PLANNING FOR SUSTAINABLE DEVELOPMENT FOR GARA MANDAL, ANDHRA PRADESH STATE

A DISSERTATION

Submitted in partial fulfilment of the requirements for the award of the degree of

MASTER OF URBAN AND RURAL PLANNING

By

K. SREERAMA MURTHY

DEPARTMENT OF ARCHITECTURE AND PLANNING
UNIVERSITY OF ROORKEE
ROORKEE–247 667 (INDIA)

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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the dissertation entitled **PLANNING FOR SUSTAINABLE DEVELOPMENT FOR GARA MANDAL, ANDHRA PRADESH STATE** in partial fulfilment of the requirement for the award of the Degree of **MASTER OF URBAN AND RURAL PLANNING** submitted in the **Department of Architecture and Planning** of the University is an authentic record of my own work carried out during the period from **July 2000 to February 2001** under the supervision of **Dr. V. Devadas.**

I have not submitted the matter embodied in this dissertation for the award of any other degree.

Place: Roorkee

Dated: , February 2001

K. Sreerama Murthy
(K. SREERAMA MURTHY)

This is certified that the above statement made by the candidate is correct to the best of my knowledge.

V. Devadas.

Dated: 28 February, 2001

(Dr. V. Devadas)
Assistant Professor,
Deptt. of Architecture & Planning,
University of Roorkee,
Roorkee – 247667 (INDIA).

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(K. SREERAMA MURTHY)

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Introduction

1.1 General

Development implies both more output and changes in the technology and institution arrangements by which it is produced and distributed. Development is also defined as an innovative process leading to the structural transformation of social system.

In India growth and development have been taken place simultaneously but the current process of unscientific development is now creating a situation which human beings and environment can not bear any more though the life expectancy has increased, production has multiplied, yet in absolute number we are having more hungry, illiterate and deprived people. Safe drinking water is still a dream in India; the gap between rich and poor is widening. So it is imperative to have a close look at the development process very carefully (No. 8).

1.2 Sustainable Development

"Sustainable human development puts people at the center of development and points out forcefully that the inequalities of today are so great that to sustain the present form of development is to perpetuate similar inequalities for future generation. The essence of sustainable development is that, everyone should have equal access to development opportunities now and in future". To clarify the point further one may add that development should stop dwindling with acute problems like poverty and deprivation and do something meaningful to eradicate them as far as possible in an ecofriendly manner (No. 8).

1.2.1 Pre-requisite for Sustainable Development

There are certain pre-conditions for planning a development strategy so that it should not bring poverty and deprivation in future. Development should take the society towards a long-term improvement and well-being. Some of these preconditions are (No. 8):

1. An International distribution system based on justice and equality between development and developing countries.
2. Prosperity and production, but not at the cost of ecological balance.
3. A social system, which cares for the poor and downtrodden, which also promotes all the sections of the society and does not create unnecessary rift among them.
4. A technology, which is not based on the unmindful imitation of the foreign technology.
5. An economic system, which is not selfish, greedy or short, sighted.
6. A political system, which is based on democracy and welfare state principles.
7. An education system, which is utilitarian and academic both.
8. A government, which is, free from corruption and enjoys people's trust.
9. A strong family system, where individual freedom is also appreciated to a great extent.

If these pre-conditions exist then sustainable development should flourish. It is not all the time possible to have all the conditions in the proper form, but whatever is possible, should be achieved.

1.2.2 Salient Features of Sustainable Development

The main feature of sustainable development is low cost or cost effectiveness of the planned projects. People's involvement, their participation, empowerment and ultimately their leadership bring all the programs nearer to the beneficiaries. Development will be really sustainable when it will not be considered a government program. It will be sustained as people's program.

Next feature of sustainable development is family planning, birth control and an effective population policy, which makes human beings economically, and socially productive units and not burdens. Planning population growth is basically a matter of equality of life and investment on human beings. More investment in human beings will definitely lead to a careful production of human beings.

One more feature for sustainable development is environmental protection. Global warming, green house effect, depletion of the zone layer, deforestation, drought, famine, floods and earthquake are caused by ruthless exploitation of nature and the natural wealth.

One more salient feature for sustainable development is the preservation of human rights. This is important to note that no sustainable development is possible without assuring human rights to all the citizens of the country.

Another essential feature is the provision of all the essential goods and services for all the fellow being for controlled and reasonable consumption. Sustainable development is for today, tomorrow and day after tomorrow. Therefore, it must support water, soil, trees, animals and humans because they can only survive when they are together (No. 8).

An important feature of sustainable development is the use of scientific discoveries for optimum utilization of natural resources without their reduction.

1.2.3 Social Development and Sustainable Development

It is quiet clear that economic development with out social development creates deprivation in the long run. The term social development is traditionally used for not only more production but also for fair distribution. The above mentioned salient features of sustainable development also highlight the importance of social justice, global justice, equity and equitable distribution of resources. Sustainable development creates social development and social development eventually nurtures futuristic attitude among masses.

One can also take sustainable development as a more advanced approach in comparison to social development because (No. 8),

- Social development is usually concerned with human beings but sustainable development is thoughtful and careful for all species, eco-system and the whole biosphere because human existence depends on the existence of other creatures in the natural surrounding.
- Sustainable development is more futuristic in comparison to social development because it believes in the post-ponement of consumption so that the coming generations should not suffer form deprivation. Social development is primarily concerned with the rise in the standard of living of the downtrodden masses whereas sustainable development promotes austerity, simplicity and low consumerism.
- Sustainable development cares a lot for indigenous people, folk culture and primitive technology. It is felt that least interference policy, for the primitive

people, should be adopted because western technology, some times, proves to be very harmful. However, it does not mean that scientific inventions and discoveries should not be promoted. In fact new discoveries can help in economizing natural resources. Sustainable development philosophy appreciates a purposeful use of scientific advancement and disapproves of the use of science for greed and power.

Any development may be sustained only when harmony is created between human beings and environment, since they are interdependent. If their interdependence is disturbed then the consequences may be quite serious. In the name of development natural resources are destroyed. So much harm has already been done. Now one should not tolerate these harmful effects as normal side effects of development. They should be managed with the help of sustainable development strategies.

1.2.4 Components of Sustainable Development

Various components of sustainable development are (No.8, 21):

1. Survival and continuation of he humans on earth.
2. Maintenance of basic ecological processes.
3. Control overpopulation growth.
4. Provision of basic material needs of all humans.
5. Little of non-renewable resources.
6. Reduction of harmful waste and its production.
7. Increased reliance on sustainable and renewable resources.
8. Restricted and planned consumption.
9. Restricted production of superfluous goods.

10. Minimum resource use and waste production.

It is obvious that sustainable development is a large-scale participatory activity. It is not a job of the government or higher authorities only. It is very much a concern of each and everyone. Some can contribute directly and some indirectly.

Sustainable development can be looked at, from a variety of perspectives, such as, environmental, economic, social, political, cultural and technological. None of the perspective can stand-alone. Sustainable development is possible if all of them are taken into consideration.

1.2.5 Contemporary Indian Scenario

Indian history, culture and psyche believe in the concept of co-existence. The importance of forest in our tradition, worship of rivers, incarnation of gods in the form of animals, etc. are the proofs of one fact that the primitive man knew the eternal relationship in which whole universe is bound. But unconsciously the present generation has cut down its relationship with that traditions, rather it takes nature as a slave. In Indian context, some strategies should be development keeping in view of our specific needs. Some of these possible strategies are given below (No.8):

1. It is not enough to believe that traditional Hindu Philosophy is eco-friendly because Hindu gods took birth in the form of plants and animals. We have to see very carefully whether our beliefs and practices are really ecofriendly or not.
2. In many cases, initial disturbance of a bio-diverse atmosphere and after that an effort to reconstruct it, is a wrong approach because once disturbed eco-system

can not be reconstructed so easily, for example once destroyed rain forests do not grown, easily rather deciduous forests take their place.

3. Homogeneous and one dimensional production systems break up community structure displace people form diverse occupation. There is no doubt that effort to produce more and more only satisfies greed and not the need.
4. Population explosion is obviously very harmful and there is no need to find further proofs for it. Now the need is that those who do not follow family planning should not be taken as ignorant and innocent people, they should be treated as trouble creator. They should be condemned thoroughly in the society because they are not only harming themselves, but they are harming the whole society and the ecology too. Their act should be taken as an anti human activity. If they are national leaders then their offence is still more severe. They are not only harming the country by various scams and scandals but also be setting wrong precedence and adding burden on country's meager resources.

The following three sets of objectives are to be integrated for achieving sustainable development. They are (No.9):

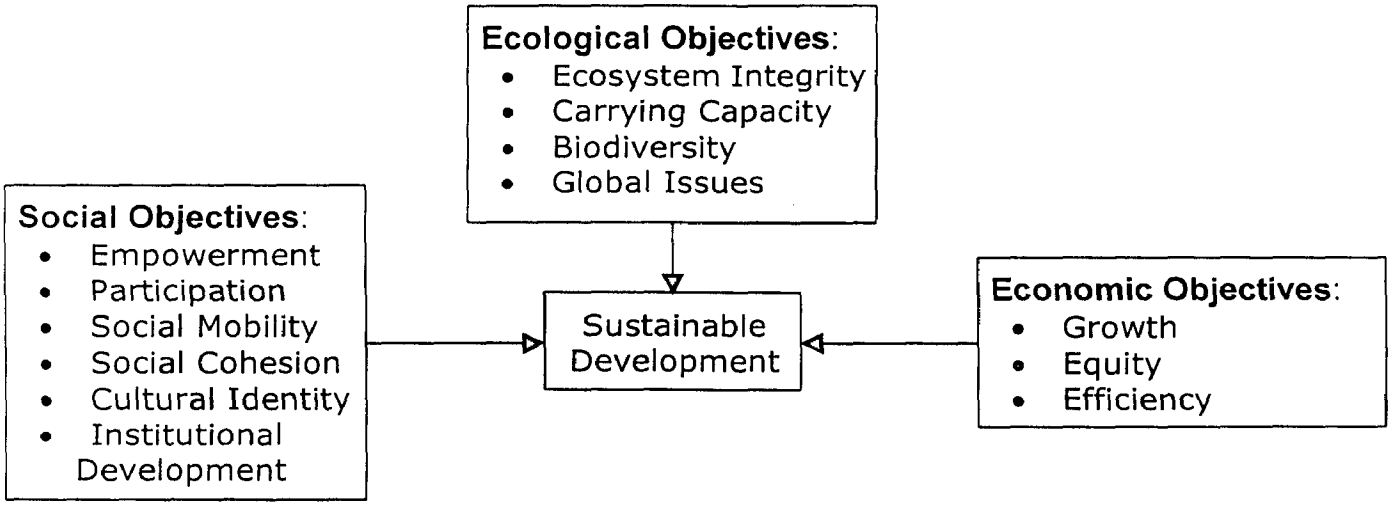

FIG 1.1: **Different Objectives Of Sustainable Development**

Sustainable development occurs only when management goals and actions are simultaneously ecologically viable, economically feasible, socially acceptable and technically viable; these imply environmental soundness and political acceptability (No.9).

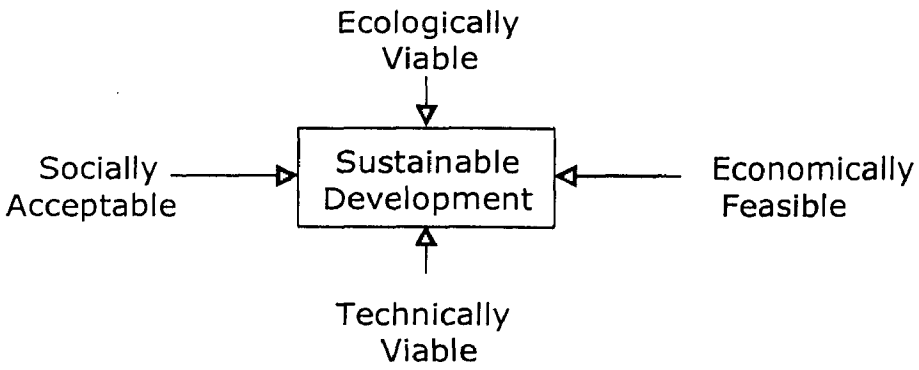

FIG 1.2: **Sustainable Development**

1.3 Rural Development

As a Concept: Rural development means all round development of rural areas with a view to betterment of the lifestyles of rural people. In this sense, rural development like development in general is multi-dimensional. In the purely economic sense it covers development of the agricultural and allied activities and social facilities, besides development of human resources in the rural areas.

As a Phenomenon: It is the result of interaction between various physical, environmental, technological, economic socio-cultural and institutional factors in the rural areas of a nation.

As a Strategy: The rural development is the approach or operational design to bring about the desired positive changes in the socio-economic and cultural life of the rural people.

A rural development strategy is primarily an outline of the processes that lead to a rise in the capacity of the rural people to improve their lives and environment, accomplished by wider distribution of benefits resulting from such improvement. Thus rural development considers both agricultural and non-agricultural aspects of rural life (No. 20).

1.3.1 Characteristics

From the above definitions of rural development, it has following characteristics (No.25):

a) It is a strategy for a group of people living in undeveloped area.

b) This undeveloped/under-developed area is known 'village'.

c) It is related with improvement in their living standard by raising their income by creating employment opportunities.

development planning of agriculture, industry and services within a rural area, with reference to all aspects of life, i.e., social, organizational and environmental.

The absence of a clear, functionally integrated hierarchy of human settlements inhibits rural development. A carefully network of human settlements, within a regional and national framework, is required (i) to improve the level of essential economic and social services in rural areas, (ii) to establish standards commensurate with reasonable demands, but not so unrealistically high that they lack a basis in present and future reality, (iii) to gradually evolve a transportation system and (iv) to promote a more dispersed industrial development pattern (No. 26).

Most of the back ward areas in the country lack the settlement pattern that seemed to have promoted growth in the urban industrial regions. Development strategies must, therefore, be focussed on the creation of a hierarchically structured spatial system, in which the linkages between its components are strengthened. Therefore, special emphasis must be given to the growth of a more balanced hierarchical Constellation on the intermediate and lower levels of the settlement size distribution, to provide the country side with a system of well-equipped rural centers, which will offer sufficient market, service and storage facilities, as well as labour intensive industries for the processing of local materials (No.26).

A Mandal (a group of villages) GARA of srikakulam district in Andhra Pradesh, one of the most backward mandals, which is confined in the rural segments of Andhra Pradesh, is selected for this present investigation.

1.5 Objectives

The following objectives have been framed for the present investigation to prepare a sustainable development plan for the development of the study area. They are:

1. To assess the existing status of development.
2. To assess the available resources.
3. To identify the controlling parameters, which determine the functions of the system.
4. To forecast the facilities required for the year 2021.
5. To evolve a sustainable development plan.

1.6 Scope

The present study aims at to prepare a sustainable development plan for the study area. The investigator hopes that if the proposed plan is implemented successfully in the study area, real development is anticipated.

1.7 Concept

Rural system functions as a whole with several interacting sub systems, such as, households, agriculture, livestock, rural industries, rural energy and rural infrastructure. All sub systems of the rural system are inter linked and interdependent in several ways and functions together. In a given rural system, a sub system's output, in general, has a multitude of usages, and thus may form input to one or more sub systems. In such situation, if one of the sub systems does not function properly, the function the other sub systems as well as that of the system would be adversely affected.

The major subsystems and their inputs and outputs are briefly discussed below:

Households: The subsystem of households obtains input from households, agriculture and livestock in the form of human labour, food and animal power, while supplying input in the form of human labour to all other subsystems.

Agriculture: The subsystem of agriculture obtains input from different subsystems, such as, households, livestock and rural transport in the form of human labour, animal power and farmyard manure. It also receives input in the form of electricity, diesel and chemical fertilizers from outside the system, while producing food and nonfood items, crop residue, fodder, timber, logs, fuel wood, etc., which contribute inputs to various subsystems.

Livestock: The subsystem of livestock obtains input from households, agriculture, transport and from itself in the form of human labour, animal power, crop residue, fodder, feed, etc., while it produces milk, cattle dung and draft power, forming inputs to other subsystems like households, agriculture and rural transport.

Rural Transport: The subsystem of rural transport mainly serves to subsystems, households and agriculture, and draws its major inputs, i.e. draft power from the subsystem of livestock and manual power from the subsystem of households.

Rural Industries: The subsystem of rural industry obtains input from households, agriculture, transport, livestock and infrastructure in the form of human labour, agriculture output is used as input for industries, animal labour for transportation, electricity from infrastructure and transportation network for goods movement, etc., while it supply input to households, agriculture, livestock and rural transportation segments (No. 37).

The schematic representation of the above is shown in Fig 1.3.

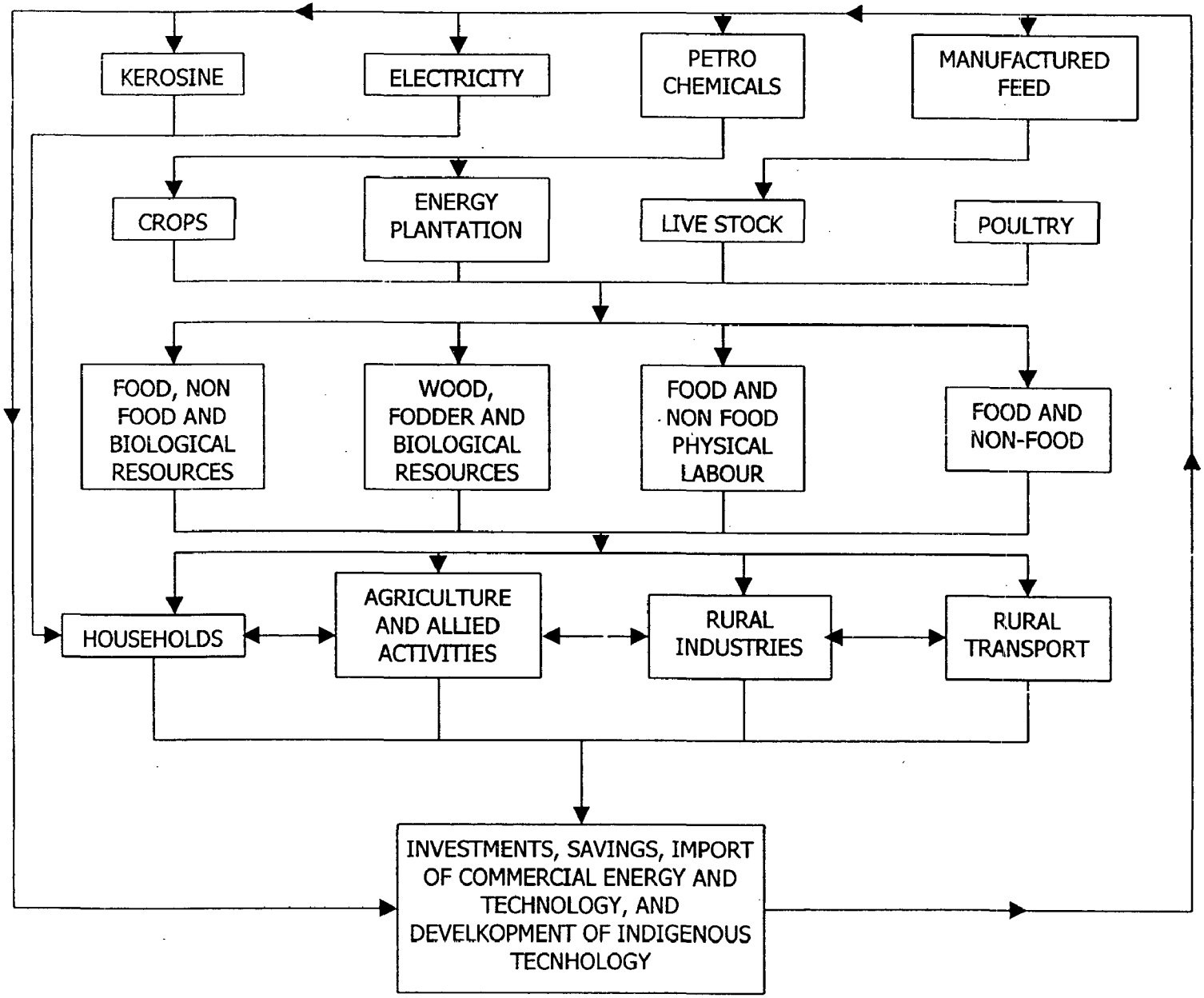

FIG 1.3: A Rural System

Having these concepts in mind, a sustainable development plan is intended to evolve for the development of the Mandal Gara, which is confined in one of the most backward rural segments in Andhra Pradesh state of India.

1.8 Research Design

1.8.1 Methodology

Survey research methods are employed for this present investigation. Since it is highly impossible to conduct comprehensive household survey at the grassroots level of the study area. The study area (Mandal) has 25 revenue villages comprising 110 villages. These villages are having 14958 households as per the 1991 census. Conducting comprehensive household survey in these households is the Himalayan task to a researcher who studies the function of the system for a Master Degree thesis, which has a very limited time frame of six months.

The study area (Mandal) has 25 revenue villages. Of which, three revenue villages have been chosen based on village located near by river, near by canals and the central part of the Mandal. Three villages have been taken from the three revenue villages by using random sampling method. These villages have different types of size of farms, such as, marginal farm, small farm, medium farm, and the large farm. Representative samples have been taken from each category for this present investigation by simple random sampling method. The method of sampling has shown in Fig 1.4.

Geometric Increment Method has been used to project the population for the year 2021 and suitable planning standards have been used for calculating the required facilities, and food supply in the system.

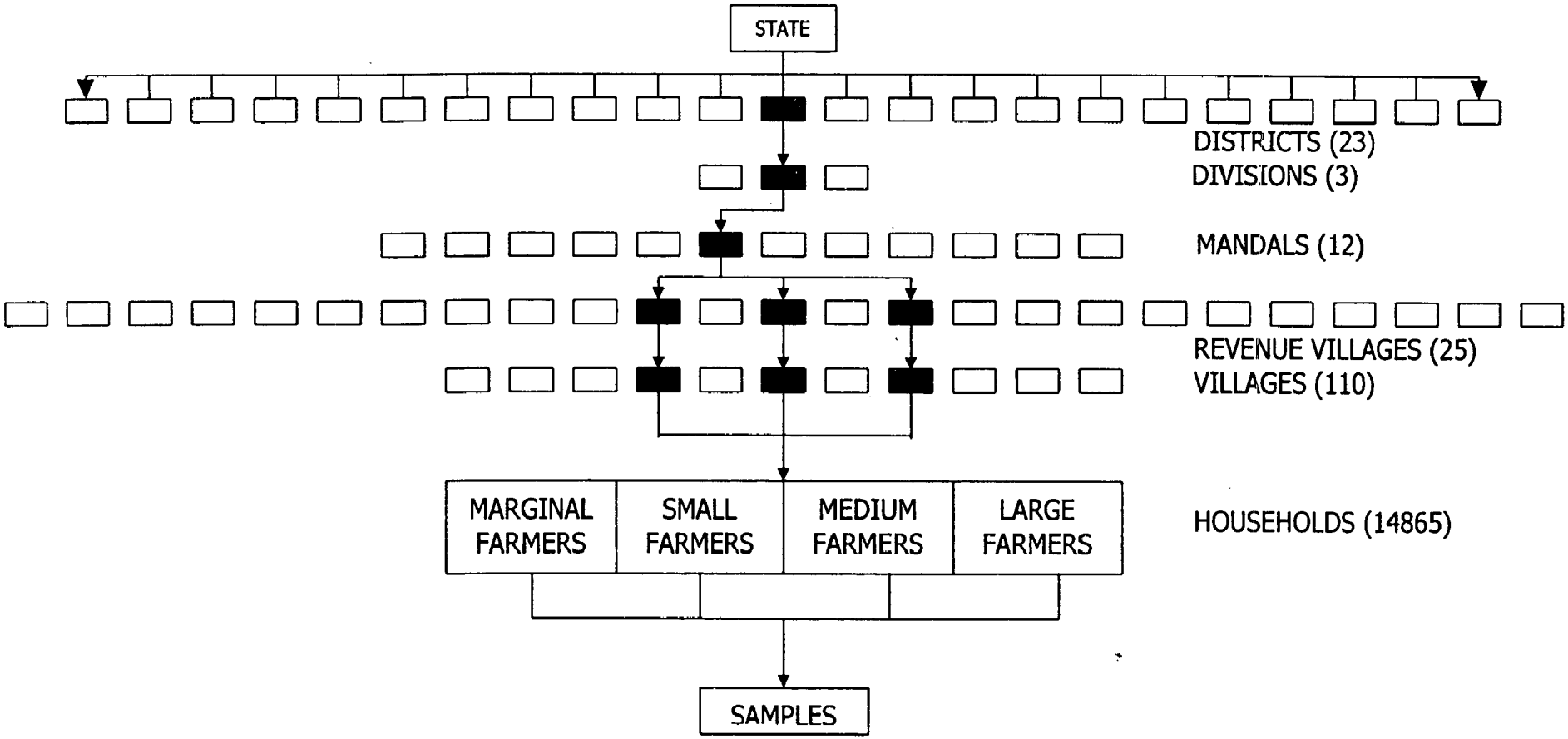

FIG 1.4: **Flowchart Showing Methodology**

1.8.2 Data

Data are collected from two sources for the present investigation. They are:

A. Secondary sources: Published literature and unpublished documents in the field of this investigation are reviewed.

B. Primary sources: Survey will be conducted at the household level for obtaining the required data by using pre-tested schedules.

