricultural use (158,897.57 hectares), 7.39 percent is under current fal-
lows (141,663.15 hectares), 6.34 per cent is under other fallows (121,607.69 hectares), 3.67 per cent is under cultural waste land (70,357.89 hectares), 1.21 per cent under permanent pastures (23,336.03 hectares), and 0.59 per cent is under miscellaneous crops (11,424.29 hectares). About 28,256.27 hectares (1.47 per cent of the graphical area) in the area are sown more than once and 1,043,563.96 hectares is the total cropped area (54.48 per cent). During the year 1989-90 the total area under food crops forms about 12 per cent of the total cropped area and non-food crop alone accounts for about 70 per cent of the total cropped area in the district.

The data reveals that during 1995- to 2000-2001, 473 watersheds were sanctioned in Ananatapur District. In the year 1998-99, 120 watersheds and in the year 2000-2001 only 10 were sanctioned. The Government has not followed uniform approach in the sanctioned of watersheds in the Anantapur District.

An analysis shows that the higher number of villages, where watersheds were sanctioned in the year 1995-96, in the year 1996-97, only 10 villages were covered, followed by 111,96 and 10 which shows that ambiguous in covering villages. The data reveals that more number of associations were formed in the year 1995-96, followed by 120 in the year. 1998-99, 50 in the year 1999-2000 and only 19 in the year 1996-97. Which clearly shows more number of associations were formed in the beginning.

The data reveals that 91.33 per cent of amount was spent in the year 1996-97 towards watersheds, followed by 1995-96 and 1998-1999. On the whole 44.91 per cent of funds were utilised for the construction of watersheds, which shows that the funds were not fully utilised.

After the implementation of watershed programme with regards to the family expenditure there is highest increase in milk and milk related products i.e. 265.36 per cent and also increase in the commodity i.e. Sugar and Jower 48 per cent, Education of Children 40.93 per cent Meat and Eggs 28.88 per cent; Fuel and Lighting 20.78 per cent, Edible Oil 13.35 per cent, Cloth 11.93 per cent, Family Ceremonies 10.45 per cent and increase in Medicine 7.99 per cent. Which clearly shows that the standard of living has improved after implementation of the watershed programme. There is highest increase 86.76 per cent of income come from, 3.92 per cent income from Animal Husbandry, 6.68 per cent of income come from Agricultural Labour and 2.64 per cent of income from Migrant Labour. So Agricultural income come has increased tremendously after the implementation of the watershed programme in Atmakur Manda.
The data also reveals that after implementation of watershed programme that employment from Agricultural has improved to 36.94 per cent, 364.64 per cent in Animal Husbandry and 36.98 per cent in Agricultural Labour. Seasonal Migration of labour decrease to -64.56 per cent.

The study also reveals that the share of Groundnut declined from 83.60 per cent to 81.00 per cent and also share of Jower also decline from 2.26 to 1.75 per cent these was steady rise in the share of paddy from 14.14 per cent to 17.25 per cent. From the Table 5.8 it is significant to note that the extent of irrigated area has been increased. The study also reveals increase in production the figure shows that Groundnut went up to 10.84 per cent. There was a phenomenal increase in the production of Paddy to 68.29 per cent and 29.54 per cent increase in Jower production after implementation of watershed programme.

With regards to the savings Marginal Farmers could increase their savings at the rate of 14.00 per cent, Small Farmers at the rate of 69.54 per cent and Other Farmers savings increase at the rate of 31.57 per cent. So Middle Farmers could save more than the other category of farmers in Atmakur Mandal after implementation of watershed programme.

The study also reveals the impact of watershed programme on animal husbandry figure shows there was rise in the number of Cows from 39 to 120, She Buffaloes from 158 to 585, Goats from 60 to 170. The growth records in the animal husbandry as shown in the Table is 5.14 with regard to Cows 207.69 per cent, She Buffaloes 148.93 per cent and Goats 183.33 per cent after implementation of watershed programme. It is evidence from the table 5.11 that ground water table has increased significantly, 32 Bore Wells recharged, 12 Surface Wells also recharged and 53 acre of land was brought under irrigation.

On the whole the farmers of Atmakur Mandal could improve their income and employment after the implementation of watershed programme.