CHAPTER V
Summary & Conclusion
5.1 Introduction

Development is a process of becoming larger, more mature or better organized. Ideally such a process is indigenous without internal conflict in the sense that human beings and societies progress to the fullest possible extent under conditions of their own free choosing. The term is used however, in an economic and social content to describe the state of nations and the historical processes of change experienced by them, e.g. from a geographical viewpoint the extent to which the natural resources of a national have been brought into productive use. Thus a particular set of characteristics are viewed as indicators of the level of development. In the narrowest sense the characteristics are those which signify economic growth and describe the stages by which a nation progresses from a substance agricultural base to an advanced industrial society. In addition to the usual economic measures (such as per capital levels of and rates of increase of production and consumption) the concept of development now subsumes associated social, cultural and political changes, as well as welfare measures which reflect distribution of goods, wealth and opportunities within a nation. The achievement of a state of development is the means by which such conditions of human existence might be achieved. They, in turn, would necessarily involve man in a productive, crisis-free and non-exploitative set of relations with nature and in the struggle to remove oppression and exploitation from the relations between them. Thus the term is commonly used to refer to an amalgam of
characteristics (related to economic growth, welfare and modernization) ascribable to particular societies. Six interconnected sets of phenomena appear most often: levels of material producing and consumption; changes in the levels of material producing and consumption; the technology of material production and consumption; technological change; associated social, cultural and political changes; and, in recent fashion, the distribution of the costs and benefits of production and consumption.

The ultimate aim of development in the quality of life of the people, which can be achieved by proper planning. The process of thinking through and implementing set of appropriate actions to achieve some goal is planning. Many types of planning are identified, but the geographer's interest is upon spatial planning. Here the central intention is to affect the spatial pattern of human activity, on the underlying rationale that, without such intervention, the resulting geography would fall short of some ideal, as determined by an amalgam for social, economic and political criteria. Sometimes this rationale may involve non-spatial planning goals, for example the fuller use of national economic resources. (Keeble, 1976)

5.2 The Agro-Climatic Regional Planning Program

The Agro-climatic Regional Planning, a modern device was formulated at national level to provide a viable and regional approach to the development of agricultural and allied sectors, and was put to experiment in five strategic locations of the country before being prescribed as a general medicine to tackle similar problems elsewhere in the country. Puri district happened to be
one of these 5 locations and the technology experimented was an integrated
approach combining both crop and non-crop sectors and the main thrust was
to tackle the critical and inherent problems of water-logging salinity and sand
dunes of Puri Sadar Block in Puri District.

5.2.1 The Area handicapped with triple problems of sand dunes, salinity and
water logging spread over 45 villages in 11 Gram Panchayats in Puri Sadar
Block was the focus of Agro-climatic Regional Planning approach. The
problems were sought to be tackled through specific remedial measures, such
as construction for control structures, installation of river lift points and filter
point tube wells and farm pond technology and these measures were taken
up in 1993 as experimental basis to enhance soil and water productivity
resulting ultimately in development of agriculture and allied sectors. It's a
precondition ground water survey was taken up to indicate suitable locations
for filter point tube wells.

5.2.2 Control Structure

Three control structures were constructed two in Sarapat, known as old Nua
Nai control structure and new Sara-lake control structure and the third one in
Samangapat known as Mangalahat control structure. The area under water
logging and magnitude of depth were reduced by 60% and 63% respectively.
Effects on salinity was noteworthy as degree of salinity had gone down by
67%. Both coverage and productivity during Kharif and Rabi paddy had come
out with magnificent performance as yield rates during Rabi had increased
from 20.35 Qtl/ha to 29.20 Qtl/ha and from 5.72 Qtl/ha to 10.18 Qtl/ha during
Kharif. Similarly black gram and vegetables, were grown extensively and vegetable production became the key manage to the area.

5.2.3 River Lift Projects

The 20 river-lift projects were taken up as per the schedule of which 14 were installed by 31st March 1996 and the balance 6 by 31st March 1997. 60.42% of the families are benefited. The benefits of irrigation by the project was less than the estimate and a farmer could was less than the estimate and a farmer could increase his area from 0.22 hectare to 1.01 hectare under irrigation. Low voltage of electricity and less flow of sweet water were the reaches of such poor result. However, productivity of rice has gone up from 11Qt/ha to 15Qt/ha during Kharif (36%) and from 22Qt/ha to 31Qt/ha during Rabi (40%). Similarly yield rates of pulses had gone up by 50%, vegetable by 46% and cropping intensity by 40% Additional man days were generated 19 for paddy (Kharif), 28 for paddy (Rabi), and 27 for vegetables. Cropping patron had also undergone a significant change in favour of large area under vegetable and paddy during Rabi.