1.8.3 Tools and Techniques

a) Tools

Survey research methods have been employed in this present investigation. Survey research method is very much important in this investigation, since it requires present upto date data. Present data can be collected through conducting household survey at the grassroots level. To collect present data, it is very much essential to employ survey research methods, since conducting comprehensive household survey is impossible at this juncture due to several reasons, such as, (a) time limit, (b) more number of households available in the system, etc. Therefore, survey research method is employed in the present investigation.

b) Techniques

Sampling:

The Mandal consists of 25 villages. Suitable sampling methods have been adopted for identifying the households to conduct the survey.

1.8.4 Analytical Tools and Techniques

a) Analytical tools: Micro Soft Excel software is employed for processing the data.

b) Relative statistical tools and techniques are identified and employed to analyze the data based on their availability and reliability.

1.9 Limitations

The research is time bound and limited to 6 months. Hence, the study is limited to only at the Mandal level. Since study is limited to Gara Mandal, the recommendations made are applicable only to that area.

1.10 Conclusions

The study concludes with preparing a feasible plan for sustainable development at the Gara Mandal, Andhra Pradesh state.

Chapter 2

Review of Literature

2.1 Introduction

India is predominantly a rural country with more than two-third of its populations still live in its villages, which sizes are ranging from small hamlets to large village settlements. They continue to suffer from various kinds of socio-economic evils, such as, underemployment, unemployment, poverty and social backwardness, inspite of more than half a century of planned development (macro level planning) that has been practiced in the form of National five-year plans.

Needless to say that rural development has been receiving attention of the government ever since the advent of National Five Year plan. Considerable number of rural development programs has been introduced at various aspects of social and economic development of rural areas. The thrust of the policy objectives, which lead to these programs has been two-fold, one, economic development and two, social welfare. The plan outlays have also increased over the years to bring more and more areas under the various ongoing programs. Though the plan outlays are increased substantially the gap between urban and rural masses increased tremendously due to improper planning, and implementation of programs of the government.

Rural people migrate to urban areas because of job opportunities available with urban system, and lack of industrialization, poor educational facilities, poverty and inadequate electricity available with rural system. Thus two fold problems are

created. It results in formation of slums in the cities and villages slowly become deserted and its economy is deteriorated.

It was observed that by proper planning of cities, Governments of India and respective states always try to satisfy the needs of urban people but no much efforts were made to satisfy the needs of the rural population compared to the urban system. This can be made possible through effective village planning.

❖ **73rd Constitutional Amendment**

According to the 73rd constitutional amendment, "the village panchayat will have to perform basically two functions". They are:

a) The preparation of plans for economic development and social justice;

b) The implementation of schemes for economic development and social justice as may be entrusted to them including those in relation to the matters listed in the eleventh schedule (Government of India, 1992)

❑ Eleventh Schedule (Article 243-G)

1. Agriculture including agriculture extension
2. Land improvements, implementation of land reforms, land consolidation and soil conservation
3. Minor irrigation; water management and watershed development
4. Animal husbandry, dairying and poultry
5. Fisheries
6. Social forestry and form forestry
7. Minor forest produce
8. Small scale industries, including food-processing industries
9. Khadi, village and cottage industries

10. Rural housing
11. Drinking water
12. Fuel and fodder
13. Roads, culverts, bridges, ferries, waterways and other means of communication
14. Rural electrification including distribution of electricity
15. Non-conventional energy sources
16. Poverty alleviation program
17. Education, including primary and secondary schools
18. Technical training and vocational education
19. Adult and non-formal education
20. Libraries
21. Cultural activities
22. Markets and fairs
23. Health and sanitation
24. Family welfare
25. Women and child development
26. Social welfare
27. Welfare of the weaker sections
28. Public distribution system
29. Maintenance of the community assets

It is imperative therefore to have a village development plan not only because it is mandatory in the act, but also to reflect peoples felt needs and perceptions.

There are numerous authors who have done research on rural development and articles were published in various journals both at national and international levels. Some most important of them are collected, reviewed and grouped under the following headings for presentation. They are:

1. Agriculture and Allied Activities
2. Minor Irrigation and Water Resources Development
3. Land Reforms
4. Rural Housing
5. Rural Infrastructure
    a) Health and Sanitation
    b) Rural Roads
    c) Rural Electrification
    d) Education
    e) Water Supply
    f) Banks
    g) Communication
6. Women and Child Development
7. Rural Industrialization
8. Forestry
9. Rural Energy
10. Ecology and Environment
11. Cooperatives
12. People's participation
13. Rural Financial Institutions

14. Tourism

2.2 Agriculture and Allied Activities

Assuming a food requirement of 300kg a person a year, the country would need about 500 million tones of food grain a year to support a population of around 1.7 billion in the year 2050. That is, the current levels of production of about 200 million tones from an area of 141 million hectares has to be more than doubled in the next 50 years. This is a tall order considering the fall in per capital availability of arable land and falling productivity (No. 30).

In India, the green revolution was introduced having the objective of achieving self-sufficiency in food supply. Several number of programs were introduced in connection with green revolution in only three states, such as, Punjab, Haryana, and Uttar Pradesh. As a result, these states were developed considerably compared to rest of the states with regard to agricultural sector.

Green revolution has brought out some ecological problems like depletion of forest and pasture lands, reduction in bio-diversity, decline in soil fertility, lowering of underground water table, water-logging (improper use of irrigation water canals), salinization (accumulation of soluble salts in upper layer of the soil), problems of soil erosion, deterioration in the quality of environment (soil, water and air pollution), emergence of several diseases like malaria (due to stagnation of water and dense vegetation) and cancer (due to toxic residues present in the grains), health hazards (due to use of toxic chemicals) and poor sustainability of agricultural land. The aggravating problem of land degradation is the result of its over exploitation due to increasing biotic pressure and decrease in size of land holdings. Modern farming on smallholdings is becoming less and less productive

and remunerative. Denudation of forests, loss of genetic resources, loss of cropland, soil erosion and disertification, water pollution, and hazardous waste are also some of the issues, which demand serious thinking and timely action. According to Consultative Group on International Agricultural Research (CGIAR, 1989), sustainable agriculture is the successful management of resources to satisfy the changing human needs, while maintaining or enhancing the quality of environment and conserving natural resources (No. 35).

Our efforts must be on efficient agronomic management of the improved crop varieties i.e. Variety selection, water management, soil management, integrated weed management integrated nutrient management, dry land management, waste land management and cropping system approach that facilitate us to enter in an era of ever green revolution.

India has a lot of bio diversity and has been divided into fifteen agro-climatic zones based on soil type, amount of rainfall received, availability of trees and shrubs, etc. The different types of crops suit well for different agro-climatic zones. The scientific and accurate selection and recommendation of these crops and varieties based on climatic and soil factors are highly essential (No. 30)

The land is very important resource for agriculture. As the net cultivable area of India comes to stagnation of 143 million hectares, the cropping intensity can be increased only by growing two or more crops simultaneously in combination or by sequential cropping. Intensification of time and space must be the objective here. Hence cropping system approach suits well in this context as it leads to higher crop yield per unit area per unit time. Several cropping systems like mixed cropping, inter cropping, multi-storey cropping and sequential cropping may be implemented

by boosting the crop productivity which in turn leads to better socio-economic status of Indian farmers.

Some of the items of infrastructure such as, farm energy and power, agricultural credit, agricultural marketing, ware housing, transport and agro-processing, extension support etc., need to be developed concurrentiy to sustain agricultural development at the desired level (No. 34)

Sericulture: India has a bright future to change the working silk trade in its favor. It has vast potential in increasing area under mulberry cultivation and expanding cocoon production activities in rural and semi-urban areas due to increasing attention being given for agro-based industries in the new economic reforms initiated.

Mulberry sericulture is well suited for marginal, small and landless farmers because of its small initial investment, short gestation period, labour intensiveness, gender sensitation and employment opportunities in both off farm and on farm activities, it has an edge over other crops in the rural sector. It is estimated that one hectare of irrigated mulberry sericulture will generate employment for about 13 persons starting from mulberry cultivation to trading round the year. It is worked out that in the value addition, 48.34 percent goes to farmers, 21.64 percent goes to traders and rest are shared by weavers (11.18 percent), realers (9.58 percent), twisters (8.12 percent) and dyeing (1.14 percent) respectively (No. 34).

The technology delivery system (extension) should be streamlined by providing need based training and effective demonstrations in the field by using various communication methods and extension methodologies.

Integration of various agriculture enterprises viz. Crops, dairying, horticulture, poultry, goat rearing, piggery, fishing, forestry etc. In farming has become indispensable (No. 34)

Polyhouses: Polyhouses are proving useful these days because fruits flowers and vegetables fetch more remuneration to the growers in temperature and hilly regions of the country. In these areas the availability of land is less and whatever available, the fertility is low.

It is well established that availability of suitable temperature and relative humidity is necessary for the production of vegetables, fruits and flower crop. These conditions are created in Polyhouses during off-season.

Polyhouses can be made of transparent, tight, cheap and flexible Polythene. In these houses vegetables and other crop can be grown in any season of the year depending upon their requirement, because temperature and humidity can easily be controlled in Polyhouses. Polythene prevents the thermal radiation, which increases the temperature and energy and thus help in the process of photosynthesis.

During daytime, the solar energy enters the house from the transparent surface of the Polyhouses. This energy raises the temperature of Polyhouses. During this process some energy enters the earth, which resurface in the house at night and adds to its temperature. Little energy is lost from the different parts of the Polyhouses (No. 33)

2.3 Minor Irrigation and Water Resources Development

In the efforts to develop water resources for irrigation, the management aspects of water resources for irrigation, did not receive due attention in India. As a result of ineffective irrigation management, there is a gap of about 9.8 million

hectares between the irrigation potential created and utilized by 1996-1997. Irrigation efficiency in India is presently estimated between 38 and 40 percent for canal irrigation and about 60% for ground water schemes, which is very low. Hence efficient irrigation management is very much essential at present.

The contribution of water to economic productivity and social well-being has to be fully appreciated. The holistic management of fresh water as a finite and vulnerable resource, and the integration of sector balance and programs with in the framework of national economic and social policy are of paramount importance for action. Integrated water resources management should be based on perception of water as an integral part of the ecosystem and social and economic good whose quantity and quality determine the nature of its utilization. To this end, water resources have to be protected, taking into account the functioning of aquatic ecosystem and the perenniality of the resources, in order to specify and reconcile needs of water in human activity. In developing and using water resources, priority has to be given to satisfaction of basic needs (such as drinking water) and the safeguarding of eco-system (No. 33).

Resources, priority has to be given to satisfaction of basic needs (such as drinking water) and the safeguarding of eco-system.

The following actions have to be initiated on the priority basis (N0. 35):

1. Integration of measures for the protection and conservation of potential sources of water supply, including the inventorying of water resources with land use planning, forest resources utilization, protection of mountains and slopes and river banks and other relevant development and conservation activities.

2. Wherever feasible, artificial recharge and rain water harvesting has to be encouraged instead of looking only for new and distant sources of water supply or tapping vast depleting ground water.
3. Renovation and utilization of tanks and other local water sources are to be considered as priority task. The programs need to be planned and implemented on watershed basis taking into account the comparative techno-economic feasibility of renovating existing tanks vis-a-vis construction of supplementary tanks upstream and down stream.
4. Integrated watershed development programs should be given priority for soil and water conservation, arresting degradation of catchment areas and restoring ecological balance of the area.
5. Ideally, water supply and liquid wastes management scheme should be integrated and for this, it is necessary that water supply programs are not taken up without simultaneous approval of sanitation/waste water disposal programs.
6. Flood and drought management, including risk analysis and environmental and social impact assessment.
7. A number of reservoir construction projects continuing over the long period must be completed on priority basis. Rivers, lakes and wetlands have to be cleaned quickly. Mobilization of water to water stressed areas particularly in arid and semi arid regions and ensuring drought proofing.
8. Public awareness needs to be created for reducing water consumption. Women participation is to be encouraged to the maximum as they face the drudgery of water scarcity.

9. Development of public participatory techniques and their implementation in decision making particularly the enhancement of women in water resource planning and management.

10. Due importance should be given to local water planning, with the basic aim of making each rural area managing its own water needs as far as possible through water harvest, conservation measures and watershed development.

11. There is a need for optimum use of local resources of water even in canal-irrigated area in the interest of efficiency of water use, extension of irrigated land, prevention of water logging and increased productivity.

Thus, the challenge before us is to ensure that people must have better access to a potable water supply and to sanitation services. Sustainability of food production depends on sound and efficient water use. More water is needed for energy generation, for crucial industrial activities and for maintaining environmental health to ensure the sustainability of development. The problems are not beyond the resource availability and the present state of knowledge and technology. Besides extracting the best performance from the existing investment system we can manage our surface and ground water resources in an integrated manner by creating social awareness, public participation and ensuring dedication of implementing agencies.

2.4 Land Reforms

Soil is very important natural resource, which has to be managed successfully for efficient crop production. No system of agriculture will be sustainable unless the soil which forms the pivot and the most important natural resource is managed scientifically to meet the present and future needs and its

productivity and quality continuously maintained, rather enhanced so as to maintain a better environment for the future generations.

Ideal soil management techniques include provision of optimum soil reaction, soil texture, soil structure, soil moisture content and addition of soil organic matter. All these factors aid in improving soil fertility.

Integrated nutrient management helps in application of organic manures and biofertilizers along with chemical fertilizers to the soil and hence forms an important component of soil management. In the process, it aids in enriching the soil biotic component, which in turn improves soil productivity to a greater extent. One of the main reasons for stagnation in the food grain production of India in the recent years is the degradation of soil fertility due to continuous application of excess dose of chemical fertilizers. Integrated nutrient management improves soil fertility in long run and reduces the demand for chemical fertilizers and ensures the concept of sustainability in agriculture (No. 19).

2.5. Rural Housing

Housing is one of the basic necessities of human life. In order of importance, it comes next to food and clothing. In view of its significance, the seventh five-year plan had aptly stated: in fulfilling the basic needs of the population, housing ranks next only to food and clothing in importance. A certain minimum standard of housing is essential for healthy and civilized existence. The development of housing, therefore, must enjoy high priority in a poor society like ours where housing amenities are for below the minimum standards that have been internationally accepted (No. 32).

According to the 12th report of the National sample survey, about 73 percent of the households live in kutcha structures having plinth and wall made

up of non-durable materials like mud and roofs are built of grass and leaves and are thatched. The majority of dwelling places lack basic amenities such as sanitation, waste disposal, ventilation, drinking water etc. on the other hand, 97percent households had no latrines, 93 percent were without bathrooms, a part of the living room was being used as kitchen by 45 percent and the remaining were cooking in the open and merely 0.35 percent were enjoying protected piped water supply. The survey further indicated that only about 5 percent of the rural households had access to tap water supply during 1973-74 and for others, the sources of drinking water were river streams, canals, ponds, wells, etc.

If one look at the background of the problems, it can be easily observed that it has arisen because of certain socio-economic factors of the rural society. The growing population pressure, the emerging social requirements, and the improving quality of life need newer, better and a large number of houses for the rural teeming millions. On the basis of review of the progress of rural housing, it can be concluded that the housing shortage marginally declined in the sixties but the trend witnessed reversal in the seventies.

The Minimum Needs Program (MNP) for the provision of rural housing sites to landless agricultural labourers is under implementation since 1971. Under this program house sites are provided to landless agriculture labourers and village artisans, fisherman, etc, free of cost. Further, 100 percent central grant assistance not exceeding Rs. 500 per household was made available to state governments to cover reasonable cost of accession of land where necessary and cost of development which included cleaning and leveling of land and provision of paved streets and storm water drains. The benefits of this program could only reach a limited number of landless agricultural labourers due

to constraints of funds. It is in this environment and taking note of the massive shortage of housing in rural areas that Housing and Urban Development Corporation (HUDCO) began to finance rural housing schemes in 1977-78. HUDCO started providing financial assistance upto 50 percent of the unit cost to landless agricultural labourers for whom sites had already been allotted free of cost by the state governments. For rural families, other than the landless families subsidized housing assistance as per urban norms was also made available by HUDCO.

In 1977-78, HUDCO started financing rural housing schemes, which (No. 29):

a) Met the basic need of shelter by providing inexpensive and functionally efficient shelter for the rural families;

b) Tended to promote community effort including beneficiary families participation;

c) Provided essential services like water supply and waste disposal system;

d) Encouraged the use of local materials, local skills and appropriate construction methods; and

e) Ensured community facilities such as schools, primary health centers, panchayat centers etc., are available.

2.6 Rural Infrastructure

The development of rural infrastructure is crucial for the growth of rural economy as well as welfare. It contributes directly or indirectly for the improvement of living conditions of the people. Poverty assessment studies emphasize the close relationship between infrastructure facilities and rural poverty. Inadequate rural connectivity and lack of mobility pose constraints to rural development in India. Infrastructure facilities and improvement in delivery of services can reduce the cost and time of the various economic and social

activities taken up by the rural people. Basic infrastructure support is absolutely essential to strengthen the rural economy, and to promote equitable distribution of benefits of development between the producers and the consumers in the rural areas (No. 19).

The basic characteristics of infrastructure facilities are (No. 11):

1. Essential but not directly productive
2. Pre-requisites of development
3. Non-importability: By and large, infrastructure services have a certain degree of fixity over space and have to be usually created at or near the place of their use. However, it would be proper to point out that the above is not always true.
4. Lumpiness: These facilities cannot be built in bits and pieces and have to be provided in a minimum size. In some cases, this may not be strictly true.
5. External economies: Another distinguishing feature of infrastructure is that these facilities generate an external economy that is services rendered free.
6. Provision by state

In the context of developing countries, like India, it would be advisable to adopt a broader concept of infrastructure by including under it all the basic economic and social services, which promote directly productive activities.

The items of infrastructure can be classified as follows:

1) Economic infrastructure
    a) Transport
    b) Communication
    c) Energy
    d) Irrigation

2) Social infrastructure

   a) Education

   b) Health and sanitation

   c) Water supply

3) Institutional infrastructure

   a) Banks

   b) Marketing

   c) Warehousing

   d) Local administrative offices and extension agencies

The first type i.e. economic infrastructure includes those items, which provide general facilities for carrying of economic activities. These are sometimes called the hard core of infrastructure and the basic for general economic activity. The second category dealing with social infrastructure broadly covers facilities, which lead to human capital formation. The last category includes various developmental organizations (No. 11).

Considering the decline in investment in the farm sector during the 1980's followed by its sluggish growth in 1990s, in the union budget 1995-96, a proposal was made to set up an independent fund called Rural Infrastructure Development Fund (RIDF) under the National Bank for Agriculture and Rural Development (NABARD). The Rural Infrastructure Development Fund-I was initially envisaged to be a source of finance to state governments for completing rural infrastructure projects, which were held up due to non-availability of financial resources. In 1996-97, it was decided by National Bank for Agriculture and Rural Development to extend the Rural Infrastructure Development Fund facility for new rural infrastructure projects also and this policy has been continuing since then. The assistance under Rural Infrastructure Development

Fund has been mainly for the development of irrigation and rural roads. Out of the 26,220 schemes of Rural Infrastructure Development Fund I, II and III, 15,987 schemes (i.e. 61.1% of the total) were for minor irrigation and 8025 (i.e. 31% of the total) was for rural roads. However, there were other schemes also i.e. watershed management, flood protection, rural bridges, rural market yards, inland waterways and command area development programs.

The thrust in improving irrigation potential and rural infrastructure thorough Rural Infrastructure Development Fund represents a policy initiative aimed at ensuring not only food security but also employment generation in the rural sector, since as one has seen in many countries, threats to food security in the events of crop failures and other reasons can have devastating consequences to the entire economy. Improvement of rural poor through income and employment would go a long way in reducing their large-scale migration to the urban slums, which is increasingly becoming an alarming feature of our cities (No. 33).

2.7 Women and Child Development

In rural India, the high rate of illiteracy and low economic status of women underline the need for increasing their earning power by providing the income generating assets. Provision of employment opportunities and income to rural women is one way to improve their nutrition, health, education and social status. In most of the developing countries greater emphasis is laid on the need for development of rural women and their active involvement in the main stream of development. In our country continuous efforts are being made by the union and state governments to improve the status of rural women, especially those below the poverty line through different schemes of rural development.

Ever since independence a number of innovative schemes have been launched for the upliftment of women in our country. There has been a perceptible shift from viewing women as critical agent for socio economic development. Now the emphasis has shifted from development to empowerment (No. 34).

2.8 Rural Industries

In an economy characterized by near total dependence on agriculture, transfer of labour from agriculture to industry should be the major strategy for toning up the performance of agriculture to industry. This emphasis is not meant to minimize the importance of growth in education, health and allied branches of service sector. During a quarter of a century of planning in India, sizeable resources were utilized in starting new industries using imported technology and machineries. This has lead to unemployment of 3% of the total labour force and dependence on massive maintenance imports. The share of agriculture in total employment remains unchanged. Rural industries with labour intensive techniques and low gestation period would have achieved a higher measure of diversification in output and employment (No. 12).

The traditional village industries are mostly cottage industries and may be divided into the following classes for studying their proper development as has been done by the Planning Commission in the Five-Year plans. They may be either industries or crafts (N0. 10):

a) Khadi and village industries

b) Handlooms

c) Handicrafts

d) Other rural industries

For the developing of the each of the above village industries the following points will have to be looked into (No.10):

a) Organization and state policy

b) Finance

c) Supply of raw materials and equipment

d) Marketing

e) Technical guidance and research

There exists a tremendous potential for the expansion of apiculture as a cottage industry among rural women. There is a wide gap between India's present actual production of honey and the potential available there for. Though, as per the estimate of the national commission on agriculture, the existing vegetation wealth of India is capable of sustaining 150 million bee colonies with a prospective production of honey to the tune of 1.5 lakh tones per annum. Yet the present level of India's annual production of apiary honey is about 7,000 tones only. Evidently, an immense scope is available in the sphere of untapped apiary resources for generating self-employment opportunities to rural women on a mammoth scale (No. 15).

2.9 Forestry

Forests are a renewable resource and a natural asset of immense value conferring many tangible and intangible benefits and can be kept perpetually productive and useful if of adequate extent, ideally dispersed, scientifically managed and judiciously, utilized. The rising demands made by the mounting population coupled with the face of urbanization, industrialization and multiple uses of forests has resulted in shrinking forest area with low productivity. This has necessitated raising of the large scale plantation of fast growing species or increasing the productivity of our limited forest areas through scientific forestry

with proper safeguards against site deterioration side by side keeping the existing natural forests in their pristine condition for ecological conservation (No. 1).

The forests of India have been subjected to severe biotic pressures. As a result most of the forest areas are under stocked with out any regeneration or inadequate regeneration and more or less in degradation stage. The ecological balance has been disturbed to such an extent that if remedial measures are not taken up, this restoration will be very difficult (No. 1).

Loss of forest cover of all descriptions, whether it is moist, semi-moist or deciduous, is rampant. At current levels of productivity and consumption of forest produce "each Indian would require at least 0.47 hectare of forest to meet his or her basic needs. However, the prevailing forest cover available per capita is only 0.08 hectare"(Govt. Of India, 1989). This is likely to go down to 0.07 hectare by 2000 AD. This rapid loss of forest cover is due to its exploitation by legal and illegal means for fuel, wood, grazing, shifting cultivation, encroachments, forest fires and diversion of forestland to non-forest purposes. Against a sustainable level of production of 40 million cubic meters of firewood from India's forest, the annual extraction, partly authorized and mostly unauthorized, is 236 million cubic meters. Similarly, the availability of fodder from pastures agricultural lands and forest is about 440 million tones as against a requirement of double that quantity to feed the country's cattle population of 400 million. The consequence is overgrazing of forestlands and competition with humans for food (No. 30).

Joint Forest Management (JFM), a program initiated in the early Nineties by the state governments is a significant achievement to enlist cooperation of village communities in forest conservation. In essence, Joint Forest Management

empowers village communities to restore lost health to degraded forests. The village community complements the efforts of the official machinery in this. It takes upon itself certain obligations like keeping the forests free from grazing by cattle, not removing forest produce without permission and not practicing agriculture on forestlands. In return for the community committing itself to protection of the forest and forest produce, its members become entitled to enjoy usufructuary rights over forest produce and a share in the profits of sale of such produce by the Forest Department. Joint Forest Management has been successful in many parts of the country (No. 30).

2.10 Rural Energy

Apart from solar energy, agriculture production uses basic additional energy inputs – soil, water, tractive power and chemicals for growth of plants. The amount of energy invested through these inputs and the quantity actually used by the plants govern the crop growth and yield during their life cycle. Traditional agriculture was mostly dependent on non-commercial energy sources. In modern agriculture, commercial energy sources (fuel, machinery and chemicals) contribute bulk of the energy supplies to the production system (No. 28).

A closer look at the trend of direct energy use in production agriculture since 1970 indicates a sharp decline in the contribution of animate energy since the early Eighties due to continuous decrease in the use of draught animal in crop production activities. The Government of India has laid emphasis on doubling the food production in the next ten years requiring a growth rate of 7.18 per cent as compared to 3.7 per cent during the Eight-plan period. With the total cultivable land remaining stagnant, this will be possible through an increase in land productivity (No. 28).

Increase in land productivity and efficient diversification of agriculture for better economic return to the producers will call for significantly higher levels of energy inputs in agriculture.

Rural home activities being the major energy consumer in the village eco-system consume 69-85 per cent of total energy. Energy saving and supplementation in this sector is thus also of primary importance to energy management (No. 28).

With the realization that the decimation of forests was severely disturbing the ecological balance, the Indian government decided to introduce alternative cooking fuels so that forests are not affected. One of these energy sources was the biogas plant, which utilized cow-dung as feeding material for release of energy. But gas plants could be useful only to the more affluent villagers who also had enough cattle for regular supply of dung. For the vast majority of the poor, biogas plants had hardly any meaning. It is here that new innovative methods could serve as a viable alternative. These methods become increasingly important in view of the rapidly declining forest cover (No. 26).

The impending nightmare of rural energy crisis can be obviated by a greater thrust on non-conventional energy sources, popularization of energy efficient cooking devices and heating system and massive afforestation programs involving rural masses to realize fuel and fodder on a desired scale (No. 26).

2.11 Ecology and Environment

In India where 76.6 percent of the population live in villages. Ecology prevailing in the Rural India is a very important mater to be considered in all our efforts to ameliorate the condition of the people.

The villages in Rural India in the past presented a most hygienic and ideal environment amidst nature. The villages even in the hilltops were covered by

the forest, with no landslides, erosion; and carried perennial streams and water bodies.

The state of rural environment can be improved by paying proper attention to management and planning of built environment in the rural areas. In India efforts are being made to provide various facilities like improved dwellings, safe drinking water, modern sanitation, convenient energy supplies, modes of transport and communications, health and educational services, etc. But the creation of these facilities is being done in an uncoordinated manner under various programs. These programs are ad-hoc and are not based on clear priorities. Moreover, there is little effort " to modify the development process itself in a manner that will bring it into greater harmony with the needs of the people and with need to improve rural environment along with the increase in productivity of land, labour and other resources" (No. 1).

The task of tackling of environmental challenges is not just a scientific and technical matter but also a most important economic and social issue. Therefore, concerted efforts of all are needed for planning and management of rural environment so that favourable conditions for the quality improvement of life of villagers may be ensured in near future.

2.12 Cooperatives

There is a significant share of cooperative movement attributed to the national economy in terms of products and services. The Indian cooperative movement is one of the biggest in the world, consisting of around 4,88,158 cooperatives with a membership of 20.75 crores and a working capital (credit+non-credit) of Rs.165.31 crores. In India, co-operatives account for about 55 percent of total sugar production. About 8% of export of cotton yarn, around 22 percent of fertilizer production, more than 7.05 crore tones of milk

production per year (after successful Anand-experiment, Gujarat New Operation Flood Phase III), more than 50 percent of oil (edible oil) marketed etc. The share of Handloom in cooperative accounts for 30 percent and 21 percent respectively. The significant contribution of cooperatives in various segments of Indian economy shows wide range potentiality of cooperatives (No. 18).

It is evident that the cooperative movement of India has a vast rural network. Thus, the rural market becomes the main "target market" for cooperative business. In order to maintain the increasing market share of the rural market, the cooperative sector has to explore many new fields and also maintain existing status of business smoothly in the rural market. Now, the monopoly structure of the cooperative sector, as an emerging "institution" for rural areas, has changed due to competition from different angles and there is also the probability of more competition to be faced by the rural cooperatives in course of the increasing process of economic liberalization (No. 18).

However, most of the private companies in view of their cost-benefit analysis, profit margin calculation and other type of infrastructure or social-overhead development considered the rural market as backward market. But, now, in the competitive market environment, due to the shortage of target market for their products or services, the private and other sectors have already started to approach rural market. Thus it is high time for cooperatives to take care of this expected acute competitive situation (No. 18).

2.13 People's Participation

Participation should include the notions of contributing, influencing, sharing, or redistributing power and of control, resources, benefits, knowledge, and skill to be gained through beneficiary involvement in decision making. Participation is a voluntary process by which people, including the disadvantage

(in income, gender, caste, or education), influence or control the decisions that affect them. The essence of participation is exercising voice and choice. And developing the human, organizational and management capacity to solve problems as they arise in order to sustain the improvements.

Half-hearted measures towards people's participation have only resulted in wastage of funds with no gains. It must be, therefore, understood as a process by which the people are able to organize themselves and, through their own organization, are able to identify their own needs, and share in the design, implementation and evaluation of the participatory action. Thus various elements of participation are decision-making at various stages, control and management of funds and resources; share the final produce, and certainty of benefits. In other words, participation should not only stop at information sharing or consultation, but also decision-making and initiating action are important and essential components of participation.

Participation in decision making is an important capacity building process. As people participate in making new decisions and solving problems, learning takes place. This learning is internalized, because it is accomplished experientially. It, therefore, leads to changes in attitude, behavior confidence, and leadership. Newly acquired knowledge is, therefore, the first outcome of participation.

Empowerment is a result of participation in decision-making. An empowered person is one who can take initiative, exert leadership, display confidence, solve new problems, mobilize resources, and undertake new actions.

The third outcome is organization building. Decentralized programs require strong local organizations. When local organizations get the opportunity to manage resources and support development, they can become stronger.

These three outcomes of participation-learning, empowerment and a vibrant organization-need to be measured through observable indicators, which will vary from project to project. Each project must develop clearly observable indicators on people's participation, so as to judge whether they are on track or not. Such indicators should then be given to monitors and evaluators, who have to do mid-course evaluation and impact assessment (No. 15).

2.14 Rural Financial Institutions

The capital requirements for agricultural and rural development are tremendous. Capital is required not only for on-farm investment to improve the production apparatus and to provide various farm inputs and services, but also for a vast array of supportive infrastructure facilities such as power, roads, transportation, communication, markets, storage, education, training, research and extension. Capital is also required for direct creation of non-farm jobs through the provision of factories and their complement of machinery and equipment.

The institutional sources of rural credit include the government, the Reserve Bank of India, the National Bank of Agriculture and Rural Development (NABARD), land development banks, commercial banks, cooperative banks, regional rural banks, cooperative credit societies, farmers' service societies, large area multipurpose societies, various corporations, foundations, etc. The roles of the some of these institutions or agencies are discussed in brief:

- NABARD

In the field of rural credit and agricultural development, establishment of National Bank for Agriculture and Rural Development (NABARD) is a major event. It was established on 12th July 1982 as an apex body with the responsibility for overall development, policy, planning and financial support for

agriculture and rural development. The National Bank for Agriculture and Rural Development provides credit to rural sector through cooperative banks, commercial banks, regional rural banks and other financial institutions set up to finance rural development. The bank ensures coordination in operations of various institutions engaged in the field of rural credit. During 1997-98 (July-March) National Bank for Agriculture and Rural Development sanctioned short-term credit limits aggregating to Rs. 5,169 crores to the state cooperative banks (No. 5).

❖ Regional Rural Banks

With a view to improving the flow of credit to the rural sector of the economy, a number of Regional Rural Banks have been setup in the areas where commercial and cooperative banking facilities have been lacking. These banks cater to the credit requirements of the weaker sections, small and marginal farmers, landless labourers, village artisans and petty businessmen in the rural areas. In all, there are 196 regional rural banks with their 14,475 branches, covering 427 districts in 23 states with a mobilized deposit to the tune of Rs. 22,198 crores and the credit support provided by these banks amounted to Rs. 9,876 crores at the end of March, 1998 (No. 5).

❖ Agricultural Credit Cooperative Societies

Cooperative credit societies entered the field of rural finance with the adoption of the Cooperative Societies Act of 1904. Since then, the government has been making deliberate attempts to nurture the cooperative movement in the country in the larger interests of the rural people. Cooperative organizations have been recognized as the best institutions to provide rural credit to the farmer because they satisfy all the important criteria of sound agricultural credit. The cooperative organization satisfies the basic condition of proximity, as the

2.16 Enumeration of case studies

I) **Title:** Monitoring of Integrated Rural Development Program: A study in Wardhannapet block, Warangal District, Andhra Pradesh (No. 12).

Objectives of the study

1) To study the effectiveness of existing monitoring mechanisms in Integrated Rural Development Program, and
2) To study the possibility of unique scientific sampling procedures in monitoring at different levels.

Concept:

The concept of monitoring was used in the study. Monitoring is basically a management activity concerned with the implementation part of a project." It is a facilitating activity, a service function directed to ensuring project performance by assuring if everything is proceeding as planned within the time and cost constants". It provides warning signals so that the management can take remedial action in good time.

The deviations between the intended and actual achievement will be minimized if there is proper feedback about the difficulties encountered and if the corrective action is taken in time. Thus, the concept of monitoring is the two-way flow of feedback information and corrective action.

Methodology:

The design of a monitoring system involves the following stages:

1. Formulation of objectives of various types and their quantification;
2. Input monitoring-grounding and later stages-feedback and corrective action; and
3. Output monitoring -Indicators and use of sample surveys.

The various stages in the grounding of a scheme may be listed as illustrated below:

1. Household survey
2. Identification of beneficiaries
3. Final selection of beneficiaries
4. Release of subsidy
5. Purchase of unit/ grounding of the scheme

For each of these, the time targets and/or financial targets may be fixed.

Conclusions:

The authors proposed a methodology to monitor the project management and indicators to analyze the progress at each stage.

II) **Title:** Plan formulation and implementation at block level (A study in Wanaparthy Block, Mahbubnagar district, Andhra Pradesh) (No. 13).

Objectives of the study:

1. To understand the planning process both at the block and district levels to the extent decisions for block development are made at the district level.
2. To study the linkages of block level planning with those of district and state level planning.
3. To review the integration of Integrated Rural Development Program with other on going schemes and
4. TO understand the mechanism of implementation and monitoring followed for block plan.

Methodology:

The historical and theoretical aspects of block-level planning have been drawn from various publications of the planning commission and the Ministry of Rural Development, Govt. of India.

Structured questionnaire was canvassed to all the departmental heads at the district level. At the block level, Block Development Officer, extension officers and the Village Development Officers (VDOs) were the main sources of information as respondents. In order to ascertain the views of individuals regarding the planning and implementation of beneficiary-oriented schemes under Integrated Rural Development Program, 60 beneficiaries were also contacted and interviewed.

Conclusions:

The authors concluded that the block-level planning in the study area is in infant stage. Attempts are being made to follow a right approach in plan formulation and implementation with in the frame of multi-level planning concept. However, success is far from reach due to the inadequacy of trained personnel, absence of a planning machinery and right person to supervise the plan formulation and implementation. The success of block-level planning in the study area, therefore, lies in strengthening the planning machinery and deploying additional trained staff at the block level.

Chapter 3

Study Area Profile

3.1 Introduction

Micro level planning is very akin to the Gandhian concept of decentralization. However, right from the beginning Indian planners took recourse to centralized planning, and micro level policies were being formulated at the center, and had no focus on the local problems and situation in a tiny village or in a tribal hutment. As a result, one of the primary objectives of planning i.e., rural upliftment has not yet been fulfilled. Locally available scarce resources are not used scientifically, the existing local technologies have lost their values and the level of deprivation and destitution has increased many folds since independence. Despite strong centralized efforts spanning over four decades, the countryside has experienced severe economic recession, and rampant poverty, unemployment. The disparities between the existing socio-economic divisions have widened, leading to a dangerous degree of social schism in the society.

The critical situation can only be circumvented by ensuring rational use of resources at the micro level, and careful by weighing the implications of various alternative policy decisions.

Micro level planning takes into account the essential needs of the local people and arrives at policies for judicious exploitation of the locally available resources. For this purpose, a mandal, GARA, has been chosen.

A detailed study was carried out to understand the socio, economic and physical conditions of the study area. It is very much essential, because it is

impossible to prepare a development plan with out thoroughly understanding the study area.

3.2 Physical Aspects

The physical aspects of the Mandal are as follows:

3.2.1 Location

Gara Mandal is located along the Bay of Bengal coast, and the river Vamsadhara. Bay of Bengal flanks it on the east and south, while river Vamsadhara bounds it on the north, and Srikakulam, the district headquarters, on the west. It lies in 18°17′ latitude, and in 83°05′ longitude. The total area of the Mandal is 156.53 sq. km. The Mandal is a cluster of 25 villages (Fig 3.0) with its headquarter at Gara, which is at a distance of 18 km. from the district headquarter `Srikakulam'. The place has historical background too. Satavahanas ruled it in ancient periods. A hillock in the headquarters with a museum on it is a symbol of past glory.

3.2.2 Topography

The topography of the area is flat (approx.98 percent), and has a gentle slope towards east. The river Vamsadhara, having its origin in the Eastern Ghats of Orissa, flows along the Mandal and merges into the Bay of Bengal. Villages situated on the banks of the river are flood prone areas. It has a forest cover of 1060 ha.

The Mandal is absolutely rural in character. Agriculture is the main livelihood of people. More than 70% of the total area is fertile, and varieties of crops are sown. Places like Srikurmam, Salihundam, and Calingapatnam are tourist attractive points. This Mandal is enriched by good agricultural activities and confined with biological resources, where as poverty, unemployment, malnutrition, low living standards, etc. are prevailed.

N

W E

S

SUSTAINABLE DEVELOPMENT PLAN FOR ZONE

: 1: 50,000

DEX

MANUAL BOUNDARY

VILLAGE BOUNDARY

TAR ROAD

METAL ROAD

RIVER

NATIONAL HIGHWAY

K . SREE RAMA MURTHY

M.U.R.P II Year

UNIVERSITY OF ROORKEE

3.2.3 Climate and Rainfall

The average rainfall in the Gara Mandal is about 938.0 mm, where as the rainfall recorded at the rain gauge center in Calingapatnam is 1251.1 mm in 1994-95. The minimum temperature is 17.4° centigrade and the maximum temperature is 34.1° centigrade.

3.2.4 Flora and Fauna

The available forests can be broadly classified as follows:

a) The south Indian moist deciduous, which includes mixed forests, sal forests and hilly savannas,

b) The south Indian dry ever green miscellaneous forests, and

c) The south Indian dry deciduous that includes mixed forests and thorn forests.

The land fauna available in this Mandal is very little. In the past, the Mandal must have been the resort of several wild animals. Human habitation and the indiscriminate destruction of forests resulted in the disappearance of many species. The jackal, fox, wild cats, and wild dogs are the carnivorous animals found in the Mandal while wild goat, bears and wild boars are the other common ones. Among the birds, peacock, jungle fowl, pigeon, parrot, myna partridges, goose, doves, etc. are common.

3.2.5 Land use Pattern

Land use pattern more or less decide the functions of the system in the rural system. If more quantity of land is under agricultural operations in the rural system, certainly the system is economically well off since agriculture is the major source of income in the rural system. To understand the land use pattern of the study area, it has been studied thoroughly and presented as follows:

a) Geographical Area – 15653 Hectare

b) Forest – 1060 Ha. (6.8%)

c) Barren and Uncultivated Land - 1096 Ha. (7.0%)

d) Land Under Non-Agricultural Use - 2386Ha. (16.8%)

e) Grazing Lands - 125 Ha. (0.8%)

f) Tree Crops - 112 Ha. (0.7%)

g) Cultivable Waste - 74 Ha. (0.5%)

h) Current Fallow - 176 Ha. (1.1%)

i) Net Area Sowed - 10379 Ha. (66.3%)

j) Total Cropped Area - 16509 Ha. (105.5%)

k) Area Sowed More Than Once - 6129 Ha. (39.2%)

(Source: District Statistical Hand Book 1994-95)

3.2.6 Population

The Mandal has 14958 households, having the total population of 68664. It has a density of 439 persons per sq. km. There is total number of 4167 scheduled caste and 118 scheduled tribe population, which is accounted as 6 percent and 0.1 percent respectively of the total population. In the Mandal, 20061 persons are literates, which represent only 29.16 percent. Of the total 28927 main workers, 7227 are cultivators, 13318 are agricultural workers and 924 are working in various household industries. The remaining 7458 people are working under different other categories.

- No of Villages With Population Less Than:

200: 1

200 - 499: 1

500 - 999: 4

1000 - 1999: 7

2000 - 4999: 8

5000 – 9999: 2

10000 & above: 1

(Source: District Statistical Hand Book 1994-95)

3.2.7 Land Holdings

Total numbers of people under different categories of farm size are as follows:

a) Upto 1 hectare-11666

b) 1.0 to 2.0 hectare-1390

c) More than 2.0 hectare-1218

(Source: Data collected from District Statistical Hand Book)

3.2.8 Agriculture

The main crops cultivated in the Mandal are Paddy, Raagi, Bajra, Sugarcane, Groundnut and Mesta in the Kharif season; and Corn, Green gram, Black gram, Horse gram, Chilli and Groundnut in the Rabi season. Of the total geographical area of 15653 hectares, 5357 hectares irrigated by canals, 744 hectares by ponds and 732 hectares by tube wells. The irrigation facilities in the Mandal are mainly provided by Bhiri Desa Gedda canal and Narayanapuram project canal. Tube wells are the major source of irrigation in villages, Gara, Booravilli, Vadada, vamaravilli and Salihundam. The net area irrigated is 72.7 percent of the total 13854 hectares cultivable area.

3.2.9 Cropping Intensity

a) Net area sown-10379 ha (66.3%)

b) Gross cropped area-16509 ha (105.5%)

c) Area sown more than once-6129 ha (39.2%)

(Source: District Statistical Hand Book 1994-95)

3.2.10 Irrigation Intensity

A. Net area irrigated in hectares:

a) Canals-5357

b) Tanks-744

c) Tube wells-732

d) Total irrigated area-7052

e) Area irrigated more than once-639

B. Gross area irrigated in hectares

a) Canals-5400

b) Tanks-744

c) Tube wells-1329

d) Other wells-195

e) Other sources-24

f) Total-7691

(Source: District Statistical Hand Book 1994-95)

3.2.11 Livestock Population

Livestock population is one of the important sources of income in the rural system. Livestock supply labour, meat, milk, leather, and farmyard manure to the mankind. The larger number of availability of bovine population in the rural system is also a symptom of its economic status. The available number of bovine population is studied, and presented as follows:

1. Livestock – a) Cows - 9586

   b) Buffaloes - 3645

2. Livestock Used for Working - 8033

3. Sheep and Goats - 9902

4. Poultry - 31042

Total - 62508

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5. Milk Collecting Centers - 21
6. Total Milk Collected in the Year 1998-99 (in liters) - 16840
7. Livestock which Availed Medical Facility - 2680
8. Total no. of Veterinary Hospitals - 6
9. No. of Villages in which Fishing is Livelihood - 5

(Source: Data collected from Mandal Revenue Office)

3.3 Other Characteristics

3.3.1 Education

Education is the important phenomenon, which paves the way for steady growth and development of any country. In rural development, education plays a very important role. Having these in mind, the availability of the education centers is analyzed and found that there are one teacher training center, one junior college, six high schools, three upper primary schools, and twenty one primary schools in this Mandal.

3.3.2 Literacy

Literacy and awareness among the people would lead to adoption of technology at faster rate in the system. Hence literacy was considered for studying the system.

a) No of Literate People - 20061(29.16%)

b) Male - 13436(39.05%)

c) Female - 6715(19.40%)

(Source: District Statistical Hand Book 1994-95)

3.3.3 Occupation

Occupation of the people decides their income, standard of living, etc. so this parameter was also considered for studying the study area in a detailed manner.

a) Total Main Workers - 28927

b) Cultivators - 7226

c) Agriculture Labour - 13318

d) Livestock, Forestry, Fishing, etc. - 2864

e) Mining and Quarrying - 40

f) Household Industry - 924

g) Other than Household Industry - 375

h) Construction - 232

i) Trade and Commerce - 1476

j) Transport, Storage and Communications - 508

k) Other Services - 1969

l) Marginal Workers - 4088

m) Non Workers - 35758

(Source: District Statistical Hand Book 1994-95)

3.3.4 Health

The head quarter of the Mandal is confined with one primary health center, five primary nursing homes and one allopathic center. Besides these, a primary health center with 6 beds is also available in the Srikurmam village of the Mandal.

3.3.5 Social Welfare

There are 4 boy's hostels in the Mandal. Two of them are exclusively allotted for scheduled caste, and the rest are for backward classes. A total of 328 boys reside in these 4 hostels.

3.3.6 Financial Institutions

The Mandal has very good coverage of financial institutions. Nationalized banks, such as, State Bank of India, Andhra Bank, etc. are having branches in this Mandal. Besides these, this Mandal is blessed with Grameena Bank (Regional Rural Bank), seven Agricultural Credit Cooperative Societies, etc.

3.3.7 Other Details

Scheduled caste population also lives in the villages of the Gara Mandal. It has been observed that there are about 6 percent of the total population belong to this category. They mainly engage in agricultural and it's allied activities. They engage construction of wells, ponds, etc. for irrigation purpose too. The people those who live in the seashores, mainly depend on fish for their day-to-day activities. Fish is considered as the major foodstuff in this segment.

The Mandal is more or less agriculture oriented. In industrialization, it has been observed that it has only one small industry, with only 20 employees. Processing units, such as, rice mills and flourmills, which are very much essential for day-to-day domestic activities, are also available. Besides these, cottage industries, such as, weaving and handlooms are also found in two villages. But the number of units is very meager.

3.3.8 Administrative Setup

The administrative setup at the Mandal level is as follows:

Andhra Pradesh state has 23 Districts. Of which Srikakulam district is also confined in Andhra Pradesh state. The district has been bifurcated into 37 Mandals for development administration. Gara Mandal is also one among them. This Gara Mandal has 25 revenue villages. All 25 revenue villages are further bifurcated into 110 villages. The Development Officer (Mandal Development

Officer) in charge of all development programs, which are implemented in the Mandal.

3.4 Analysis of the Important Control Parameters:

Certain important control parameters decide the function of the rural system. The most important control parameters are identified and analyzed very carefully. They are:

1. Total number of households.
2. Total number of families.
3. Total number of population, male, female, etc.
4. Total number of scheduled caste population.
5. Total number of scheduled tribe population.
6. Total number of literates.
7. Total number of cultivators.
8. Total number of agricultural workers.
9. Total number of temporary workers.
10. Land holding size.
11. Total number of livestock population.
12. Number of bus stops.
13. Number of schools.
14. Number of PHC's.
15. Number of agricultural extension centers.
16. Number of fertilizer centers.
17. Villages with pucca roads.
18. Weaker sections housing schemes.
19. Number of houses constructed.
20. Road network.

21. Electricity connections.

22. Area under ponds.

The above said variables are studied very carefully for the year 1981 and 1991. The percentage variations are analyzed very carefully. The data pertaining to the aforesaid variables for the year 1981, 1991 and then percentage variation are presented in table no.'s 3.1 - 3.3, 3.4 – 3.6, 3.7 – 3.9 respectively.

Table 3.1: Details of Population as per 1981 Census

S.NO.	NAME OF THE VILLAGE	CODE NO OF 1981 CENSUS	AREA IN SQ. KM.	NO OF HOUSES	NO OF FAMILIES	TOTAL POPULATION			SCHEDULED CAST		SCHEDULED TRIBE	
						TOTAL	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	33	23.37	1310	1323	6604	3276	3328	262	266	4	7
2	VATSAVALASA	47	7.94	475	475	2251	1088	1163	-	-	-	-
3	DEEPAVALI	56	1.41	206	207	834	412	422	20	23	-	-
4	GONTI	57	2.22	145	148	765	382	383	32	30	-	-
5	SREEKURMAM	58	36.14	2505	2538	12109	6021	6088	328	285	3	4
6	NIZAMBAD	49	2.62	214	214	920	454	466	-	-	-	-
7	KOTTUR SAIRIGAM	51	3.19	202	202	1093	557	536	60	67	-	-
8	RAGHAVAPURAM	52	0.43	43	44	184	90	94	-	-	-	-
9	FAKEERUTEKYA	35	0.49	2	2	10	7	3	-	-	-	-
10	SATIVADA	50	3.86	277	278	1363	669	694	4	4	-	-
11	SEETARAMPURAM	34	0.36			UNINHABITABLE VILLAGE						
12	AMBALLAVALASA	36	3.19	137	137	581	280	301	37	39	-	-
13	BOORAVELLI	37	3.04	303	314	1344	635	709	72	81	-	-
14	SALIHUNDAM	38	7.44	718	736	3518	1741	1777	104	102	-	-
15	JALLUVALASA	39	0.68	73	96	476	237	239	27	23	-	-
16	GARA	40	5.34	536	542	2810	1402	1408	51	62	-	-
17	VAMARAVILLI	41	10.8	656	685	3077	1544	1533	108	86	3	4
18	CALINGAPATNAM	42	6.58	1046	1068	4922	2463	2459	123	82	1	1
19	TONANGI	43	7.56	746	766	3693	1805	1888	8	6	-	-
20	KORLAM	44	4.97	430	438	1962	918	1044	41	37	-	-
21	KORNI	45	2.95	292	297	1455	732	723	31	31	-	-
22	TULUGU	46	5.16	311	315	1431	718	713	20	13	-	-
23	JAFARABAD	48	3.86	147	149	760	396	364	-	-	-	-
24	VADADA	55	9.98	518	525	2674	1313	1361	54	73	9	6
25	RAMACHANDRAPU	53	3.03	422	429	2019	960	1059	75	69	9	7
			156.61	11714	11928	56855	28100	28755	1457	1379	29	29

(source: Data collected from Mandal Revenue Office)

Contd...