5.2.4 Filter Point Shallow Tube wells

Filter shallow tube wells were installed at the locations indicated by the ground water survey, with the main objective of utilizing the fresh water storage in the top aquifer underlying in sand area for growing agricultural crops and vegetables.

Even it was thought of developing sprinkler system of irrigation for developing horticultural crops. In place of original program of irrigating 5ha of land one
tube well was found commanding 2-3ha of land and construction of all tube wells was as per the schedule barring few ones which were delayed either due to labour shortage or delay in office procedure but on an average it took about a month and half to complete on tube-well. About 33% tube wells were installed with 50% self finance of the beneficiaries and remaining 67%. Through 50% bank finance and subsidy was 50%.

The impact of tube wells was positive in terms of increase in area under crops and yield rates. During the Rabi season, cropped area increased by 13% as area under paddy, vegetables and groundnut increased with increase in cropping intensity from 150 to 197. Similarly productivity has gone up from 12Qtl/ha to 17.50Qtl/ha during Kharif (14%) and 30Qtl/ha to 35Qtl/ha during Rabi (12%).

5.2.5 Farm Pond Technology:

The low cost farm pond technology was new to the area and had received wide acceptance by the farmers cutting across farm sizes. Average cost of developing one farm pond technology was about Rs. 32,230/- with 50% subsidy and balance 50% from bank finance.

Plot size varied between 0.40 to 2.70ha with average of 0.90ha, the size of pond was varying between 150'x90' and 80'x70', average being 99'x80'. The depth of ponds were varying between 6' to 11' the medium being 6'. During the initial period the adoption was very slow but later it picked up. On the bunds of the ponds, coconut, banana and vegetables were grown and even banana had started bearing fruits though coconut plants were yet to bear
nuts. The vegetables such as Bhindi, cauliflower, tomato etc. were grown in the area covered with soil excavated from the pond. Banana had given income to the extent of Rs. 7,000/- to Rs. 10,000/- per farmer, whereas Rs. 8,000/- gross income was derived from vegetables production. The cropping pattern had already changed giving rise to higher cropping intensity and value of land in the process had appreciated from Rs. 46,000/- to 84,067/- per hectare. Mostly family labour was engaged in the technology and the beneficiary was found enjoying additional employment of about 121.84 days from agriculture (48.66%), 42.66 days from allied sectors (17.04%) and 85.84 days from non-farm sector (34.30). Annual household income has increased 4 to 5 times and harvesting of coconuts was estimated going up to 6 to 7 times.

5.2.6 Animal Resource Development

The animal resource development was planned at the budget provision of rupees 11 lakhs to produce more of high yielding animals through artificial insemination. Encouragement of more of cow units and duck units plantation of more of fodder trees, along with fodder cultivation were the main task of the department of livestock and animal husbandry of Puri District. Initially the farmers were reluctant to part with a portion of their cultivated area for fodder cultivation but later on were convince of merits of fodder cultivation. About 3,550 nos. of fodder trees were raised in 7 villages besides installation of 18 Travis in 18 villages of 9 Gram Panchayats. Achievement in artificial insemination was not up to expectation and hence number of cross breeding
animals had not increased as was expected. The common grazing land and community land were utilized for fodder cultivation.

5.2.7 Horticultural Development

Horticultural department was planned at an outlay of rupees 38 lakhs i.e. 15 lakhs from the Government and the balance 23 lakhs from the financial institutions. The developmental work started from the 2nd year of the inception of the project, and 250 hectares of land i.e. 55 hectares under vegetables and 195 ha under fruits were identified for purpose of horticulture. Nurseries were started by the department of horticulture to supply required number of seedlings to the farmers, to cover 78 ha in 1994-95, 78 ha in 1995-96 and 39 ha in 1996-97 under fruits.

As observed about 100 ha had been covered with fruit seedlings. The beneficiaries planted seedlings in their vacant plots, the average size being 0.40 ha in Samangapat and 0.27 ha in Sarpat, for coconut. Due to better care and maintenance harvesting of nuts had increased by 16% per tree. The cashew nut orchard was on growth stage and yet to bear fruits. The banana plantations and yield rates had gone up under the technical guidance of the horticultural personnel of the district vegetable production had also increased by 30-40% due to supply of high yielding variety seed and extension of area. Only marketing was the bottleneck for which farmers were deprived of fair price for their produce. The horticulture program in pond technology was found successful and the overall impact on the area was significant.