S.NO.	NAME OF	NO OF LITERATES		TOTAL WORKERS		CULTIVATORS		AGRICULTURAL WORKERS		COTTAGE INDUSTRIES		WORKERS	
	THE VILLAGE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	759	243	2120	730	1260	334	464	318	72	31	324	47
2	VATSAVALASA	197	26	610	370	178	109	66	231	1	2	365	28
3	DEEPAVALI	82	19	250	115	94	45	104	63	-	-	52	7
4	GONTI	185	96	238	78	173	51	48	27	4	-	13	-
5	SREEKURMAM	1742	748	3424	1715	1190	334	1072	1259	88	16	1074	106
6	NIZAMBAD	88	42	302	51	197	19	57	28	7	-	41	4
7	KOTTURU SAIRIGAM	46	6	356	274	181	117	99	144	6	1	70	12
8	RAGHAVAPURAM	24	2	61	39	47	23	10	14	-	-	4	2
9	FAKIRUTEKYA	7	3	2	1	-	-	-	-	-	-	2	1
10	SATIVADA	165	62	398	245	177	80	120	144	9	5	92	16
11	SEETARAMPURAM					INHABITABLE VILLAGE							
12	AMBALLAVALASA	60	27	180	108	113	46	43	57	3	-	21	5
13	BOORAVELLI	188	88	412	216	119	21	186	173	28	6	79	16
14	SALIHUNDAM	489	190	1111	655	362	150	415	447	126	28	208	30
15	JALLUVALASA	127	41	132	50	81	16	34	31	5	3	12	-
16	GARA	506	221	832	451	311	68	202	339	102	8	217	36
17	VAMARAVILLI	560	289	873	598	226	120	405	373	15	1	227	104
18	CALINGAPATNAM	1500	749	1035	488	103	48	230	278	33	28	669	134
19	TONANGI	423	74	941	350	96	9	171	209	12	28	662	104
20	KORLAM	311	139	494	322	141	16	148	260	13	9	192	37
21	KORNI	287	161	398	138	203	29	142	103	21	2	32	4
22	TULUGU	159	66	419	190	184	63	123	117	2	1	110	9
23	JAFARABAD	97	14	294	263	231	207	41	54	-	1	22	1
24	VADADA	435	156	841	489	352	177	314	280	12	8	163	24
25	RAMACHANDRAPURAM	224	82	602	356	340	174	92	133	32	32	138	17
	TOTAL	8661	3544	16325	8292	6359	2256	4586	5082	591	210	4789	744

(Source: Data collected from Mandal Revenue Office)

Table 3.2: Details of Agricultural Land Holdings(in 1981)

.NO	NAME OF THE VILLAGE	UPTO 1 HECTARE TOTAL	1.0 TO 2.0 HECTARES TOTAL	MORE THAN 2.0 HECTARES TOTAL
1	AMPOLU	1473	241	247
2	VATSAVALASA	242	66	59
3	DEEPAVALI	129	18	7
4	GONTI	88	29	24
5	SREEKURMAM	1105	352	348
6	NIZAMBAD	103	27	20
7	SATIVADA	103	22	32
8	KOTTURU SAIRIGAM	110	37	31
9	RAGHAVAPURAM	17	13	8
10	FAKIRUTEKYA	0	3	1
11	SEETARAMPURAM	INHABITABLE VILLAGE		
12	AMBALLAVALASA	164	26	22
13	BOORAVELLI	151	29	19
14	SALIHUNDAM	258	46	92
15	JALLUVALASA	19	15	19
16	GARA	612	58	47
17	VAMARAVILLI	322	61	74
18	TONANGI	232	53	32
19	CALINGAPATNAM	431	86	50
20	KORLAM	178	76	56
21	KORNI	214	62	23
22	TULUGU	221	43	42
23	JAFARABAD	123	28	41
24	VADADA	404	105	149
25	RAMACHANDRAPURAM	167	20	35
	TOTAL	6866	1516	1478

(Source: Data collected from Mandal Revenue Office)

Table 3.3: Facilities Available in Individual Villages(1981)

S.NO.	NAME OF THE VILLAGE	PHC	GOVT. HOSPITAL	VILLAGE HEALTH CENTER			SANTHA	MARKET YARD	BANKS		AGRICULTURAL EXT CENTERS
				ALLOPATI	OTHERS	ALLOPATI(PVT)			COOPERATIVE	COMMERCIAL	
1	AMPOLU	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO
2	VATSAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3	DEEPAVALI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
4	GONTI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
5	SREEKURMAM	YES	NO	NO	NO	YES	NO	NO	NO	YES	NO
6	NIZAMBAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7	SATIVADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
8	KOTTURU SAIRIGAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
9	RAGHAVAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
10	FAKIRUTEKYA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
11	SEETARAMPURAM			INHABITABLE VILLAGE							
12	AMBALLAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
13	BOORAVELLI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
14	SALIHUNDAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
15	JALLUVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
16	GARA	YES	NO	NO	NO	YES	YES	NO	NO	YES	NO
17	VAMARAVILLI	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO
18	TONANGI	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO
19	CALINGAPATNAM	NO	NO	YES	NO	YES	NO	NO	NO	YES	NO
20	KORLAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
21	KORNI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
22	TULUGU	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
23	JAFARABAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
24	VADADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
25	RAMACHANDRAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	TOTAL	1	0	1	1	5	1	0	0	3	0

(Source: Data collected from Mandal Revenue Office)

S.NO.	NAME OF	CODE AS IN	POLICE	POLICE	BUS STOP		POST	TELEGRAPH	PRIMARY	UPPER	HIGH	COLLEGES
	THE VILLAGE	1981 CENSUS	STATION	OUTPOST	RTC	PRIVATE	OFFICE	OFFICE	SCHOOL	PRIMARY	SCHOOL	
1	AMPOLU	33	NO	NO	NO	YES	YES	YES	YES	NO	YES	NO
2	VATSAVALASA	47	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO
3	DEEPAVALI	56	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
4	GONTI	57	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
5	SREEKURMAM	58	NO	NO	NO	YES	YES	YES	YES	NO	YES	NO
6	NIZAMBAD	49	NO	NO	YES	YES	NO	NO	YES	NO	NO	NO
7	KOTTURU SAIRIGAM	50	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
8	RAGHAVAPURAM	51	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
9	FAKIRUTEKYA	52	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
10	SATIVADA	35	NO	NO	NO	NO	YES	NO	YES	YES	NO	NO
11	SEETARAMPURAM	34	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
12	AMBALLAVALASA	36	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
13	BOORAVELLI	37	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO
14	SALIHUNDAM	38	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO
15	JALLUVALASA	39	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
16	GARA	40	NO	NO	YES	YES	YES	YES	YES	NO	YES	NO
17	VAMARAVILLI	41	NO	NO	NO	YES	YES	NO	YES	YES	NO	NO
18	CALINGAPATNAM	43	NO	NO	NO	YES	YES	YES	YES	NO	NO	YES
19	TONANGI	42	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO
20	KORLAM	44	NO	NO	YES	NO		NO	YES	NO	NO	NO
21	KORNI	45	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO
22	TULUGU	46	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO
23	JAFARABAD	48	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
24	VADADA	55	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO
25	RAMACHANDRAPURAM	53	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO
	TOTAL		0	0	4	10	13	4	21	3	3	1
(Source: Data collected from Mandal Revenue Office)												

VETERINARY CENTERS	AGRICULTURAL CREDIT COOPERATIVES	FERTILIZER CENTERS	PDS	ELECTRIFIED VILLAGES	VILLAGES WITH PUCCA ROAD	GUEST HOUSE/ INSPECTION BUN.	WEAKER SECTION'S HOUSING SCHEME	
							LAND DISTRIBUTED IN ACRE	HOUSES CONSTRUCTED
YES	YES	NO	YES	YES	YES	NO	24.9	292
NO	NO	NO	YES	YES	YES	NO	2.5	60
NO	NO	NO	NO	YES	YES	NO	3.7	50
NO	YES	NO	YES	YES	NO	NO	4.12	64
YES	YES	NO	YES	YES	YES	NO	15.55	290
NO	NO	NO	NO	YES	YES	NO	3.27	60
NO	YES	NO	YES	YES	YES	NO	2.48	60
NO	NO	NO	YES	YES	NO	NO	4.35	76
NO	NO	NO	NO	YES	NO	NO	NO	0
NO	NO	NO	NO	YES	YES	NO	NO	0
NO	NO	NO	YES	YES	YES	NO	NO	0
YES	YES	NO	YES	YES	YES	NO	3.78	74
NO	YES	NO	YES	YES	YES	NO	12.35	270
NO	NO	NO	NO	YES	YES	NO	NO	0
YES	YES	YES	YES	YES	YES	NO	4	76
YES	NO	NO	YES	YES	YES	NO	6.8	110
NO	NO	NO	YES	YES	NO	NO	2.52	62
YES	YES	NO	YES	YES	YES	YES	13.96	305
NO	NO	NO	YES	YES	YES	NO	5	75
NO	YES	NO	YES	YES	YES	NO	2.5	48
NO	YES	NO	YES	YES	YES	NO	19.96	302
NO	NO	NO	NO	YES	NO	NO	2.76	60
NO	YES	NO	YES	YES	YES	NO	7.12	110
NO	NO	NO	YES	YES	YES	NO	13.02	205
6	11	1	18	24	19	1	154.64	2649
Contd...								

Table 3.4: Details of Population as per 1991 Census

S.NO.	NAME OF THE VILLAGE	CODE NO OF 1991 CENSUS	AREA IN SQ. KM.	NO OF HOUSES	NO OF FAMILIES	TOTAL POPULATION			SCHEDULED CAST		SCHEDULED TRIBE	
						TOTAL	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	33	23.37	1652	1656	8062	4045	4017	305	297	-	-
2	VATSAVALASA	47	7.94	619	619	2819	1384	1435	-	-	-	-
3	DEEPAVALI	56	1.41	217	218	1005	503	502	19	22	-	-
4	GONTI	57	2.22	181	183	857	429	428	44	39	-	-
5	SREEKURMAM	58	36.14	3163	3232	14620	7370	7250	556	471	3	2
6	NIZAMBAD	49	2.62	254	255	1224	610	614	55	57	-	-
7	KOTTUR SAIRIGAM	51	3.19	275	276	1387	704	683	90	73	-	-
8	RAGHAVAPURAM	52	0.43	57	57	247	122	125	-	-	-	-
9	FAKEERUTEKYA	35	0.49	3	3	11	6	5	-	-	-	-
10	SATIVADA	50	3.86	349	349	1652	816	836	64	54	-	-
11	SEETARAMPURAM	34	0.36			INHABITABLE VILLAGE						
12	AMBALLAVALASA	36	3.19	185	185	695	333	362	39	38	-	-
13	BOORAVELLI	37	3.04	401	401	1623	782	841	102	117	-	-
14	SALIHUNDAM	38	7.44	942	942	4205	2045	2160	245	242	10	18
15	JALLUVALASA	39	0.68	131	137	544	265	279	29	33	-	-
16	GARA	40	5.34	776	778	3460	1745	1715	64	113	-	1
17	VAMARAVILLI	41	10.8	728	728	3431	1561	1870	94	124	6	17
18	CALINGAPATNAM	42	6.58	1230	1233	5810	2959	2851	149	97	1	1
19	TONANGI	43	7.56	974	975	4532	2199	2333	10	8	-	-
20	KORLAM	44	4.97	530	530	2418	1208	1210	51	48	-	-
21	KORNI	45	2.95	379	379	1675	816	859	29	31	-	-
22	TULUGU	46	5.16	386	386	1719	855	864	15	9	-	-
23	JAFARABAD	48	3.86	156	156	815	412	403	-	-	-	-
24	VADADA	55	9.98	688	691	3244	1604	1640	72	89	12	13
25	RAMACHANDRAPU	53	3.03	589	589	2609	1289	1320	88	85	18	16
	TOTAL		156.61	14865	14958	68664	34062	34602	2120	2047	50	68

(Source: Data collected from Mandal Revenue Office)

Contd...

S.NO.	NAME OF	NO OF LITERATES		TOTAL WORKERS		CULTIVATORS		AGRICULTURAL WORKERS		COTTAGE INDUSTRIES		TEMPORARY WORKERS	
	THE VILLAGE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	1345	499	2351	1172	917	381	819	589	72	31	12	853
2	VATSAVALASA	444	113	763	601	124	61	194	522	1	2	-	28
3	DEEPAVALI	156	54	310	201	64	41	75	137	-	-	15	90
4	GONTI	234	135	942	43	101	9	105	33	4	-	-	64
5	SREEKURMAM	2633	1284	4156	2182	1143	386	1272	1500	88	16	85	977
6	NIZAMBAD	165	58	356	112	210	7	71	89	7	-	1	197
7	KOTTURU SAIRIGAM	195	62	407	139	173	14	88	98	6	1	-	131
8	RAGHAVAPURAM	25	6	66	19	51	11	11	7	-	-	-	5
9	FAKIRUTEKYA	6	3	2	2	1	1	1	-	-	-	2	-
10	SATIVADA	313	135	485	190	183	31	193	139	9	5	6	103
11	SEETARAMPURAM				INHABITABLE VILLAGE								
12	AMBALLAVALASA	96	55	196	140	72	40	112	98	3	-	-	-
13	BOORAVELLI	285	137	478	377	138	68	226	291	28	6	-	-
14	SALIHUNDAM	775	445	1166	715	360	135	442	471	126	28	-	102
15	JALLUVALASA	117	74	150	72	78	16	49	45	5	3	6	44
16	GARA	904	574	964	332	316	72	221	210	102	8	3	332
17	VAMARAVILLI	643	575	881	656	270	95	440	500	15	1	10	81
18	CALINGAPATNAM	1995	1182	1267	452	102	50	319	304	33	28	30	128
19	TONANGI	571	168	1088	512	65	12	212	477	12	28	-	45
20	KORLAM	542	264	690	372	142	21	151	325	13	9	3	144
21	KORNI	446	276	500	260	228	35	171	98	21	2	-	180
22	TULUGU	303	134	524	401	156	67	265	306	2	1	2	50
23	JAFARABAD	98	33	253	4	236	-	3	4	-	1	-	200
24	VADADA	555	244	923	641	240	131	493	484	12	8	-	8
25	RAMACHANDRAPURAM	500	205	723	282	145	28	354	215	32	32	-	156
	TOTAL	13346	6715	19641	9877	5515	1712	6287	6942	591	210	175	3918

(Source: Data collected from Mandal Revenue Office)

Table 3.5: Details of Agricultural Land Holdings(in 1991)

.NO	NAME OF THE VILLAGE	UPTO 1 HECTARE TOTAL	1.0 TO 2.0 HECTARES TOTAL	MORE THAN 2.0 HECTARES TOTAL
1	AMPOLU	2906	165	149
2	VATSAVALASA	350	51	15
3	DEEPAVALI	236	22	4
4	GONTI	250	33	16
5	SREEKURMAM	2430	209	275
6	NIZAMBAD	293	35	28
7	SATIVADA	217	42	45
8	KOTTURU SAIRIGAM	271	44	41
9	RAGHAVAPURAM	76	13	6
10	FAKIRUTEKYA	4	1	2
11	SEETARAMPURAM	INHABITABLE VILLAGE		
12	AMBALLAVALASA	163	31	25
13	BOORAVELLI	297	32	19
14	SALIHUNDAM	489	63	65
15	JALLUVALASA	86	17	21
16	GARA	448	75	54
17	VAMARAVILLI	364	58	66
18	TONANGI	285	56	55
19	CALINGAPATNAM	394	77	66
20	KORLAM	316	50	60
21	KORNI	316	52	40
22	TULUGU	311	39	23
23	JAFARABAD	358	35	22
24	VADADA	402	151	81
25	RAMACHANDRAPURAM	404	39	40
	TOTAL	11666	1390	1218

(Source: Data collected from Mandal Revenue Office)

Table 3.6: Facilities Available in the Villages(in 1991)

S.NO.	NAME OF THE VILLAGE	CODE AS IN 1981 CENSUS	POLICE STATION	POLICE OUTPOST	BUS STOP RTC	BUS STOP PRIVATE	POST OFFICE	TELEGRAPH OFFICE	PRIMARY SCHOOL	UPPER PRIMARY	HIGH SCHOOL	COLLEGES
1	AMPOLU	33	NO	NO	NO	YES	YES	YES	YES	NO	YES	NO
2	VATSAVALASA	47	NO	NO	YES	N0	YES	NO	YES	NO	NO	NO
3	DEEPAVALI	56	NO	NO	NO	YES	NO	NO	YES	NO	NO	NO
4	GONTI	57	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO
5	SREEKURMAM	58	NO	NO	YES	YES	YES	YES	YES	NO	YES	YES
6	NIZAMBAD	49	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
7	KOTTURU SAIRIGAM	50	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
8	RAGHAVAPURAM	51	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO
9	FAKIRUTEKYA	52	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
10	SATIVADA	35	NO	NO	YES	NO	YES	NO	YES	YES	NO	NO
11	SEETARAMPURAM	34	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
12	AMBALLAVALASA	36	NO	NO	YES	YES	NO	NO	YES	NO	NO	NO
13	BOORAVELLI	37	NO	NO	YES	YES	YES	NO	YES	NO	NO	NO
14	SALIHUNDAM	38	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO
15	JALLUVALASA	39	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO
16	GARA	40	YES	NO	YES	YES	YES	YES	YES	NO	YES	NO
17	VAMARAVILLI	41	NO	NO	YES	YES	YES	NO	YES	YES	YES	NO
18	CALINGAPATNAM	43	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES
19	TONANGI	42	NO	NO	NO	NO	YES	NO	YES	NO	NO	NO
20	KORLAM	44	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO
21	KORNI	45	NO	NO	YES	NO	NO	NO	YES	NO	YES	NO
22	TULUGU	46	NO	NO	YES	NO	YES	NO	YES	NO	NO	NO
23	JAFARABAD	48	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO
24	VADADA	55	NO	NO	NO	YES	YES	NO	YES	NO	NO	NO
25	RAMACHANDRAPURAM	53	NO	NO	YES	YES	NO	NO	YES	NO	NO	NO
	TOTAL		1	0	16	12	13	4	21	3	6	1

(Source: Data collected from Mandal Revenue Office)

S.NO.	NAME OF THE VILLAGE	PHC	GOVT. HOSPITAL	VILLAGE HEALTH CENTER			MARKET	MARKET YARD	BANKS		AGRICULTURAL EXT CENTERS	VETERINARY CENTERS
				ALLOPATI	OTHERS	ALLOPATI(PVT)			COOPERATIVE	COMMERCIAL		
1	AMPOLU	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	YES
2	VATSAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3	DEEPAVALI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
4	GONTI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
5	SREEKURMAM	YES	NO	NO	NO	YES	NO	NO	NO	YES	YES	YES
6	NIZAMBAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7	SATIVADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
8	KOTTURU SAIRIGAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
9	RAGHAVAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
10	FAKIRUTEKYA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
11	SEETARAMPURAM			INHABITABLE VILLAGE								
12	AMBALLAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
13	BOORAVELLI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
14	SALIHUNDAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
15	JALLUVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
16	GARA	YES	NO	NO	NO	YES	YES	NO	NO	YES	YES	YES
17	VAMARAVILLI	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES
18	TONANGI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
19	CALINGAPATNAM	NO	NO	YES	NO	YES	NO	NO	NO	YES	NO	YES
20	KORLAM	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO
21	KORNI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
22	TULUGU	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
23	JAFARABAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
24	VADADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
25	RAMACHANDRAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	TOTAL	2	0	1	1	5	1	0	0	3	3	6

(Source: Data collected from Mandal Revenue Office)

Contd...

Table 3.7: Details of Population(1991-1981)

S.NO.	NAME OF THE VILLAGE	CODE NO OF 1991 CENSUS	AREA IN SQ. KM.	NO OF HOUSES	NO OF FAMILIES	TOTAL POPULATION			SCHEDULED CASTE		SCHEDULED TRIBE	
						TOTAL	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	33	23.37	342	333	1458	769	689	43	31	-4	-7
2	VATSAVALASA	47	7.94	144	144	568	296	272	-	-	-	-
3	DEEPAVALI	56	1.41	11	11	171	91	80	-1	-1	-	-
4	GONTI	57	2.22	36	35	92	47	45	12	9	-	-
5	SREEKURMAM	58	36.14	658	694	2511	1349	1162	228	186	-	-2
6	NIZAMBAD	49	2.62	40	41	304	156	148	55	57	-	-
7	SATIVADA	51	3.19	73	74	294	147	147	30	6	-	-
8	KOTTURU SAIRIGAM	52	0.43	14	13	63	32	31	-	-	-	-
9	RAGHAVAPURAM	35	0.49	1	1	1	-1	2	-	-	-	-
10	FAKIRUTEKYA	50	3.86	72	71	289	147	142	60	50	-	-
11	SEETARAMPURAM	34	0.36									
12	AMBALLAVALASA	36	3.19	48	48	114	53	61	2	-1	-	-
13	BOORAVELLI	37	3.04	98	87	279	147	132	30	36	-	-
14	SALIHUNDAM	38	7.44	224	206	687	304	383	141	140	10	18
15	JALLUVALASA	39	0.68	58	41	68	28	40	2	10	-	-
16	GARA	40	5.34	240	236	650	343	307	13	51	-	1
17	VAMARAVILLI	41	10.8	72	43	354	17	337	-14	38	3	13
18	TONANGI	42	6.58	184	165	888	496	392	26	15	-	-
19	CALINGAPATNAM	43	7.56	228	209	839	394	445	2	2	-	-
20	KORLAM	44	4.97	100	92	456	290	166	10	11	-	-
21	KORNI	45	2.95	87	82	220	84	136	-2	-	-	-
22	TULUGU	46	5.16	75	71	288	137	151	-5	-4	-	-
23	JAFARABAD	48	3.86	9	7	55	16	39	-	-	-	-
24	VADADA	55	9.98	170	166	570	291	279	18	16	3	7
25	RAMACHANDRAPURA	53	3.03	167	160	590	329	261	13	16	9	9
	TOTAL		156.61	3151	3030	11809	5962	5847	663	668	21	39
	% Change			26.9	25.4	20.77	21.21	20.33	44.94	48.4	72	134.48

S.NO.	NAME OF THE VILLAGE	PHC	GOVT. HOSPITAL	VILLAGE HEALTH CENTER			MARKET	MARKET YARD	BANKS		AGRICULTURAL EXT CENTERS	VETERINARY CENTERS
				ALLOPATI	OTHERS	ALLOPATI(PVT)			COOPERATIVE	COMMERCIAL		
1	AMPOLU	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES	YES
2	VATSAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
3	DEEPAVALI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
4	GONTI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
5	SREEKURMAM	YES	NO	NO	NO	YES	NO	NO	NO	YES	YES	YES
6	NIZAMBAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
7	SATIVADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
8	KOTTURU SAIRIGAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
9	RAGHAVAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
10	FAKIRUTEKYA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
11	SEETARAMPURAM			INHABITABLE VILLAGE								
12	AMBALLAVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
13	BOORAVELLI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
14	SALIHUNDAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
15	JALLUVALASA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
16	GARA	YES	NO	NO	NO	YES	YES	NO	NO	YES	YES	YES
17	VAMARAVILLI	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	YES
18	TONANGI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
19	CALINGAPATNAM	NO	NO	YES	NO	YES	NO	NO	NO	YES	NO	YES
20	KORLAM	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO
21	KORNI	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
22	TULUGU	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
23	JAFARABAD	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
24	VADADA	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
25	RAMACHANDRAPURAM	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
	TOTAL	2	0	1	1	5	1	0	0	3	3	6

(Source: Data collected from Mandal Revenue Office)

Contd...

AGRICULTURAL CREDIT	FERTILIZER	PDS	ELECTRIFIED	VILLAGES WITH	GUEST HOUSE/	WEAKER SECTION'S HOUSING SCHEME	
COOPERATIVES	CENTERS		VILLAGES	PUCCA ROAD	INSPECTION BUN.	LAND DISTRIBUTED IN ACRE	HOUSES CONSTRUCTED
YES	YES	YES	YES	YES	NO	26.95	397
NO	NO	YES	YES	YES	NO	2.5	60
YES	NO	NO	YES	YES	NO	6.15	143
NO	NO	YES	YES	YES	NO	4.12	64
YES	YES	YES	YES	YES	NO	21.93	569
NO	NO	NO	YES	YES	NO	4.03	81
YES	NO	YES	YES	YES	NO	2.89	77
NO	NO	YES	YES	YES	NO	4.73	92
NO	NO	NO	YES	NO	NO	NO	0
NO	NO	NO	YES	YES	NO	0.52	21
NO	NO	YES	YES	YES	NO	NO	0
YES	NO	YES	YES	YES	NO	4.38	94
YES	NO	YES	YES	YES	NO	14.35	359
NO	NO	NO	YES	YES	NO	NO	0
YES	YES	YES	YES	YES	NO	5.05	126
NO	NO	YES	YES	YES	NO	7.56	146
NO	NO	YES	YES	NO	NO	9.02	346
YES	YES	YES	YES	YES	YES	16.06	384
NO	NO	YES	YES	YES	NO	5.775	110
YES	NO	YES	YES	YES	NO	2.66	56
YES	NO	YES	YES	YES	NO	22	391
NO	NO	NO	YES	NO	NO	2.76	60
YES	NO	YES	YES	YES	NO	7.36	121
NO	YES	YES	YES	YES	NO	14.68	287
11	5	18	24	21	1	185.475	3984

Table 3.7: Details of Population(1991-1981)

S.NO.	NAME OF THE VILLAGE	CODE NO OF 1991 CENSUS	AREA IN SQ. KM.	NO OF HOUSES	NO OF FAMILIES	TOTAL POPULATION			SCHEDULED CASTE		SCHEDULED TRIBE	
						TOTAL	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	33	23.37	342	333	1458	769	689	43	31	-4	-7
2	VATSAVALASA	47	7.94	144	144	568	296	272	-	-	-	-
3	DEEPAVALI	56	1.41	11	11	171	91	80	-1	-1	-	-
4	GONTI	57	2.22	36	35	92	47	45	12	9	-	-
5	SREEKURMAM	58	36.14	658	694	2511	1349	1162	228	186	-	-2
6	NIZAMBAD	49	2.62	40	41	304	156	148	55	57	-	-
7	SATIVADA	51	3.19	73	74	294	147	147	30	6	-	-
8	KOTTURU SAIRIGAM	52	0.43	14	13	63	32	31	-	-	-	-
9	RAGHAVAPURAM	35	0.49	1	1	1	-1	2	-	-	-	-
10	FAKIRUTEKYA	50	3.86	72	71	289	147	142	60	50	-	-
11	SEETARAMPURAM	34	0.36									
12	AMBALLAVALASA	36	3.19	48	48	114	53	61	2	-1	-	-
13	BOORAVELLI	37	3.04	98	87	279	147	132	30	36	-	-
14	SALIHUNDAM	38	7.44	224	206	687	304	383	141	140	10	18
15	JALLUVALASA	39	0.68	58	41	68	28	40	2	10	-	-
16	GARA	40	5.34	240	236	650	343	307	13	51	-	1
17	VAMARAVILLI	41	10.8	72	43	354	17	337	-14	38	3	13
18	TONANGI	42	6.58	184	165	888	496	392	26	15	-	-
19	CALINGAPATNAM	43	7.56	228	209	839	394	445	2	2	-	-
20	KORLAM	44	4.97	100	92	456	290	166	10	11	-	-
21	KORNI	45	2.95	87	82	220	84	136	-2	-	-	-
22	TULUGU	46	5.16	75	71	288	137	151	-5	-4	-	-
23	JAFARABAD	48	3.86	9	7	55	16	39	-	-	-	-
24	VADADA	55	9.98	170	166	570	291	279	18	16	3	7
25	RAMACHANDRAPURA	53	3.03	167	160	590	329	261	13	16	9	9
	TOTAL		156.61	3151	3030	11809	5962	5847	663	668	21	39
	% Change			26.9	25.4	20.77	21.21	20.33	44.94	48.4	72	134.48

S.NO.	NAME OF	NO OF LITERATES		TOTAL WORKERS		CULTIVATORS		AGRICULTURAL WORKERS		COTTAGE INDUSTRIES		TEMPORARY WORKERS	
	THE VILLAGE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE
1	AMPOLU	586	256	231	442	-343	47	355	271	0	0	-312	806
2	VATSAVALASA	247	87	153	231	-54	-48	128	291	0	0	-365	0
3	DEEPAVALI	74	35	60	86	-30	-4	-29	74	0	0	-37	83
4	GONTI	49	39	704	-35	-72	-42	57	6	0	0	-13	64
5	SREEKURMAM	891	536	732	467	-47	52	200	241	0	0	-989	871
6	NIZAMBAD	77	16	54	61	13	-12	14	61	0	0	-40	193
7	KOTTURU SAIRIGAM	149	56	51	-135	-8	-103	-11	-46	0	0	-70	119
8	RAGHAVAPURAM	1	4	5	-20	4	-12	1	-7	0	0	-4	3
9	FAKIRUTEKYA	-1	0	0	1	1	1	1	0	0	0	0	-1
10	SATIVADA	148	73	87	-55	6	-49	73	-5	0	0	-86	87
11	SEETARAMPURAM	0	0	0	0	0	0	0	0	0	0	0	0
12	AMBALLAVALASA	36	28	16	32	-41	-6	69	41	0	0	-21	-5
13	BOORAVELLI	97	49	66	161	19	47	40	118	0	0	-79	-16
14	SALIHUNDAM	286	255	55	60	-2	-15	27	24	0	0	-208	72
15	JALLUVALASA	-10	33	18	22	-3	0	15	14	0	0	-6	44
16	GARA	398	353	132	-119	5	4	19	-129	0	0	-214	296
17	VAMARAVILLI	83	286	8	58	44	-25	35	127	0	0	-217	-23
18	CALINGAPATNAM	495	433	232	-36	-1	2	89	26	0	0	-639	-6
19	TONANGI	148	94	147	162	-31	3	41	268	0	0	-662	-59
20	KORLAM	231	125	196	50	1	5	3	65	0	0	-189	107
21	KORNI	159	115	102	122	25	6	29	-5	0	0	-32	176
22	TULUGU	144	68	105	211	-28	4	142	189	0	0	-108	41
23	JAFARABAD	1	19	-41	-259	5	-207	-38	-50	0	0	-22	199
24	VADADA	120	88	82	152	-112	-46	179	204	0	0	-163	-16
25	RAMACHANDRAPURAM	276	123	121	-74	-195	-146	262	82	0	0	-138	139
	TOTAL	4685	3171	3316	1585	-844	-544	1701	1860	0	0	-4614	3174
	% Change	54.09	89.47	20.31	19.11	-13.3	-24.1	37.09	36.59	-	-	-96.34	426.31

Table 3.8: Details of Agricultural Land Holdings(1991-1981)				
S.NO.	NAME OF THE VILLAGE	UPTO 1 HECTARE TOTAL NO'S	1.0 TO 2.0 HECTARES TOTAL NO'S	MORE THAN 2.0 HECTARES TOTAL NO'S
1	AMPOLU	1433	-76	-98
2	VATSAVALASA	108	-15	-44
3	DEEPAVALI	107	4	-3
4	GONTI	162	4	-8
5	SREEKURMAM	1325	-143	-73
6	NIZAMBAD	190	8	8
7	SATIVADA	114	20	13
8	KOTTURU SAIRIGAM	161	7	10
9	RAGHAVAPURAM	59	0	-2
10	FAKIRUTEKYA	4	-2	1
11	SEETARAMPURAM			
12	AMBALLAVALASA	-1	5	3
13	BOORAVELLI	146	3	0
14	SALIHUNDAM	231	17	-27
15	JALLUVALASA	67	2	2
16	GARA	-164	17	7
17	VAMARAVILLI	42	-3	-8
18	TONANGI	53	3	23
19	CALINGAPATNAM	-37	-9	16
20	KORLAM	138	-26	4
21	KORNI	102	-10	17
22	TULUGU	90	-4	-19
23	JAFARABAD	235	7	-19
24	VADADA	-2	46	-68
25	RAMACHANDRAPURAM	237	19	5
	TOTAL	4800	-126	-260
	% Change	69.9	-8.31	-17.59

Table 3.8: Details of Agricultural Land Holdings(1991-1981)				
S.NO.	NAME OF THE VILLAGE	UPTO 1 HECTARE TOTAL NO'S	1.0 TO 2.0 HECTARES TOTAL NO'S	MORE THAN 2.0 HECTARES TOTAL NO'S
1	AMPOLU	1433	-76	-98
2	VATSAVALASA	108	-15	-44
3	DEEPAVALI	107	4	-3
4	GONTI	162	4	-8
5	SREEKURMAM	1325	-143	-73
6	NIZAMBAD	190	8	8
7	SATIVADA	114	20	13
8	KOTTURU SAIRIGAM	161	7	10
9	RAGHAVAPURAM	59	0	-2
10	FAKIRUTEKYA	4	-2	1
11	SEETARAMPURAM			
12	AMBALLAVALASA	-1	5	3
13	BOORAVELLI	146	3	0
14	SALIHUNDAM	231	17	-27
15	JALLUVALASA	67	2	2
16	GARA	-164	17	7
17	VAMARAVILLI	42	-3	-8
18	TONANGI	53	3	23
19	CALINGAPATNAM	-37	-9	16
20	KORLAM	138	-26	4
21	KORNI	102	-10	17
22	TULUGU	90	-4	-19
23	JAFARABAD	235	7	-19
24	VADADA	-2	46	-68
25	RAMACHANDRAPURAM	237	19	5
	TOTAL	4800	-126	-260
	% Change	69.9	-8.31	-17.59

Table 3.9: Facilities Available in theMandal(1991-1981)

S.NO.	YEAR	POLICE STATION	POLICE OUTPOST	BUS STOP RTC	BUS STOP PRIVATE	POST OFFICE	TELEGRAPH OFFICE	PRIMARY SCHOOL	UPPER PRIMARY	HIGH SCHOOL	COLLEGES	
1	TOTAL(1991)	1	0	16	12	13	4	21	3	6	1	
2	TOTAL(1981)	0	0	4	10	13	4	21	3	3	1	
3	DIFFERENCE	1	0	12	2	0	0	0	0	3	0	
	% Change	100	0	300	20	0	0	0	0	100	0	

S.NO.	YEAR	PHC	GOVT. HOSPITAL	VILLAGE HEALTH CENTER ALLOPATI	VILLAGE HEALTH CENTER OTHERS	ALLOPATI(PVT)	MARKET	MARKET YARD	BANKS COOPERATIVE	BANKS COMMERCIAL	AGRI EXT CENTERS	VETERINARY CENTERS
1	TOTAL(1991)	2	0	1	1	5	1	0	0	3	3	6
2	TOTAL(1981)	1	0	1	1	5	1	0	0	3	0	6
3	DIFFERENCE	1	0	0	0	0	0	0	0	0	3	0
	% Change	100	0	0	0	0	0	0	0	0	300	0

Contd...

AGRICULTURE	FERTILIZER	PDS	ELECTRIFIED	VILL WITH	GUEST	WEAKER SECTION HOUSING SCHEME	
COOPERATIVES	CENTERS		VILLAGES	PUCCA ROAD	HOUSE	LAND DIST IN ACRES	HOUSES CONSTRUCTED
11	5	18	24	21	1	185.475	3984
11	1	18	24	19	1	154.64	2649
0	4	0	0	2	0	30.835	1335
0	400	0	0	10.52	0	19.93	12.64

Table no.'s 3.7 – 3.9 explains the variation between the years 1981 and 1991. The following inferences are drawn from the table. They are:

1. Total number of households in the system has been increased at an alarming rate i.e., 27 percent.
2. Total number of families increased to 25.1 percent, which is really quite higher in number.
3. Total number of population increased to 20.77 percent (Fig. 3.1) of which the percentage increase in male and female is 21.27 percent and 29.33 percent respectively.
4. A considerable increase in SC/ST population is observed. The SC population has increased to 47 percent and the ST has increased to 103 percent (Fig. 3.1).
5. Literacy has increased quite higher rate. The female literacy has reached the peak compared with the male population i.e., 89.47 percent female and 54.09 percent male.
6. The male and female working population has increased to 20.31 and 19.11 percent respectively.
7. There is a considerable fall or slip in among the cultivators. It has been observed in negative trend. It is very distressing to note that among the male and female cultivators the slip lead to 13.27 percent and 24.11 percent respectively (Fig. 3.2).
8. There is a considerable increase in agricultural workers i.e., 37.09 percent and 36.59 percent in female population.
9. In temporary workers about 100 percent negative trend has been observed in male population, and an alarming rate of increase is observed among the female population.

10. In size of land holding, it has been observed that there is a tremendous amount of shift from large farm to small and marginal farm. It has been observed that decline of about 20 percent of households in large farm, 8 percent in small farm where as the larger number is increased to marginal farm category i.e., 70 percent (Fig.3.3).
11. Certain facilities have been increased considerably (Fig.3.4). They are infrastructure facilities, police stations (100 percent), high schools (100 percent), bus stops (300 percent), PHC's (100 percent), agricultural extension centers (300 percent), fertilizer centers (400 percent), village with pucca roads (10.52 percent), electric connections (217 percent) and pucca road length (71 percent).
12. Land distribution for house construction is increased by 20 percent and construction of houses increased to about 13 percent.
13. People engaged in industrial activities have been increased to 14 percent.
14. There is a little slip in availability of bovine population is observed i.e., 13.39 percent (Fig. 3.5).
15. The decrease in the area of ponds is 58.03 (Fig.3.5).

Fig. 3.1: Change in Population (1981-91)