5.2.8 Field Crop Improvement
The Control structures, river lift projects and shallow tube wells had brought more area under irrigation widening the scope for a better crop planning during Kharif as well as in Rabi. Adoption of high yielding, variety of paddy "Lunishree" had increased productivity of saline affected land previously lying barren. Similarly improved variety of paddy, i.e. Paridhan, Tusasi and CR-1014 were grown extensively in problematic areas resulting in increase in productivity of rice. In Samangapat area, paddy yield had increased from 8.32qtl/ha to 11.82qtl/ha, i.e. 42% in water logged area and from 2.45 to 3.73qtl/ha i.e. 52% increase in saline affected areas of Samangpat. Consequent upon change in cropping pattern and increase in cropping intensity average consumption of fertilizer had increased to 40kg/ha. In less problematic area, yield rates have increased from 15.92qtl/ha to 19.13qtl/ha during Kharif and from 28.10qtl/ha to 35qtl/ha during Rabi due to high consumption of fertilizer and introduction of HYV varieties of paddy. Also ground-nut yield has shown remarkable increase from 9.80qtl/ha to 12qtl/ha and Pulses from 3.42qtl/ha to 4qtl/ha. Area under HYV variety of paddy has gone up from 2% to 29.40%, along with increase in cropping intensity from 127 to 176.80% varying within the range of 129 to 217%.

5.3 The Quality of Life

The Sustainable Livelihood Security Index (SLSI) developed by M. S. Swaminathan has been adopted to compare the level of quality of life of the beneficiaries with that of the region as a whole. The SLSI is composite index which indicates the relative status of various components, integrating...
economy-ecology-equity interactions, and can be used for measuring the sustainable livelihood security of any region. Livelihood can be described as means for living or sustenance, security indicates protection assurance or a secure condition. By using these conditions the quality of life of a region can be assessed. The mathematical framework used in the computation of the index involves a system of ranking which helps in identifying the relative status of each component studied in a given ecosystem.

5.3.1 The four essential components considered for developing the SLSI at the household level are:

1. Income Status
2. asset ownership status
3. educational status
4. nutritional status

to calculate the income status, income of all family members is taken into account. For asset ownership, the number and value of assets, and the products obtained from livestock and their value are considered. The educational component relates to educational levels of all the family members of a household. Food and nutritional status have been measured in terms of consumption per month. Household is taken as the basic unit of investigation. Two sets of indices have been constructed, the first set gives the values for the direct beneficiaries, the second set gives the value for the villages who are not covered by the project directly.

5.3.2 From the observations obtained by the above it can be concluded that:
1. The quality of life of the beneficiaries under the ACRP Scheme has definitely improved in comparison to the period prior to the implementation of the project.

2. But the vast majority of people in the area other than the beneficiaries have remained out of the zone of influence of the project benefits. Hence, the qualities of life of the vast majority have not been influenced by the project or it has no impact on the quality of their life.

5.4 Suggestions and Conclusion

The impact of Agro-climatic Regional Planning Program would have been more fruitful and could be more effective in having a positive impact as the quality of life of the people if the following corrective measures are taken.

- A close monitoring and supervision is required along with technical guidance for mid correction to remove the bottlenecks on way of adoption of technology.

- A good reputed NGO may be involved in the process to elicit people's participation in the program and to act like a guard for the implementation of technology.

- The enthusiastic and progressive farmers are to be taken to other locations, in the country where such experimental projects were being implemented on pilot basis to see themselves the performance.

- A suitable market mechanism needs to be developed for disposal of farm produce at the reasonable price.
- The present delaying proceeding at the office and bank level in movement of files and clearance of loan should be removed to get quick result.
- A single window delivery system to be developed to supply all necessary inputs to the beneficiaries.
- Regular supply of electricity has to be ensured for energizing pumps otherwise water supply for irrigation is not possible in time for which crop growth and yield rates are affected.
- Because of silitation of channels there is insufficient water flow in the tributaries of rivers hence desilation has to be undertaken.
- Creation of more employment opportunities by extending the different project components to more areas.
- Promoting active involvement of local communities through motivational activities engaging local NGOs and students.
- Last but not least proper utilization human resources through awareness generation.

5.4.1 A number of different plans are floated and implemented by the Government at different stages and different places suitable to specific areas, the sole aim being to increase the quality of life of the people. But in reality very few really reach the needy. A number of bottle necks are there in their fruitful implementation. Hence, to make any program successful in achieving its target public participation has to be ensured. Because unless people, who are the target group are aware of it and avail of the opportunities no planning program is going to be successful.