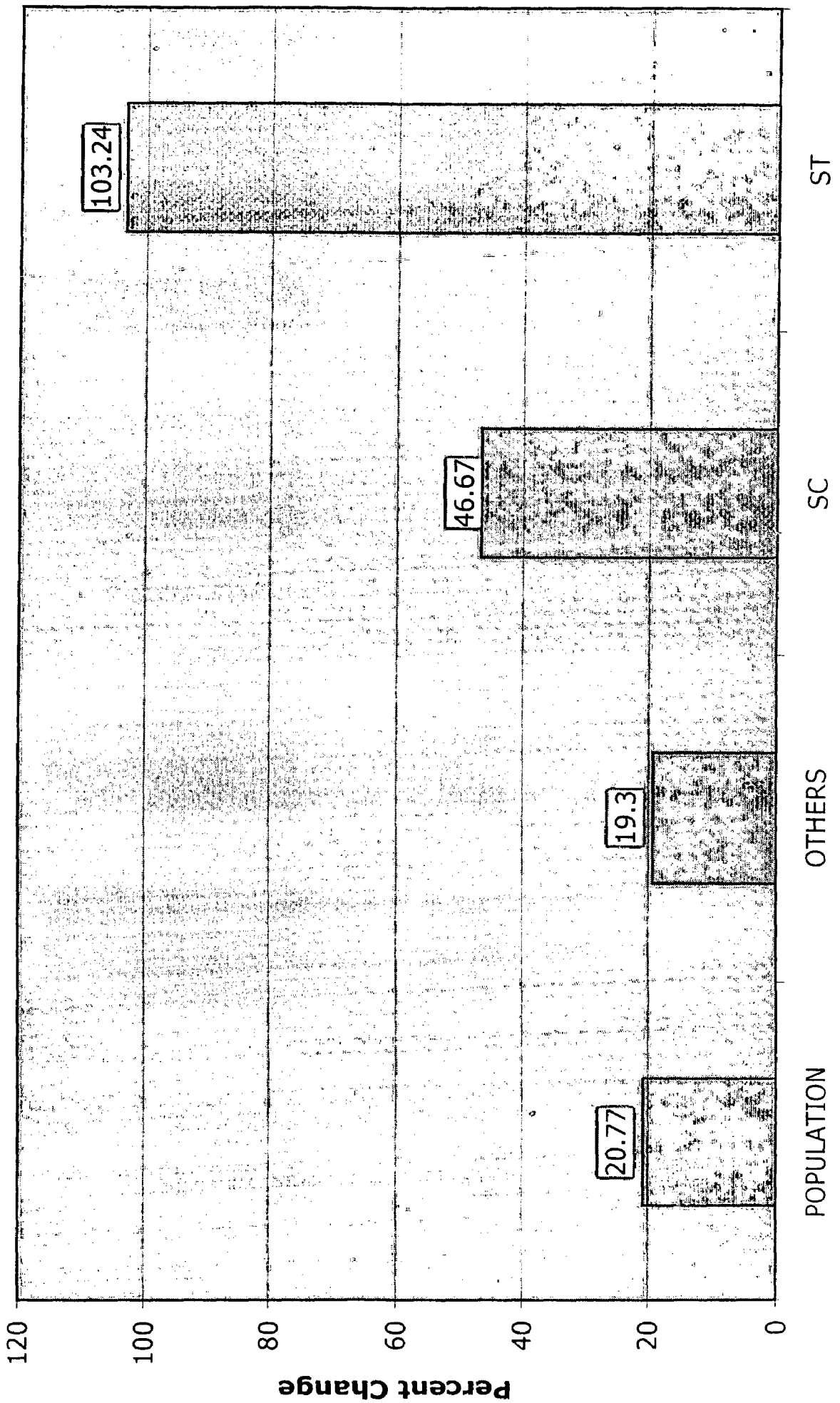


Fig. 3.2: **Change in Different Types of Workers**

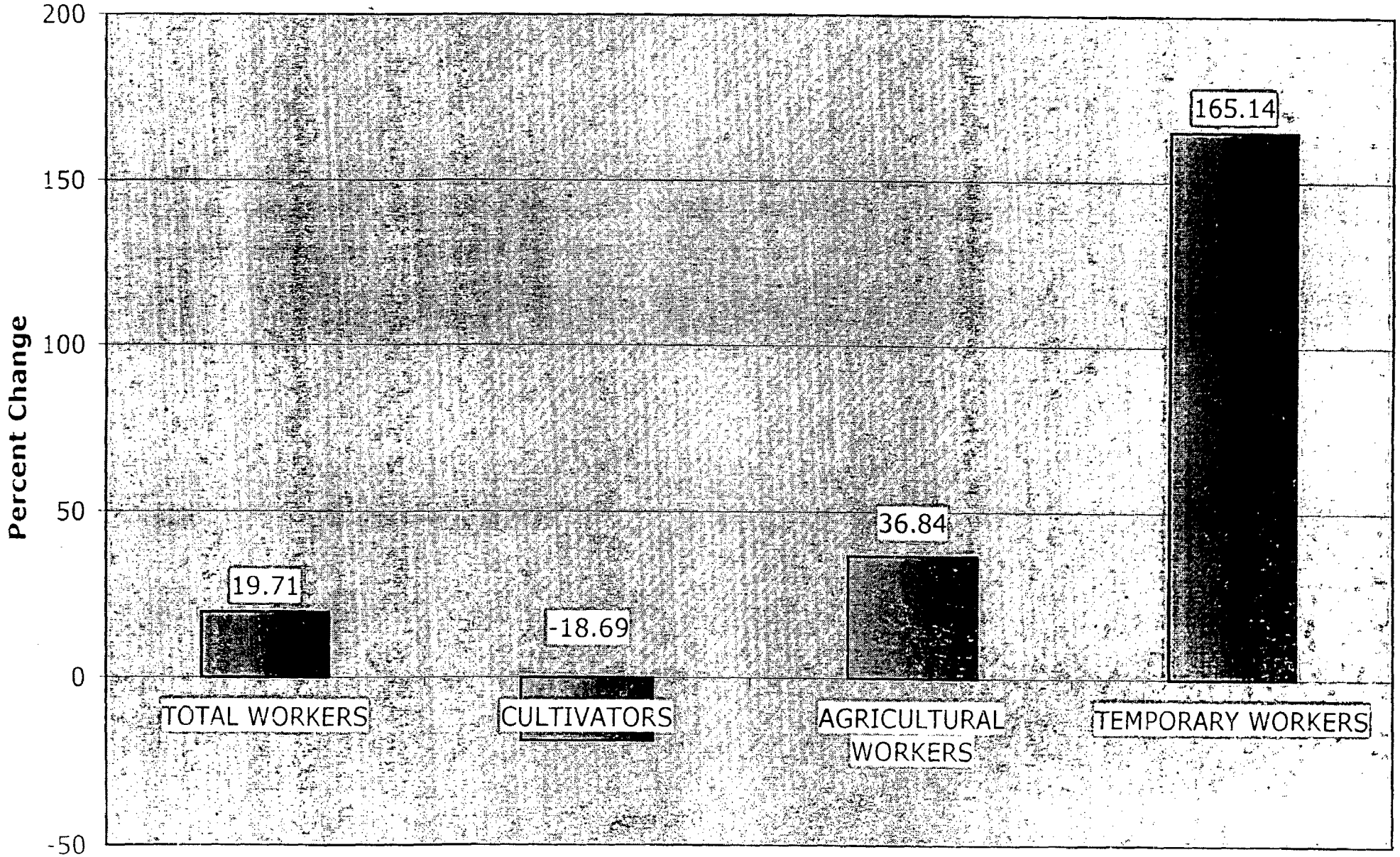


Fig. 3.3: **Change in Agricultural Land Holdings(1981-91)**

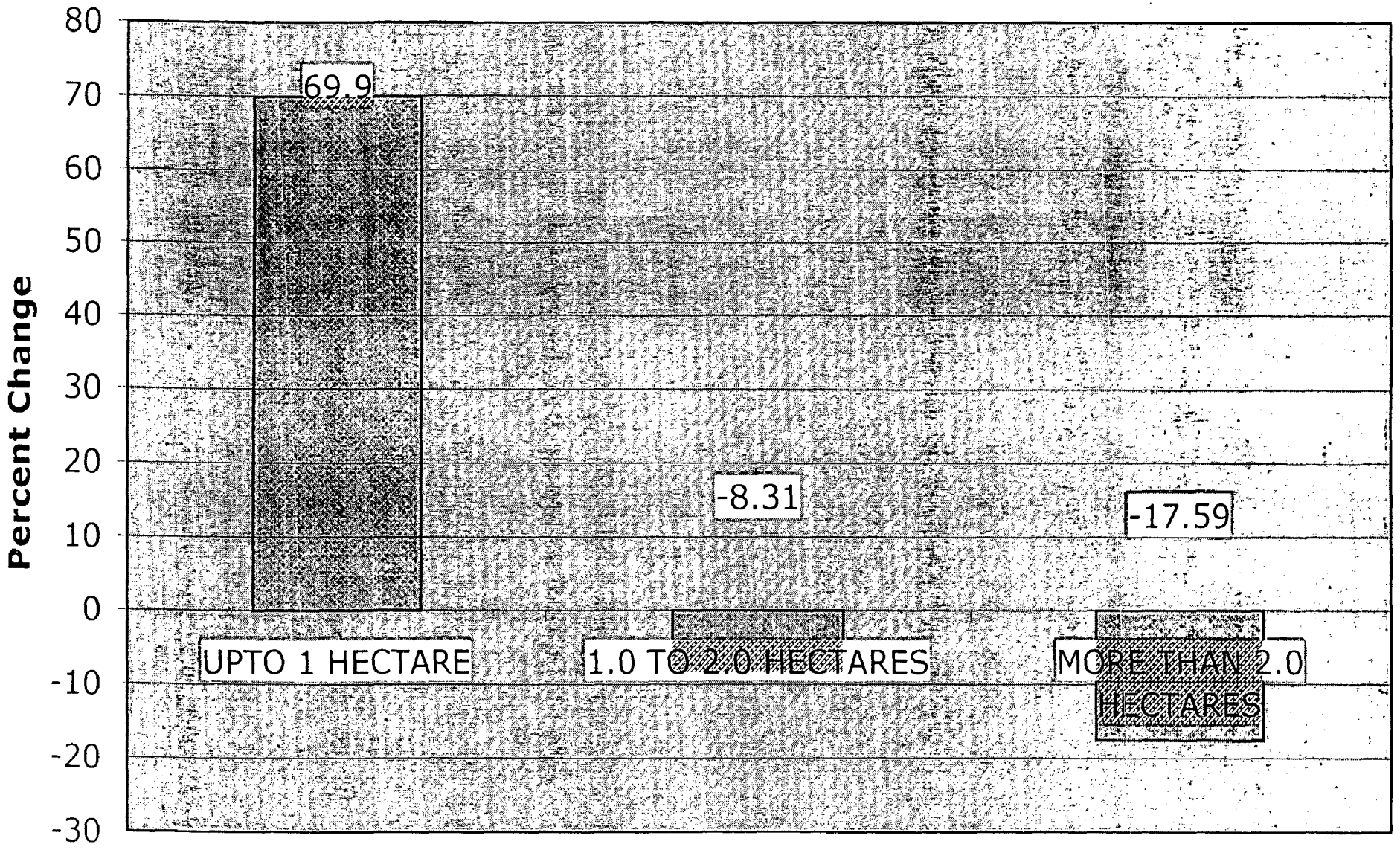


Fig. 3.3: **Change in Agricultural Land Holdings(1981-91)**

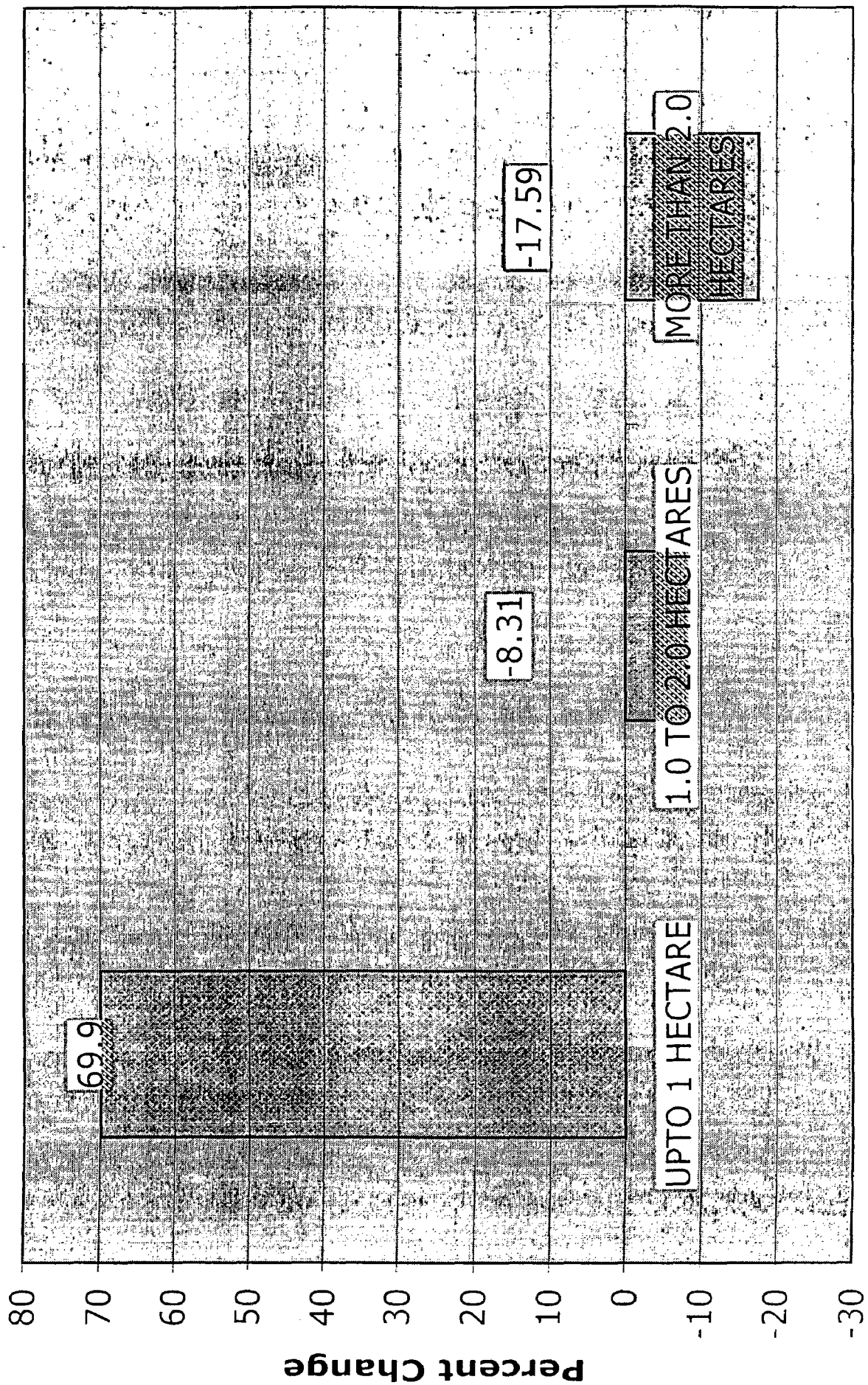


Fig.3.4: **Change in Facilities**

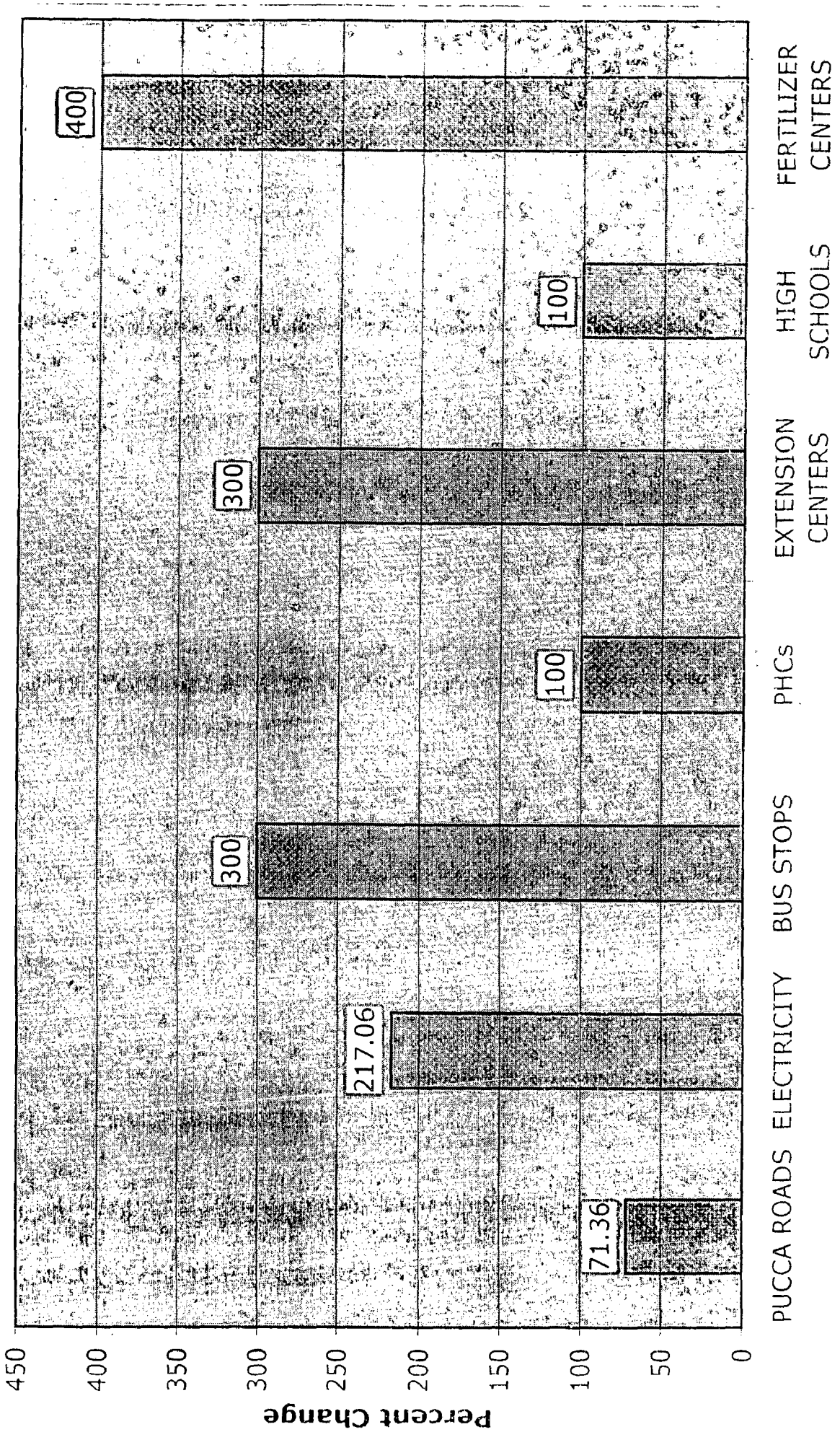
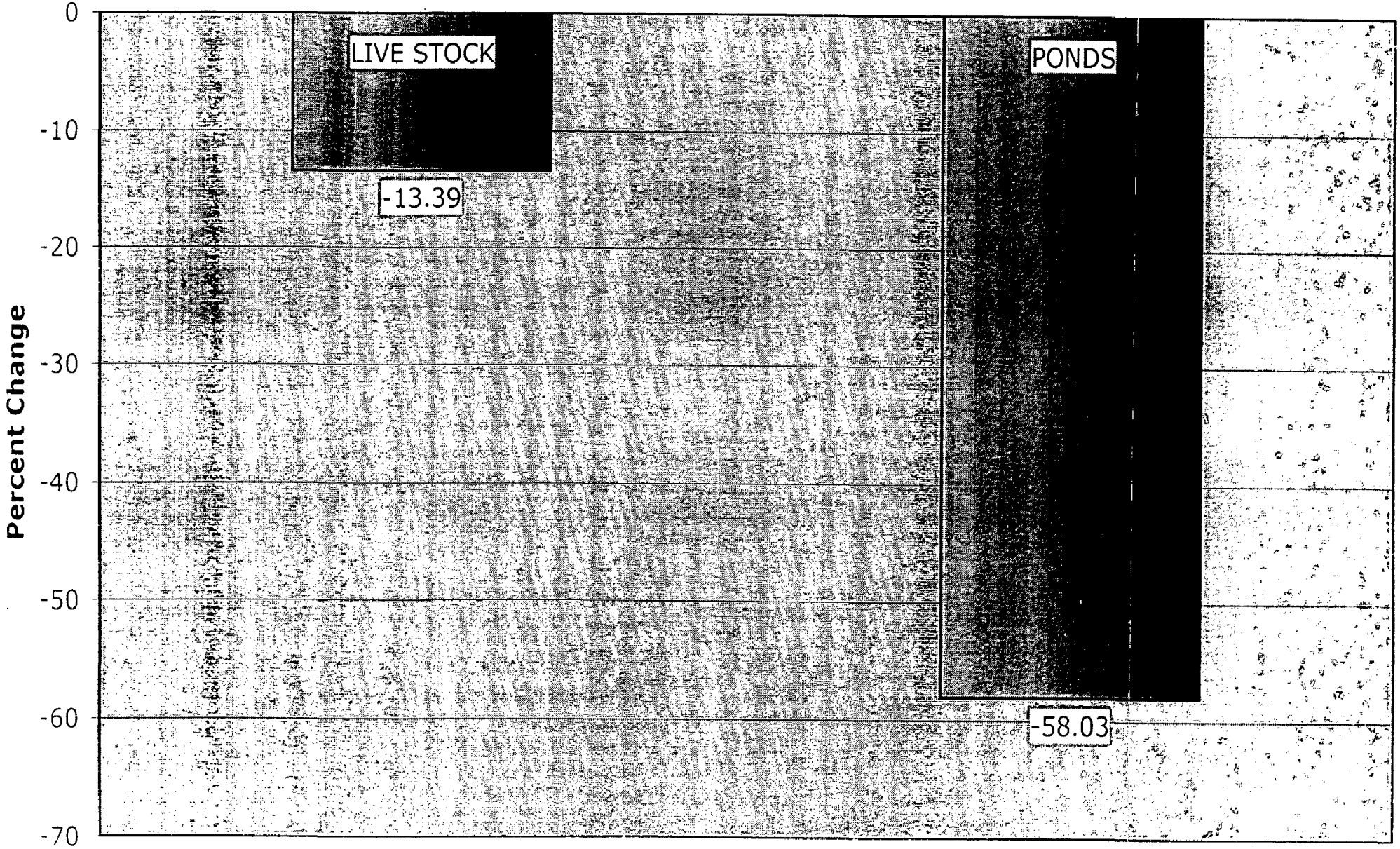


Fig. 3.5: **Change in Others**



The salient features of these implemented programs in the Mandal will be discussed in detail. It is very important to know how all these programs are implemented in the study area, and how the beneficiaries are selected, and the problems at the implementation stage even in selection of beneficiaries. It is also necessary to have a look at the finances available and people's participation.

Another important feature to be understood is the sustainability of the program and their effects in the system pertaining to natural resources, surrounding environment and the people. Some of the important programs are discussed below.

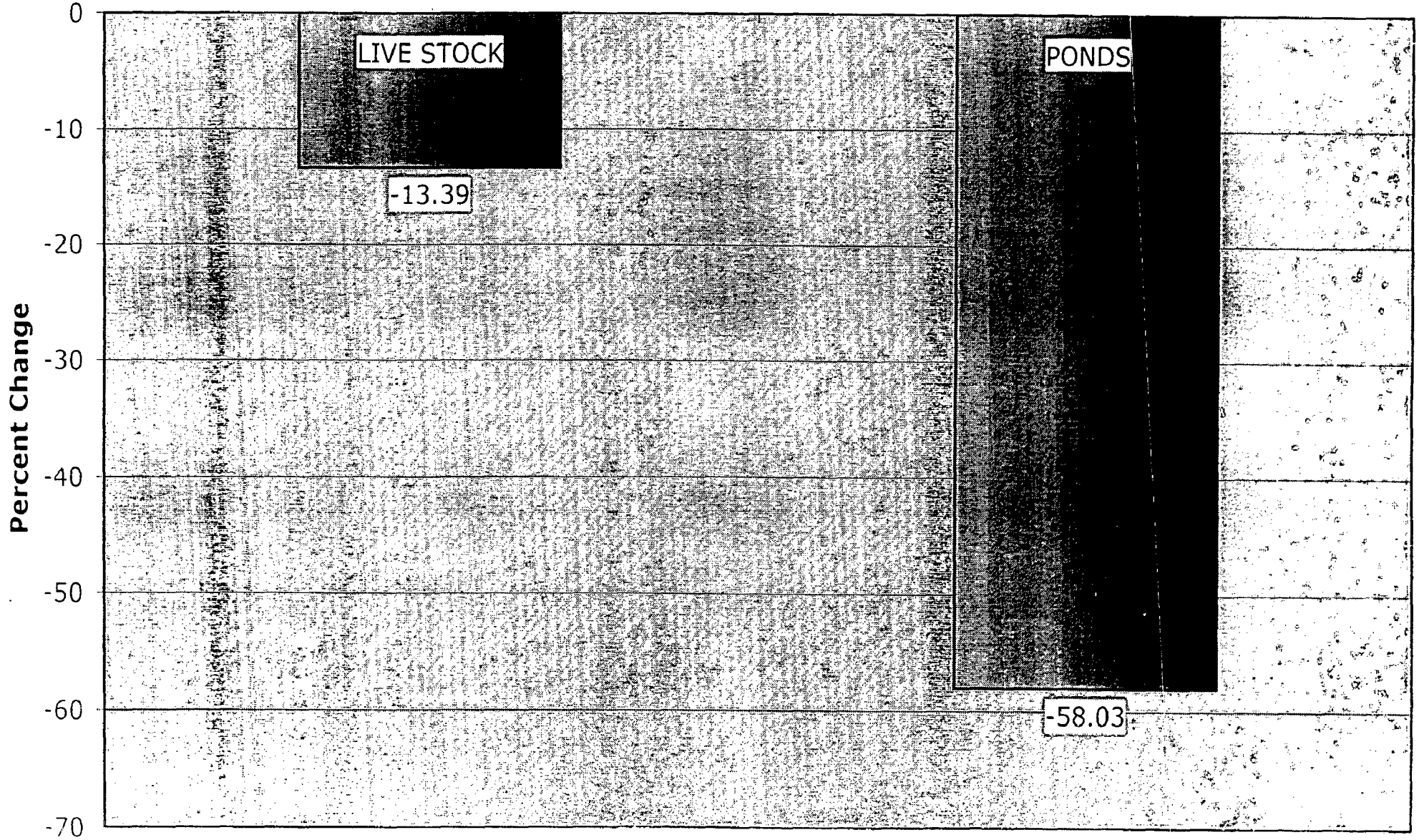
4.2 Development of Women and Children in the Rural Areas

Most of the developmental programs for rural women focus on subsidiary occupations, which generate regular income through gainful employment. One such program is (DWCRA) i.e., Development of Women and Children in Rural Areas. During the IX plan almost all state governments are implementing DWCRA activities in remote areas. It has been widely recognized that unless the potentialities of women are properly developed no social transformation and economic development is possible. The objectives of the Development of Women and Children in Rural Areas scheme is to improve economic health, education and social status of rural women by providing them assistance and generating employment opportunities to earn their livelihood.

- Specific Objectives Of Development Of Women And Children In Rural Areas:

1. Improving the existing economic activities of the rural women by generating employment opportunities and also to improve the quality of life of rural women and their children.

Fig. 3.5: **Change in Others**



Chapter 4

Analysis of the Rural Development Programs Implemented in the system

4.1 Introduction

Ever since the planned development era started, till now the governments (both central and the state) have introduced many programs for rural development. Having been introduced many programs for more than 50 years, besides a little development in some areas; the situation is same in major parts of rural India. It has been understood that there are some lacunae in planning, implementation and even evaluation. Hence, it is imperative to have a well-prepared scientific development plan to implement rural development programs in the system.

The central and state governments introduced different types of development programs in the study area, and are under operation. Programs that deal with the overall development of the area include Drought Prone Area Program (DPAP) under which watershed development program has been taking place along with the Modified Area Development Approach. Programs, which are mainly concerned with the development of the target groups are Integrated Rural Development Program (IRDP), Training Rural Youth for Self Employment (TRYSEM), Chief Minister's Employment program for Youth (CMEY), Special Plan Component for Scheduled Castes and Scheduled Tribes, etc. Programs that are meant for the development of individual sectors are Minimum Yield Guarantee Program (MYGP), Livestock Production Program (LPP), etc.

The salient features of these implemented programs in the Mandal will be discussed in detail. It is very important to know how all these programs are implemented in the study area, and how the beneficiaries are selected, and the problems at the implementation stage even in selection of beneficiaries. It is also necessary to have a look at the finances available and people's participation.

Another important feature to be understood is the sustainability of the program and their effects in the system pertaining to natural resources, surrounding environment and the people. Some of the important programs are discussed below.

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- Specific Objectives Of Development Of Women And Children In Rural Areas:

1. Improving the existing economic activities of the rural women by generating employment opportunities and also to improve the quality of life of rural women and their children.

2. Providing supportive services to enable the rural women to improve their economic conditions through their skills and locally available resources.
3. Providing suitable marketing facilities and empowering the rural women to take collective decisions in popularizing their finished products in the market.
4. Providing suitable training in productive skills for the Development Of Women And Children In Rural Areas beneficiaries.
5. Providing better care for the children of Development Of Women And Children In Rural Areas groups in health, nutrition and environment and education.

Implementation of the Development of women and children in rural areas (DWCRA) program is in full swing in the mandal. This program provides credit to the rural women self-help groups for improving their living and economic conditions. They started saving money (one rupee per day), which will be handy at critical times. Also, children of the families, who are members of Development of Women And Children in Rural Areas groups, are attending schools regularly. All those people who were interviewed told that the DWCRA groups are there in their villages. The positive sign is that all women who are involved in this program belong to only marginal and small farm categories with 74.19, 25.81 percent respectively. Still there is lot of potential to be tapped under this program. It is observed that some people are not aware of the program and it's benefits.

4.3 Drought Prone Area Program

The objective of this was to make the area progressively drought-proof and also to promote integrated development of the area by increasing production and employment. Perspective plan has been prepared for the

implementation of this program on the basis of identification of watersheds taking into account the number of villages, density of population, need for soil conservation measures, availability of forest area, etc. Different sectors of economy covered under this program are agriculture, animal husbandry, soil conservation, minor irrigation and afforestation. Up to 1980-81, apart from area-based schemes, various individual beneficiary-oriented schemes were also taken up under this program, now being implemented by the District Rural Development Agency (DRDA).

4.4 Integrated Rural Development Program

This program is an anti-poverty program meant for individual beneficiaries who are below the poverty line. The objective of this program is to provide them with gainful employment by creating productive assets and skills to raise their income level so that they cross the poverty line. For this purpose, subsidy is provided to the selected beneficiaries at different rates i.e., for small farmers (SF), rural artisans (RA) and scheduled castes 33.1/3 per cent; and for scheduled tribes 50 per cent. The remaining amount comes from the financial institutions in the form of loan and margin money.

The program is implemented at the block level and each year 600 families are to be identified and given a package of schemes. Out of the 600 families, 40 per cent should be from the scheduled castes and scheduled tribes. Various sectors, which have been included in IRDP in this district, are agriculture, soil conservation, animal husbandry, forestry, sericulture, fisheries, industries and minor irrigation. As envisaged, about 200 families have to be assisted under industries, services and business (ISB) sector. The program is implemented by formulating annual action plan for the block, which is done on the basis of choices of beneficiaries for schemes ascertained through a household survey.

The infrastructure required for implementation of the program comes mostly from other sectors and programs like DPAP. Under the program, 10 per cent of its annual outlay can be spent on specific infrastructures needed for program implementation. For 1981-82, Rs. 6 lakh were earmarked for each block for implementation of this program. In 1982-83, the allotment has been raised to Rs. 8 lakh. The annual allotment is shared on a 50:50 basis between the Center and the state.

4.5 Scheme for Training of Rural Youth for self-employment

The Training of Rural Youth for self-employment (TRYSEM) program is a national scheme, which started in 1979. Its main thrust is on equipping rural youth with the necessary skills and technology to enable them to be self-employed. Normally, persons between 18 and 35 years of age are selected under this scheme. Every year at least 40 youths in each block have to be trained under this program. The scheme has been integrated into Integrated Rural Development Program and the beneficiaries under this scheme are from the households below the poverty line. The selected beneficiaries are trained in different institutions or by individual trainers. Selected candidates are trained in poultry farming, dairy farming, carpentry sericulture, lathe works, tailoring repairing of plant protection equipment, oil engines and pumpsets, welding, etc. The duration of training ranges from one to nine months. During the training period, the trainee receives Rs. 100 per month as stipend and the training institutions are paid Rs. 50 per trainee per month. There is also a provision to give an amount of Rs. 25 per trainee per month for purchase of raw materials subject to a ceiling of Rs. 200 per trainee; per course. After the completion of training, the beneficiary has to take up self-employment for which he was

equipped during the training. For this purpose, subsidy is provided at the rate of 33.1/3 per cent of the unit cost. This subsidy is linked with bank loan.

4.6 National Rural Employment Program

This is a Central sector program under which foodgrains at fair prices as well as cash to meet part of the wages and cost of materials are released to state governments. It aims at creating employment opportunities in rural areas by taking up construction of community assets and strengthening of infrastructure facilities in the block. Ten per cent of the resources have been earmarked for works directly benefiting the scheduled castes and scheduled tribes like development of house sites, group housing, drinking water wells, irrigation wells, etc.

4.7 Livestock Production Program

This is a Government of India program operating since 1976-77 to facilitate livestock production program. Gara block has been selected for sheep rearing as it has potential for this activity. A sheep unit consisting of 20 ewes and one ram is supplied to the weaker sections of the society. For the purchase of sheep units, subsidy is given at the rate of 25 per cent for small farmers and 33.1/3 per cent for marginal farmers and agricultural labourers. An amount of Rs. 4,672 lakh had been included in the IRDP plans for the year 1981-82 towards subsidy for the beneficiaries of this program.

4.8 Community Development

Community development may be defined as a "process by which the efforts of the people themselves are combined with those of governmental authorities to improve the economic, social and cultural conditions of communities, to integrate these communities into the life of the nation, and to enable them to contribute fully to national progress".

The central objective of the Community Development Program (CDP) is to secure the total development of the material and human resources of rural areas and to develop local leadership and self-governing institutions. The basic idea is to raise the levels of living of rural people through a number of programs. This objective was to be attained by bringing about a rapid increase in food and agricultural production by strengthening programs of resource development such as minor irrigation and soil conservation, by improving the effectiveness of farm inputs supply systems, and by providing agricultural extension service to farmers.

4.9 National Extension Service

A new somewhat less ambitious scheme called the National Extension Service (NES) was evolved and launched in 1953. Whereas in the Community Development Program, intensive development was taken up in all fields, the National Extension Service scheme was designed to provide the essential basic staff and a small amount of funds with which the people could start the development work essentially on the basis of self-help. The National Extension Service blocks were subsequently converted into Community Development Program blocks. The pattern of the Community Development Program was further revised with effect from 1st April 1958. According to this pattern, the Community Development Program blocks had a life of ten years consisting of Stage I and Stage II of equal duration, the budget provision in Stage I being higher. Besides, a one-year pre-extension phase preceding Stage I, with attention exclusively devoted to agricultural development was introduced from April 1959.

4.10 Khadi And Village Industries

The work relating to Khadi and village industries is the responsibility of the Khadi and Village Industries Commission which is an important institution in the country engaged in the task of providing employment - both full time and part time to the rural poor. Khadi and Village Industries Commission has been transferred to the Ministry of Rural Reconstruction primarily because it is now the responsibility of the Ministry of Rural Reconstruction to promote opportunities for employment in rural areas. At present, the activities of the Commission are confined to setting up of tiny units engaged in the production of Khadi and 25 industries included in the schedule to the Khadi and Village Industries Commission Act. New industries are being added to it to widen the scope of village industries as much as possible. Most of the programs of the Commission are such as could be carried on in the homes by the artisans e.g. spinning and weaving of Khadi, manufacture of leather goods, grinding of cereals and pulses, palm products, etc. These units require very little capital investment as compared to the small or the organized sector and in relation to the employment opportunities, which these provide.

The programs of Khadi and Village Industries have been suffering from certain handicaps. The State Khadi and Village Industries Boards mostly implement these programs. While the Commission provides funds for the implementation of the programs to State Boards, the State Governments control the Boards. This has created some problems in a much as while some of the State Boards are active in implementing the programs there are quite a few others which are not making sufficient efforts in this direction. Similarly, there are problems of supply of raw materials as well as of marketing of the finished products manufactured by the artisans. The banks are also not as helpful as

they should have been to the poor artisans although the Commission has been providing loans to artisans engaged in their programs at 4% rate of interest, over and above 4%, is subsidized by the Government.

4.11 Hill Areas Development Program

It was recognized in the late sixties that the strategies of development adopted in the past had led to an uneven distribution of the benefits of development between geographical areas and also between socio-economic groups. In response to that realization, certain area-specific programs were initiated in the Fourth Plan. Two such programs --- the DPAP and the DDP -- have been reviewed. A third area-specific program that was launched as a central sector scheme in the Fourth Plan was the Hill Areas Development Program (HADP).

These three projects adopted the following programs for the economic development of these regions:

1. Intensive campaign by way of composite demonstrations of the new agricultural technology covering the use of improved seeds, fertilizers and pesticides together with multiple cropping;
2. Development of horticulture by way of establishing progeny orchards for the supply of seeds and plant material and rejuvenation of existing community lands;
3. Land development by way of terracing and other soil conservation measures;
4. Harnessing small streams and rivulets by way of installation of lift irrigation, pumpsets, construction of low dams to increase the irrigation potential of the project areas;
5. Introduction of upgraded dairy animals, poultry and sheep to increase production of milk, eggs and meat;

6. Starting processing industries both for agricultural and horticultural crops, together with marketing and cold storage facilities;
7. Construction of link roads;
8. Identification of growth centers around which the processing and marketing facilities can be effectively linked to the interior areas.

4.11. Appraisal of the Implemented Programs

The findings from the above programs are as follows:

a. People did not know complete details of the programs.
b. People are not repaying the loans taken from the banks.
c. The behaviour of the people is found to be irresponsible regarding program implementation.
d. Adoption of unsuitable technology for program implementation.
e. Implementation of the programs without any project planning.
f. Lack of training facilities.
g. Absence of key infrastructure facilities.
h. Improper fund utilization.
i. The identification of the beneficiaries is found to be improper.
j. Isolated approach of the administrative officials in program implementation.

Chapter 5

Assessing the Present Status of Development

5.1 Introduction

Assessment of the present status of development of the Mandal is another important aspect to be dealt in detail. It will be meaningless if one prepares any development plan without understanding the phase of development in the area. To assess the present status of development, all the important parameters of the system are identified, and are assessed in detail.

A household survey was conducted in the hamlets of the three revenue villages to assess the existing conditions of the study area. All the details were tabulated and the related tables are as follows:

The principal component considered for analysis is farm sizes. Altogether, there are four different sizes of farms, such as marginal, small, medium and large*. From the above-mentioned classification one can know the percentage of people confined in each and every class and their social and economic conditions. It gives an approximate picture of the agricultural methods followed by the different sections of the community, irrigation facilities available to them, output from agriculture, accessibility of the people to different facilities, etc. along with the group the people to be concentrated or considered for different development programs.

***Note:** Marginal Farmer: 0 to 2.5 acre Medium Farmer: 5.1 to 10.0 acre

Small Farmer: 2.6 to 5.0acre Large Farmer: 10.1 acre and above

5.2 Households

Households are studied very carefully in this present investigation according to their farm sizes. This gives clear insight about their socio and economic conditions, standard of livings, social status etc. Moreover, the size of farm also decide the function of various activities which include input and output in agricultural operations, spending for education, recreation and health activities. Having these points in mind, the available households are classified into four groups, such as, marginal, small, medium and larger farms and representative samples are selected from each farm category, and presented in table 5.1. The table depicts that the percentage of marginal and small farm categories are prominent in the study area.

The marginal farm category represents about 50 percent of the sample farms, and the number of households' availability is decreasing along with increase in size of farms, that is marginal, small, medium and large farms are 47.05 percent, 22.53 percent, 8.84 percent and 20.58 percent respectively. Since the study was conducted in three different villages, availability of households is analyzed by separate village wise to understand the farm size pattern of the villages. According to this analysis, two villages are having similar characteristics, and the other village has little different characteristics i.e., the size of farms is much higher in large farm category (Table 5.2). It is of interest, the investigator started to investigate the performance of the village, and has been found that the village is economically well off, more quantity of lands are confined with little number of households, more number of people having higher education, having good infrastructure services compared to other villages, improved standard of livings, pucca houses (structures) etc.

5.3 Population

In India population is the most important factor, which needs more attention. The population growth is very phenomenal in both urban and rural systems. About 20 percent decadal growth has been found in the sector, which is far ahead than the other developing countries. This population needs more facilities, infrastructure services, etc. for their development. But, unfortunately, the Indian economy is not developed commensurate with the population growth. In this situation, it is imperative to have a close look at the availability of the population; it's structure, occupation, attitudes, standard of living, etc. to arrive at preparing a feasible development plan to develop them at grass roots level.

In this present investigation, the availability of population is studied very carefully by considering various factors, which are responsible for development, and the available population is presented in table 5.3. The table illustrates that about two-third of the population confined under marginal and small farm categories and the rest are confined under medium and large farm categories. It has been also observed that about 50 percent (42.39 percent) of the total population confined in marginal farm category alone, which shows that more number of people live below the poverty line. The large farm category also represent about 20 percent of the population, which control the entire rural system since they are economically more well-off compared to other segments. The Indian traditional villages give more importance and respect to the wealthy people of the villages, which is also found in this study area.

Table 5.1: Households

S.NO.	SIZE OF FARMS	NO OF HOUSEHOLDS	%
1	MARGINAL	32	47.05
2	SMALL	16	23.53
3	MEDIUM	6	8.83
4	LARGE	14	20.59
5	TOTAL	68	100

Table 5.2: Farmers Composition

S.NO.	SIZE OF FARMS	NO OF PEOPLE							
	IN ACRES	VILLAGE1	%	VILLAGE2	%	VILLAGE3	%	TOTAL	%
1	MARGINAL	6	40	19	55.86	7	36.84	164.7	47.05
2	SMALL	0	0	9	26.47	7	36.84	79.31	23.53
3	MEDIUM	0	0	5	14.7	1	5.26	25.96	8.84
4	LARGE	9	60	1	2.95	4	21.06	76.95	20.58
5	TOTAL	15	100	34	100	19	100	268	
6	%	22.05		50		27.95			

Table 5.3: Composition of Population

S.NO.	SIZE OF FARMS	NO OF PEOPLE					
		ADULTS	%	CHILDREN	%	TOTAL	%
1	MARGINAL	118	41.25	52	45.22	170	42.39
2	SMALL	68	23.77	27	23.47	95	23.69
3	MEDIUM	38	13.28	17	14.78	55	13.73
4	LARGE	62	21.7	19	16.53	81	20.19
5	TOTAL	286	100	115	100	401	100
6	%	71.33		28.67			100

5.4 Sex Ratio

Role of women in integrated rural development has been, induced by various scholars, and brought their importance at various stages of program implementation. It has been observed that females play major role in program implementation at the grass roots level in different programs, such as, Rural Energy, Training to rural youth for self employment, small and marginal farms development agency, small scale industries and integrated rural development etc, it has been also observed that without the involvement of women, no program can achieve success at the desired level. Having these observations in mind, it was decided to assess the sex ratio of the rural system in this present investigation, and the results are presented in table 5.4. The table illustrates that the representation of male and female population is almost same, but male population has little edge over female population, i.e., 1.74 percent.

5.5 Religion and Caste

In India, religion and castes play a very dominant role in socio, economic and cultural life of the rural system. In the villages, several caste, and religious personal live together and lead their lives. In majority of the villages, the lower caste people (scheduled castes) are the working class. The higher caste (other castes) is the landowners and service classes and the other are labors or marginal small and medium farmers, traders, service class etc. Religion plays very major role in social activities. Especially Christian monarchies serve education and health activities to the needy masses, creating awareness among them, which lead to development at the grass roots level. Followed by almost all religions started to organize the people for social development, which lead to awareness, and socio-economic development in the rural system on one hand, and create communal harmony on the others. To understand the availability of

number of person in different religion, and castes, the investigator studied the persons under different groups. It has been observed that all the households belong the Hindu religion in the study area. The classification of population by caste is presented in table 5.5. The table illustrates that more than nine-tenth of the population belong to backward class, others such as SC and BC represents very meager. It is interested to note that SC group, which is economically backward confined in the lower category of farm sizes and the OC is found in the medium category of farm size. Of the total BC category, about 50 percent of the BC confined in the lowest strata of farm size (marginal), and thus representation is decreasing along with increase in size of farms.

5.6 Education

Education plays a pivotal role in social and economic development of the people. It improves income distribution, standards of living, hygiene and nutritional practices and increases the physical productivity of farmers and workers. It also promotes people in adopting new and advanced technologies easily for increasing their productivity.

The importance of education in the system has been studied very carefully, and presented in table 5.6. This table explains that educational standards in the Mandal are found at a very low rate. The total literacy rate is at 41 percent. Even though the children are going to the schools at primary level is good in number in marginal and small farm categories, the trend is decreasing when it comes to higher education and technical education. People seeking higher education are good in number in large farm sector. But, at the same time it has been observed that only 13.59, 14.09 percent people are in intermediate and graduation respectively when compared to 34.95 percent each at primary and secondary levels.

It was observed during household survey, that the youth who stopped their education in SSC and intermediate classes due to incapable of either continuing the education or joining their traditional jobs like cultivation, pot making, carpentry, etc. It is an indicative of inefficient educational system and irresponsibility of elder people in the house. But, an encouraging feature is the programs implemented by the government in recent times, which give incentives to people for sending their children to schools regularly, at primary education level. In a people participatory program called "Janma Bhoomi", permanent school buildings were constructed and are provided with compound walls to ensure privacy (Fig.5.9). Government is also creating competitiveness among Self Help Groups to attain 100 percent literacy in these families by providing benefits.

Table 5.4: Sex Ratio

S.NO.	SIZE OF FARMS	MALES		FEMALES		TOTAL	%
		TOTAL	%	TOTAL	%		
1	MARGINAL	74	36.81	96	48	170	42.39
2	SMALL	53	26.36	42	21	95	23.69
3	MEDIUM	29	14.45	26	18	55	13.73
4	LARGE	45	22.38	36	18	81	20.19
5	TOTAL	201	100	200	100	401	100
6	%	50.12		49.88		100	

Table 5.5: Caste

S.NO.	SIZE OF FARMS	NO OF PEOPLE					
		OC	%	BC	%	SC	%
1	MARGINAL	0	0	30	47.62	2	66.67
2	SMALL	0	0	15	23.8	1	33.33
3	MEDIUM	2	100	4	6.35	0	0
4	LARGE	0	0	14	22.23	0	0
5	TOTAL	2	100	63	100	3	100
6	%	2.95		92.64		4.41	

Table 5.6: Education

S.NO.	SIZE OF FARMS	NO'S STUDIED/STUDYING										
		UPTO 5TH	%	HIGH SCH	%	INTER	%	DEGREE	%	TECH. EDU	%	TOTAL
1	MARGINAL	32	44.46	25	34.72	7	25	6	20.69	1	20	71
2	SMALL	20	27.78	17	23.61	2	7.15	2	6.89	1	20	42
3	MEDIUM	10	13.88	9	12.5	5	17.85	7	24.13	1	20	32
4	LARGE	10	13.88	21	29.17	14	50	14	48.29	2	40	61
5	TOTAL	72	100	72	100	28	100	29	100	5	100	206
6	%	34.95		34.95		13.59		14.09		2.42		100

5.7 Housing

Housing is one of the basic needs of human beings. It is a major area where a person will invest a large amount of money in his/her lifetime. For rural people, a good house is always an aim and works continuously for constructing a permanent house besides their daily needs. Housing requires a lot of other infrastructure like power, water supply, sanitation, etc. Having the importance of housing in mind, the investigator analyzed the conditions of the houses in the study area and presented in table 5.7 and 5.8.

The table depicts that the percentage of people having pucca, semi pucca and kutcha house are 60.29, 11.77, 27.94 respectively. No of people having permanent houses in small and marginal farm categories are very less. Where as, all the semi-pucca and kutcha houses available in this system are belongs to these people only and about 80 percent of the kutcha houses belong to marginal farm category. Of the total samples, 87.88 percent built their own houses and rest of them was allotted houses under government schemes. The housing conditions in the study area are in bad shape except the houses of large farmers. People are living in houses with poor ventilation, accessibility, air circulation and inhabitable sizes (Fig.5.2 and Fig.5.11). The kutcha houses are built in such a way that there is no open space at all around them, which is very dangerous in case of fire breakouts.

Table 5.7: Type of House

S.NO.	SIZE OF FARMS	NO. OF FAMILIES					
		PUCCA	%	SEMI-PUCCA	%	KUTCHA	%
1	MARGINAL	12	29.27	5	62.5	15	78.94
2	SMALL	11	26.83	1	12.5	4	21.06
3	MEDIUM	4	9.75	2	25	0	0
4	LARGE	14	34.15	0	0	0	0
5	TOTAL	41	100	8	100	19	100
6	%	60.29		11.77		27.94	

Table 5.8: Type of Housing Scheme

S.NO.	SIZE OF FARMS	NO. OF FAMILIES			
		GOVT	%	OWN	%
1	MARGINAL	4	50	26	44.82
2	SMALL	4	50	12	20.69
3	MEDIUM	0	0	6	10.34
4	LARGE	0	0	14	24.15
5	TOTAL	8	100	58	100
6	%	12.12		87.88	

5.8 Health and Sanitation

Most of the rural India population is suffering from poor health and sanitation facilities. Lack of these is further worsening their living conditions who, are already suffering from poverty. Hygienic conditions are necessary for their well-being, those otherwise will reduce the working capacity of farmers and workers and hence productivity.

Access to primary health is very poor in the village. All the surveyed villages do not have any medical facilities. People in these villages are traveling a distance of 2.5 to 4 km to avail the facility. It has been observed that sanitation facilities are completely in a mess. There are no drains for sewage water disposal in the villages (Fig.5.1).

Wastewater is getting stagnated around the houses making the surroundings unhygienic. Though drains are observed in some villages, they are not properly used and maintained. They are filled with unwanted materials like soil, debris, etc (Fig.5.7). Location of the drains is also improper. There is hardly any planning procedure involved in these implemented programs. This type of approach is posing a major restraint to development in the rural areas. Because, on one side, the funds available are limited and scanty and fund utilization is found improper and unproductive on the other (Fig.5.6). Hence there is every necessity of planning and sustainability for all the programs that are to be implemented in rural areas.

5.9 Type of the Soil

Cropping pattern can also be decided depending on the type of soil availability. The other factors, which depend on the type of the soil, are fertility, water retaining capacity and their resistance to erosion.

The diversity of the soils is less in the study area. The major soil types are black, sandy and a combination of these two (table 5.9). Black soils are more fertile and has good water retaining capacity (Fig.5.10). So crops, which require more water, are suitable for this soil. Sandy soil is more suitable for dry crops, and major part the sandy soil is confined with cash crops. This sandy soil is also suitable for orchard.

5.10 Terrain of the Area

The quantity of water required to irrigate a unit land, for any crop, depends on the terrain of the area. It decides the method of applying water to the crops as well as the soil conservation measure to be taken. More than 80 percent (table 5.10) of the area in the Mandal is flat in nature since more quantity of the land in the study area is confined in flat area, and cereal crops are more prominent in this area. Among cereal crops, paddy is the prominent one, and occupies the major foodstuff in the study area. Paddy crop needs more quantity of water. Since the area is flat nature, water required for irrigation is less when compared to slope and irregular land. For any other land-based works too, such as, housing, and other construction works, initial expenditure requirement will also be less, since no need of land reclamation.

5.11 Horticulture

Horticulture is one of the most important activities in the rural system. Most of the horticulture crops are cash crops (plantation crops) and these fetch more income compare to cereal crops. The plantation crops are perennial in nature and it needs less quantity of human energy for operation, less input (energy input in terms of both organic and inorganic fertilizers), pesticides etc, and yield more income. It also gives employment opportunities to the rural masses. The output of the horticulture crops (plantation crops) becomes an

input to most of the rural industries, which are confined in the rural system. It also becomes a center of apiculture activities since the plantation crops are perennial in nature. Most importantly, these crops maintain the ecological balance in this system since they are perennial in character.

Horticulture brings more economy to the rural people. Sandy soil is more suitable for it. A variety of these crops are cultivable in the area as it is evident from the existing crops like Coconut, Banana, Mango, Cashew, Goa, etc. About 20 percent (table 5.11) households have this practice with an area of 7.39 percent (percentage to the total land under cultivation among the households).

Table 5.9: Type of the Soil

S.NO.	SIZE OF FARMS	NO OF PEOPLE											
	IN ACRES	BLACK(1)	%	RED(2)	SANDY(3)	%	BOTH (1) &(3)	%					
1	MARGINAL	10	58.82	0	11	44	4	20					
2	SMALL	3	17.64	0	8	32	5	25					
3	MEDIUM	2	11.77	0	1	4	3	15					
4	LARGE	2	11.77	0	5	20	8	40					
5	TOTAL	17	100	0	25	100	20	100					
6	%	27.43		0	40.32		32.25						

Table 5.10: Terrain of the Area

S.NO.	SIZE OF FARMS	NO OF PEOPLE											
	IN ACRES	FLAT(1)	%	SLOPE(2)	%	BOTH(1)&(2)	%						
1	MARGINAL	23	46	2	100	0	0						
2	SMALL	16	32	0	0	0	0						
3	MEDIUM	5	10	0	0	1	11.12						
4	LARGE	6	12	0	0	8	88.88						
5	TOTAL	50	100	2	100	9	100						
6	%	81.98		3.27		14.75							

Table 5.11: Horticulture

S.NO.	SIZE OF FARMS	HORTICULTURE											
	IN ACRES	YES	NO	AREA(ACRES)									
1	MARGINAL	0	25	0									
2	SMALL	1	15	1									
3	MEDIUM	4	2	6.6									
4	LARGE	7	7	21									
5	TOTAL	12	49	28.6									
6	%	19.68	80.32	7.39									

5.12 Minor Irrigation Facilities

Agriculture sector is the backbone of the Indian economy. Agriculture forms an important activity for about 70 percent of the population of the country, and supports about one-third of the gross national product. Rivers, reservoirs, canals and irrigation tanks provide the required irrigation facility to increase the crop production. The crop production under irrigated agricultural system is different from that under dry land agricultural production system. The dry land agricultural production system depends mainly on the rainfall whose occurrence is stochastic in nature. But in an irrigated agricultural system, crop production is mainly influenced by farm management practices, in addition to climate and other environmental factors. The management practices include coordinating the activities of farming practices with the onset of rains, timely ploughing, use of good quality seeds, timely application of irrigation water, manuring, weeding and plant protection against insects, pests and deceases. These aspects are being purely controlled by the farmers, which affect the total yield, and hence they have to be considered as the fundamental inputs for successful crop production.

The study area is bestowed with many ponds well distributed throughout the area. River Vamsadhara is flowing along the Mandal, which is a source of water for agricultural and it's allied activities. In some villages canals are the sources of water for irrigation. As the depth of ground water table is shallow, this is a major source for irrigating crops. Nearly 50 percent (table 5.12) of the households are dependent on this source of water. A percentage of 16.39 are dependent on both tube wells and ponds. Another 16.39 percent are dependent on canals, ponds and tube wells.

Besides having good water resources and irrigation facilities, some parts of the Mandal are drought affected in the recent years. Farmers are suffering from lack of irrigation water (Fig.5.8). Since last 3 to 5 years the Mandal is receiving irregular rainfall, which resulted in diminishing the water resources (Fig.5.13). Another reason being the irresponsibility of farmers and people towards this valuable natural resource. They are continuously exploiting water resources without any recharging measures. All the surface water sources like ponds; wells, etc. are diminishing both in terms of area and quantity. A considerable number of these are witnesses of man's polluting way of life. In some areas people started occupying the dried waterbeds that are later converting them into agricultural fields. This type of behaviour is a serious threat to the very nature of human existence. If this continues the basic concept of sustainability will be defeated.

Table 5.12: Minor Irrigation Facilities

SIZE OF FARMS					NO OF FAMILIES								
S.NO.		CANALS(1)	%	TUBE WELLS(3)	%	BOTH(1)&(2)	%	BOTH(1)&(3)	%	BOTH(2)&(3)	%	(1),(2)&(3)	%
1	MARGINAL	3	74	19	61.5	2	66.66	1	10	0	0	0	0
2	SMALL	2	26	7	22.5	0	0	4	40	2	100	1	10
3	MEDIUM	0	0	3	9.6	0	0	1	10	0	0	1	10
4	LARGE	0	0	2	6.4	1	33.34	4	40	0	0	8	80
5	TOTAL	4	100	31	100	3	100	10	100	2	100	10	100
6	%	6.55		49.19		4.93		16.39		3.27		16.39	

(Note: Canals-1, Ponds-2, Tube Wells-3)

5.13 Power

The use of electrical energy is very high in the developed and some of the self-countries. The industrialization of a country can also be runs by the quantum of consumption of electric power. Climatic conditions also dictate the intensity of use of power. Thus in hot countries air conditions warranty larger use of power. In cold countries, besides heating oil to combat the severity of cold, electrical energy also is utilized to keep warm.

Per capita consumption of power globally is 2053 kw-h in 1997. The high-income nations had the highest per capita consumption of 8238 kw-h, the middle-income countries 1928 kw-h and the low-income countries just 448 kw-h. The per capita use in Europe and central Asia was 2692 kw-h. The per capita consumption of power in China was 714 kw-h where as in India it was 368 kw-h.

Production of electric power is one thing but transmitting and distributing it efficiently is another. The transmission and distribution losses to the percent of the output are very less in the advanced countries where as in the developing countries it is very high. For example it was 4 percent in Canada, Germany, United Kingdom, Belgium etc, where as in India it was 18 percent.

In India consumption of electricity in the primary sector of economy (agriculture) is very minimal. About 6 to 7 percent electricity is used of the total electricity consumption for agriculture operations. Industry, domestic, trade and commercial activities consume more quantity of energy (No.39).

Unfortunately, the planners, thinkers, economists, etc. are not giving more importance in application of power supply in the rural system. Some states like, Tamilnadu, Punjab, Maharastra, etc. have given more importance towards supplying power in the rural system compared to other states. As a result, the

economy of the states is very much higher than the other which do not supply much power to rural system.

It is of interest, the investigator analyzed the power supply at the grass roots level and presented in table 5.13.

Power is very much essential for developing the rural areas. Agriculture requires a continuous supply of power for irrigation, which lead to good productivity. It is a primary requirement for setting up of industries too in the rural system. The table explains that a total of 92.64 percent households are having electric connections in the villages. It has been also observed that the quality of transmission system is also so bad and is also very poorly maintained.

5.14 Water Supply

Water is not only a physiological necessity to humans and animals but also essential to agricultural and industrial development and growth of ant country. The availability of potable water is still a major problem in rural areas in India. Over 95 percent of the rural population in 13.96 lakh habitations of the country (leaving only 44000 habitations uncovered) has now access to drinking water with an investment of over Rs. 180000 million through installation of over 3 million hand pumps and 1.16 lakh piped water supply systems.

While the physiological achievement has been impressive, the bacteriological and chemical contamination of drinking water sources posed serious threat to public health. The nation-wide survey of habitations completed in the year 1994 shows that over 43.5 million people living in 1.42 lakh habitations are at health risks due to problems of drinking water quality like excess fluoride, arsenic, salinity, iron and chemical pollutants, such as, pesticides and insecticides (No.38).

Table 5.13: Power

S.NO.	SIZE OF FARMS IN ACRES	Quality	
		GOOD	BAD
1	MARGINAL	29	0
2	SMALL	14	0
3	MEDIUM	6	0
4	LARGE	14	0
5	TOTAL	63	0
6	%	100	0

Table 5.14: Source of Drinking Water

S.NO.	SIZE OF FARMS			NO. OF FAMILIES			
		WELL	%	HAND PUMP	%	BORE WELL	%
1	MARGINAL	27	52.94	2	25	3	33.33
2	SMALL	9	17.64	4	50	3	33.33
3	MEDIUM	5	9.8	0	0	1	11.12
4	LARGE	10	19.62	2	25	2	22.22
5	TOTAL	51	100	8	100	9	100
6	%	75		11.76		13.24	

Table 5.15 :Distance Travelled for Fetching Drinking Water

S.NO.	SIZE OF FARMS	NO. OF FAMILIES DISTANCE IN KM					
		0-0.5	%	0.6-1.0	%	>1.0	%
1	MARGINAL	30	50	2	28.59	0	0
2	SMALL	13	21.67	3	42.85	0	0
3	MEDIUM	5	8.33	1	14.28	0	0
4	LARGE	12	20	1	14.28	1	100
5	TOTAL	60	100	7	100	1	100
6	%	88.24		10.29		1.47	

5.15 Transportation

Inadequate rural connectivity and lack of mobility pose constraints to rural development in India. Access to form roads connecting to marketing centers would greatly help farmers in reduction of transport costs as well as bringing produce to the market in time without much loss of produce and to get a better price for it. The cost and availability of public transportation/connectivity became key factors for expansion of employment opportunities as well as efficient delivery of services in rural areas.

The Mandal has excellent accessibility from the district headquarters (Fig.5.5). There are two access roads connecting these two. The alignment of these roads covers a good number of villages. Both the roads are well maintained. But the roads, which are connecting the villages with main access roads, are in a bad condition. They are unmetalled and improperly maintained (Fig.5.3). Because of this people are not effectively using the higher level of transportation, which is good in the study area, and other facilities that are available. The people have good accessibility to marketing facilities through the higher level of transportation but the absence of efficient network with the villages and the higher costs involved in transportation are discouraging them.

5.16 Dairying

Dairying is an important activity apart from agriculture in the rural system. Though dairying is an allied activity of agriculture, in some places it never got more importance in the state. But in the study area, both agriculture and dairying are absolutely interlinked and interdependent each other. Agriculture gives energy input to dairying in the form of paddy straw, rice husk, tamarind seed, cotton seed, sugar straw etc, and in turn it receives energy input from animal husbandry in the form of animal dung, and animal labour. Dairying

not only generates income to the households in the rural system, but also it provides employment opportunities, meat to the masses, and provides dung to agriculture in addition to animal labour. Therefore, it occupies important place in the agrarian economy. In this present investigation availability of animals are studied very carefully, and are grouped into three categories. They are cows, buffaloes and ox, and are presented in table 5.16. The table 5.16 illustrates that they are total number of 88 cows, 10 buffaloes, and 78oxes available in the sample households. Of the total 88 cows, more than one-third of the cows are confined in the marginal farm category, and about another set of one-third cows are confined in the large farm category, and the rest are distributed among the small and medium farm categories. Of the total number of buffaloes available, about two-third is confined in the large farm category, followed by medium farm 30 percent, and a meager is confined to marginal farm. Of the total number of ox available, the availability of ox is increasing along with increase in size of farm.

5.17 Milk Production

Average milk production is very less in the system since the households are having local variety of cows, and buffaloes. About 50 percent of the available cows are mulching at present, and the yield is very low, i.e., about two to four liters per day. The total quantity of milk production is 129 liters per day. Of which, about half of the production (44.96 percent) is confined with large farm category, and one-fourth is confined in the marginal farm category. Since the large farm categories have buffaloes, the milk production is increased in this segment because buffaloes yield more output.

5.18 Poultry

Poultry is also another important source of income at the marginal farm size segment of the rural system. The lower income group used to have poultry for having highly nutritious food. The availability of poultry in the system is analyzed very carefully, and presented in table 5.17. The table shows that of the total availability of 113 chicks among the sample households, about two-third of them are evenly distributed among the marginal and large farm category. Rest of them is distributed among the small and medium categories. In egg production, more than one-third of the egg production is confined to marginal category (34.11 percent), followed by large farm (27.07 percent), small farm (20.47 percent) and medium farm (18.35 percent).

5.19 Cropping Pattern

Cropping pattern is the important parameter, which decides the income in the rural system. Generally, cereal crops fetch little income compare to plantation crops. It is of interest, the investigator studied the cropping pattern of the system and divided the cropping pattern into cereal crops, plantation crops, and other crops and presented.

5.19.1 Cereal Crops:

Cereal crops are very much familiar in the plain areas of the system. In the rural system paddy crop occupied more priority since the major foodstuff is also based on the particular crop. Besides paddy, some other cereal crops are cultivated in the system. They are black gram, green gram, ragi, bajra, horse gram, etc. The areas under cereal crops are studied very carefully, and presented in table 5.18. This table illustrates that half of the paddy crop area is confined in small farm category, and only about 11 percent is confined in marginal farm category. It clearly shows that the marginal farm category

persons are having very less quantity of lands under paddy, which compel them to go for coolly job for survival. All other crops too it has been obtained almost the similar trend, i.e., and under crops is increasing along with increase in size of farms. In black-gram, the larger farm size occup0ies about 60 percent are of the total cultivated area, and in green gram it occupies about four-fifth of the total cultivated area. In ragi crop, the larger farm is the only category has the entire cultivation, and in sesumum, about 85 percent is cultivated by the large farm size category, and the rest is by the small farm category. It is very clearly shows that large farm size category totally control the agricultural system of the study area.

5.19.2 Plantation Crops:

Generally, plantation crops fetch more quantity of income compared to cereal crops. But the people who have very less quantity of land generally opt for cereal crops since cereal crops is the crop which is used as a major foodstuff for day to day survival. The large farm category generally occupies more quantity of area under plantation crop.

Moreover, plantation crops are generally cultivated in the elevated place where less irrigation facilities since most of the plantation crops are based on rain fed cultivation. The available area under plantation crops are studied very carefully, and presented in table 5.18. This table depicts that three types of plantation crops (cash crops) are available in the system. They are sugarcane, coconut, and banana. The areas under these crops are increasing along with increase in size of farms. The large farm size category occupies about 90% of land of the total sugarcane and banana crop cultivated area. In coconut, three-fourth of the total area is confined in medium farm category, and the rest is

confined in small farm category. It clearly shows that the plantation crop (cash crop) is more or less confined in large farm size category.

5.19.3 Other Crops:

Other crops, such as, groundnut, chilli, and mango are also found in the system. The available other crops are studied very carefully and presented in table 5.18. This table explains that all other crops, cultivation is also increasing along with increase in size of farm. In groundnut crop, the large size of farm occupies more than three-fourth of the total cultivated land, and the rest of the area is distributed among the other size of farm. Of which small farm category occupies more quantity area, i.e., 17 percent of the total groundnut crop cultivated area. In chilli crop cultivation, the lower size of farm give importance and the area is also very meager. In Mesta crop cultivation, nine-tenth of the area is confined in large size of farm.

The cropping pattern analysis clearly shows that the large farm size category plays a major role in the rural system. It more or less controls the entire rural economy since it has more quantity of area under commercial crops, other crops, and about half of the cereal crops. This also justifies the occupation pattern of the system. A considerable size marginal farm category population work as a daily wages in the large farm size category.

Table 5.16: Dairying

S.NO.	SIZE OF FARMS	NO OF FAMILIES	%	TOTAL NO'S COWS	%	BUFFALOES	%	OX	%	TOTAL	MILK PRODUCED(LT/DAY)	%
1	MARGINAL	21	38.89	30	34.09	1	10	20	25.64	51	33	25.58
2	SMALL	13	24.07	20	22.73	0	0	24	30.77	44	24	18.6
3	MEDIUM	6	11.12	12	13.63	3	30	8	10.25	23	14	10.86
4	LARGE	14	25.92	26	29.55	6	60	26	33.34	58	58	44.96
5	TOTAL	54	100	88	100	10	100	78	100	176	129	100
6	%			50		5.68		44.32		100		

Table 5.17: Poultry

S.NO.	SIZE OF FARMS	NO OF CHICKS	%	EGGS NO'S/MON	%
1	MARGINAL	33	29.2	145	34.11
2	SMALL	24	21.23	87	20.47
3	MEDIUM	19	16.81	78	18.35
4	LARGE	37	32.76	115	27.07
5	TOTAL	113	100	425	100

Table 5.18:Cropping Pattern

Cereal Crops:

S.NO.	SIZE OF	AREA UNDER CROP (IN ACRES)											
	FARMS	PADDY	%	BLACK GRAM	%	GREEN GRAM	%	BAJRA	%	RAGI	%	VULAVA	%
1	MARGINAL	37.4	11	10.85	12.02	3.5	7	0	0	0	0	0	0
2	SMALL	72	21.1	13.5	14.94	2.5	5	5.5	24.03	0	0	1	17
3	MEDIUM	63	18.5	12	13.28	5	10	0.4	1.74	0	0	0	0
4	LARGE	169	49.5	54	59.76	39	78	17	74.23	14	100	5	83
5	TOTAL	341.4	100	90.35	100	50	100	22.9	100	14	100	6	100
6	%	65.07		17.22		9.53		4.38		2.66		1.14	

Plantation Crops:

S.NO.	SIZE OF	AREA UNDER CROP (IN ACRES)					
	FARMS	SUGARCANE	%	BANANA	%	COCONUT	%
1	MARGINAL	1	1.58	0	0	0	0
2	SMALL	2	3.17	0	0	1	25
3	MEDIUM	4	6.37	3.6	14.63	3	75
4	LARGE	56	88.9	21	85.37	0	0
5	TOTAL	63	100	24.6	100	4	100
6	%	68.77		26.87		4.36	

Other Crops:

S.NO.	SIZE OF	AREA UNDER CROP (IN ACRES)					
	FARMS	GROUND NUT	%	CHILLI	%	MESTA	%
1	MARGINAL	1.5	2.65	7.15	26.53	1	5
2	SMALL	9.6	17	7.4	27.45	1	5
3	MEDIUM	2.5	4.42	12.4	46.02	0	0
4	LARGE	43	76	0	0	18	90
5	TOTAL	56.6	100	26.95	100	20	100
6	%	54.66		26.02		19.32	

5.20 Financial Assistance

The study area does not have cooperative bank, which generally give loans to the rural masses for agricultural activities. Branches of commercial banks, such as State Bank of India and Andhra Bank are available in the system and generally giving loans to the haves of the system. The available financial help facilities are studied carefully, and are presented in table5.19. The table explains that of the total number of large farm category households about 90 percent of the larger farm category enjoy bank loans, followed by about 25 percent of the total marginal farm category, 12.5 percent of the total small farm category, and 50 percent of the medium farm category. Of the 32 sample households, more than 50 percent of the households depend on shopkeepers. Of the total of 16 small farm category, about 62 percent depend on shopkeepers. It clearly shows that larger number of people from the downtrodden community depends on shopkeepers, whereas the haves are depending on the financial institutions for help.

5.21 Income

Income is the basic phenomena, which decide the function of the system. In a rural system, income plays a very important role, which not only decide the economic function but also decide the social function. The social status too being decided based on the economic status irrespective of caste, religion, etc. Having the importance of income in the rural system, the investigator carefully studied the income status of the rural system, and presented in table 5.20. This table explains that the annual average income of the marginal farm category household is Rs.18947/-. It is increasing along with increase in size of farms i.e., Rs.47694/- in small farms, Rs.90667/- in medium farm and Rs.228043/- in large farms. As per the Government of India, the poverty line is "the annual

income of the household is between Rs.13000/- and Rs.19650/-". As per these, the entire households confined in the marginal farm category are under poverty stricken condition.

5.22 Expenditure

Expenditure is generally commensurate with income in the rural system. In come cases expenditure is more than the actual income. In these cases, the households either collect the money from the financial institutions, or from shopkeepers, or sale the wealth to meet the higher expenditure. These are generally obtained in the small and medium size of farm households the same incidents happening just because of awareness in higher and technical education. The children belong these two groups (small and medium farms) started to study higher and technical education, which need huge amount of money. Though the expenditure is very high for these activities people started to have good education by selling their wealth, which include landed property.

Having this knowledge in mind, the investigator analyzes the expenditure status in the system and presented in table 5.20. It was found that medium size of family spend more amount of money than the income, whereas the other size of farms spent lesser than the income. It is of interest; the investigator inquired the reasons for the same and found that the medium size of farm households spent more quality of money for their children's higher and technical education. If this trend continues, the investigator feels that the system will have a steady development.

5.23 Saving

Saving is the important factor, which lead to capital formation. Once the capital formation is very high then higher investment is anticipated in the system, which leads to multi-dimensional spread effects in the system. It is of

the interest, the investigator carefully studied the savings pattern of the rural system, and presented in table 5.20. This table depicts that the average saving is very much higher in all households, except medium size family. Since the medium size family is spending more money for higher and technical education, it is also a highly positive trend in development. It has been observed that even the marginal farm category saves money, which leads to further investment for development.

5.24 Occupation

Occupation is the important parameter, which decide the income of the households, at the micro level and the economy at the macro level. In a developed country, more number of people engaged in secondary and tertiary economy, and very less number of people engaged in primary sector of the economy. In a developing and under developed countries, it is just opposite trend i.e., more number of people engaged in primary sectors of the economy (agriculture), and very less number of people engaged in secondary and tertiary of the economy. Having these trends in mind, the investigator studied the occupational status very carefully, and presented in table 5.21. This table explains that farmers, daily wagers, and both of them are decreasing in number along with increase in farm size. More number of persons from marginal farm size engage in daily wage activities since they have very little land, which cannot afford the require income for expenditure. So that these segment people engage for daily wages activities. Of the total people engage in service classes, third-fourth persons belong large farm size category. This is obvious that more number of people from these class categories have higher and technical education.

Table 5.19: Financial Help

S.NO.	SIZE OF FARMS	NO. OF FAMILIES					
		BANK	%	SHOP KEEPERS	%		
1	MARGINAL	8	32	17	60.72		
2	SMALL	2	8	10	35.71		
3	MEDIUM	3	12	0	0		
4	LARGE	12	48	1	3.57		
5	TOTAL	25	100	28	100		
6	%	40.32		45.16			

Table 5.20: Income Details

S.NO.	SIZE OF FARMS	AVERAGE INCOME OR EXPENDITURE					
		ANNUAL	ANNUAL	ANNUAL	ANNUAL		
		INCOME	EXP	SAVINGS	DEBTS		
1	MARGINAL	18947	15748	3199	0		
2	SMALL	47695	31997	15697	0		
3	MEDIUM	90667	104292	0	13625		
4	LARGE	228043	118929	109115	0		
5	TOTAL	385352	270966	128011	13625		

Table 5.21: Occupation

S.NO.	SIZE OF THE FARM	FARMER(1)	DAILY WAGER(2)	BUSINESS	SERVICE	BOTH 1&2	TOTAL
1	MARGINAL	17	6	0	1	8	32
2	SMALL	12	1	0	0	3	16
3	MEDIUM	6	0	0	0	0	6
4	LARGE	11	0	0	3	0	14
5	TOTAL	46	7	0	4	11	68
6	PERCENTAGE	67.66	10.29	0	5.88	16.17	

Fig 5.13: Diminishing water resources.

Fig 5.11: Improper maintenance of surroundings.

Fig 5.12: Absence of information on the notice regarding agriculture.

Fig 5.9: Outcome of "Janma Bhoomi" program.

Fig 5.10: Availability of fertile land.

Fig 5.7: Non-functioning of the drainage system.

Fig 5.8: Dry agricultural field.

Fig 5.5: Availability of good transportation facilities.

Fig 5.6: Witness to the improper use of available resources.

Fig 5.3: Poor condition of the only road in the village.

Fig 5.4: Unhygienic conditions prevailing at drinking water sources.

Fig 5.1: Lack of sanitation facilities in Salihundam Village.

Fig 5.2: Unhealthy conditions near the houses.

5.25 Inferences

1. Population growth is more in marginal and small farm categories compared to medium and large farm categories.
2. A considerable number of women are available for carrying out the developmental activities.
3. Most of the people in the study area belong to backward classes, of which majority of them are found in lowest strata of the farm size.
4. Literacy rate is very less in the study area.
5. People opt for higher and technical education is less in number.
6. A large number of youth in the study area are suffering from unemployment because of inefficient and unproductive educational system.
7. The government programs for improving educational standards in the study area, in recent times, are encouraging.
8. Implementation of adult education program is found unsatisfactory.
9. Housing conditions are found unsatisfactory in the Mandal. Marginal and small farm category people are having less number of permanent houses.
10. Accessibility of the village people to health and sanitation facilities is very poor.
11. The soil in the study area is fertile in nature.
12. The terrain of the land is flat in nature and is suitable for any type of developmental activities.
13. The Mandal has good potentialities for horticulture crops. But people are unable to exploit these potentialities due to their unavoidable conditions for cultivating cereal crops, which are the major foodstuff to them.

14. Even though the Mandal has good water resources, they are not yet fully exploited. These water resources are dwindling in terms of area and quantity due to people's behaviour.
15. The agricultural land in the study area is not utilized to the maximum extent because of poor irrigation facilities.
16. The study area is suffering from inefficient power transmission system.
17. The Mandal has good transportation facilities, which is not fully utilized.
18. Most of the area under cash crops belongs to medium and large farm categories.
19. People in the study area are facing acute water scarcity during the summer season.
20. The efforts of the government to provide safe drinking water to all villages are becoming the futile exercise because of their fragmented approach.
21. Irresponsible behaviour of people is becoming a threat to natural resources.
22. People are under the impression that the government is solely responsible for development process.
23. There are no government marketing facilities, in the Mandal. As a result, the farmers are not getting minimum price decided by the government to their agricultural outputs.
24. The available potentialities in tourism industry are not tapped.
25. There is no control over development activities in the study area. People are constructing houses in valuable fertile agricultural lands.
26. Majority of the bovine population is confined in the marginal farm category, since it gives additional income to the poor marginal farm category for their survival.

27. Buffaloes are found more number in the larger farm. It is obvious that the cost of buffaloes is very much higher so that only larger income group people can afford it.

28. Oxen are found evenly distributed. In fact the marginal farm category-using ox for labor ploughing. They get more employment opportunities during the ploughing, harvesting etc, for ox and themselves. The small and medium persons also doing the business in addition to their own activities. The larger farm categories higher labors and using their animals for these agricultural operations.

29. Larger number of people from large farm category are enjoying the Government Financial Institutions facilities, where as the downtrodden community are depending on the shopkeepers for financial help.

30. Medium size family spends more quantity of money for children's higher and technical education, which is a positive symptom for development.

31. Saving is found even in the marginal farm category, which is the most downtrodden community of the system.

32. In occupation, number of people engaged in agricultural activities is decreased along with increase in size of farms.

33. More number of people from the marginal farm size category engaged in daily wage activities for their survival since they get very little income from farming activities.

34. Larger number of people from large farm size category is engaged in service activities since they are having more number of higher and technical literates in their category.

Table 5.23: Variables which have no Relation with Farm Size

S.NO.	NAME OF THE VARIABLE	PRINCIPAL CONTROLLING PARAMETER	CORRELATION COEFFICIENT
1	NAME OF THE VILLAGE	SIZE OF FARMS	-0.2582
2	OCCUPATION OF THE HEAD OF THE HOUSEHOLD	A. MARGINAL	-0.1617
3	RELIGION	B. SMALL	0
4	CASTE	C. MEDIUM	-0.1366
5	TOTAL NO. OF PEOPLE IN THE HOUSE	D. LARGE	0.13142
6	NO. OF MALES		0.3375
7	NO. OF FEMALES		0.03762
8	NO. OF ADULTS		0.23388
9	NO. OF CHILDREN		-0.0921
10	TYPE OF THE SOIL		0.4296
11	FERTILITY OF THE SOIL		-0.1071
12	ANY INTER CROPPING OR MIXED CROPPING SYSTEM		0.28182
13	YEILD OF PADDY IN KHARIF SEASON (BAGS/ACRE)		0.34837
14	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.08542
15	TOTAL EXPENDITURE IN RS. /ACRE		0.4776
16	TOTAL PROFIT IN RS. /ACRE		0.19936
17	AREA UNDER PADDY CROP IN RABI SEASON IN ACRES		0.1214
18	YEILD OF PADDY IN RABI SEASON (BAGS/ACRE)		-0.0483
19	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		-0.1209
20	TOTAL EXPENDITURE IN RS. /ACRE		-0.0153
21	TOTAL PROFIT IN RS. /ACRE		0.15406
22	AREA UNDER PADDY CROP IN SUMMER SEASON IN ACRES		0.04138
23	YEILD OF PADDY IN SUMMER SEASON (BAGS/ACRE)		0.04138
24	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.04138
25	TOTAL EXPENDITURE IN RS. /ACRE		0.04138
26	TOTAL PROFIT IN RS. /ACRE		0.04138
27	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.29414
28	TOTAL EXPENDITURE IN RS. /ACRE		0.40932
29	TOTAL PROFIT IN RS. /ACRE		0.56852
30	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.24211
31	YEILD OF GROUND NUT IN SUMMER SEASON (BAGS/ACRE)		0.47215
32	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.40869

35	TOTAL EXPENDITURE IN RS. /ACRE								0.29316
36	TOTAL PROFIT IN RS. /ACRE								0.4151
37	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0.42413
38	AREA UNDER MIRCHI CROP IN RABI SEASON IN ACRES								0.04138
39	YEILD OF MIRCHI IN RABI SEASON (BAGS/ACRE)								0.04138
40	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0.04138
41	TOTAL EXPENDITURE IN RS. /ACRE								0.04138
42	TOTAL PROFIT IN RS. /ACRE								0.04138
43	AREA UNDER MIRCHI CROP IN SUMMER SEASON IN ACRES								-0.0146
44	YEILD OF MIRCHI IN SUMMER SEASON (BAGS/ACRE)								-0.1892
45	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								-0.19
46	TOTAL EXPENDITURE IN RS. /ACRE								-0.1722
47	TOTAL PROFIT IN RS./ACRE								-0.1474
48	YEILD OF MESTA IN KHARIF SEASON (BAGS/ACRE)								0.1106
49	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0.10315
50	TOTAL EXPENDITURE IN RS. /ACRE								0.37843
51	TOTAL PROFIT IN RS. /ACRE								0.36547
52	AREA UNDER SESAMUM CROP IN KHARIF SEASON IN ACRES								-0.0123
53	YEILD OF SESAMUM IN KHARIF SEASON (BAGS/ACRE)								-0.0123
53	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0
55	TOTAL EXPENDITURE IN RS. /ACRE								-0.0123
56	TOTAL PROFIT IN RS. /ACRE								-0.0123
57	AREA UNDER SESAMUM CROP IN RABI SEASON IN ACRES								0.2559
58	YEILD OF SESAMUM IN RABI SEASON (BAGS/ACRE)								0.2559
59	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0
60	TOTAL EXPENDITURE IN RS. /ACRE								0.2559
61	TOTAL PROFIT IN RS. /ACRE								0.2559
62	AREA UNDER SESAMUM CROP IN SUMMER SEASON IN ACRES								0.20653
63	YEILD OF SESAMUM IN SUMMER SEASON (BAGS/ACRE)								-0.0396
64	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0
65	TOTAL EXPENDITURE IN RS. /ACRE								0.02697
66	TOTAL PROFIT IN RS. /ACRE								0.06517
67	AREA UNDER BAJRA CROP IN KHARIF SEASON IN ACRES								0.399
68	YEILD OF BAJRA IN KHARIF SEASON (BAGS/ACRE)								0.22297
69	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0.28408

70	TOTAL EXPENDITURE IN RS. /ACRE								0.23344
71	TOTAL PROFIT IN RS. /ACRE								0.24869
72	AREA UNDER BAJRA CROP IN SUMMER SEASON IN ACRES								0.05931
73	YEILD OF BAJRA IN SUMMER SEASON (BAGS/ACRE)								0.07218
74	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)								0.07942
75	TOTAL EXPENDITURE IN RS. /ACRE								0.05836
76	TOTAL PROFIT IN RS. /ACRE								0.0751
77	PREDOMINANT METHOD BY WHICH FARMERS SELL OR								
	MARKET AGRICULTURAL PRODUCTS								0.13463
78	VEGETABLES GROWN USED FOR								0.32492
79	NO. OF HOURS OF ELECTRICITY SUPPLY TO AGRICULTURE								0.57075
80	CHARGES OF ELECTRICITY FOR AGRICULTURE IN RS.								0.63672
81	CHARGES OF IRRIGATION WATER IN RS. /YEAR								0.63672
82	NO. OF COWS								0.30448
83	NO. OF BUFFALOES								0.31444
84	NO. OF OX								0.48068
85	AMOUNT OF MILK PRODUCED IN LITERS/DAY								0.568
86	MILK USED FOR								0.59092
87	DUNG USED FOR								0.39549
88	EXPENDITURE ON CATTLE PER MONTH IN RS.								0.6347
89	DISTANCE THEY ARE TRAVELLING TO AVAIL								
	VETARINARY FACILITIES								-0.009
90	HORTICULTURE PRACTICE IS THERE?								-0.1443
91	AREA OF CROP CULTIVATED IF YES IN ACRES								0.69438
92	APICULTURE IS THERE?								0
93	NO. OF CHIKS IN THE HOUSE								0.38028
94	EGGS PRODUCED IN QUANTITY (NO./MONTH)								0.27617
95	EGGS PRODUCED USED FOR								0.19625
96	COST OF FEEDING PER CHICK PER MONTH IN RS.								-0.1328
97	SOURCE OF WATER FOR CULTIVATION								0.58617
98	METHOD OF APPLYING WATER TO THE CROPS								0.5342
99	ANY WATERSHED DEVELOPMENT PROGRAM IS THERE?								-0.009
100	IF YES PEOPLE PARTICIPATED OR NOT?								0.00901
101	ANY OTHER PROGRAMS TAKING PLACE ALONG WITH								
	WATERSHED DEVELOPMENT PROGRAM?								0.00901

102	IMPROVEMENT AFTER IMPLEMENTATION OF THE PROGRAM						0.00901
103	SOIL EROSION CONTROL METHODS ARE USING OR NOT?						0
104	FERTILITY INCREMENT MEASURES						0
105	TYPE OF ROAD SYSTEM IN THE VILLAGE						0
106	MEANS OF THE ACCESS TO THE VILLAGE BY						-0.227
107	DISTANCE OF THE VILLAGE FROM THE MAIN HIGHWAY IN KM						-0.0981
108	DISTANCE OF NEAREST BUS STOP IN KM						-0.2658
109	DIFFERENT MODES OF TRANSPORTATION USED BY THE VILLAGERS						0.61484
110	NO OF TRACTORS IN THE HOUSE						0.50765
111	NO OF BULLOCK CARTS IN THE HOUSE						0.37739
112	NO OF MOTOR CYCLES IN THE HOUSE						0.69745
113	NO OF CYCLES IN THE HOUSE						0.22939
114	CONNECTION OF THE VILLAGE TO THE NEIGHBOURING VILLAGES						-0.38
115	DISTANCE TO NEAREST POST OFFICE IN KM						-0.009
116	DISTANCE TO NEAREST TELEGRAPH OIFFICE IN KM						0.00901
117	DISTANCE TO BE TRAVELLED FOR TELEPHONE FACILITY IN KM						-0.38
118	AVAILABILITY OF POWER CONNECTION						-0.1519
119	QUALITY OF VOLTAGE SUPPLY						0.15192
120	NO. OF HOURS OF POWER SUPPLY						0.15192
121	SOURCE OF DRINKING WATER						0.07964
122	DISTANCE THEY ARE TRAVELLING TO GET WATER IN KM						-0.0844
123	REGULATED WATER SUPPLY						0
124	AVAILABILITY OF COMMUNITY TAPS						0
125	DISTANCE THEY HAVE TO TRAVELL TO AVAIL						
	MEDICAL FACILITY IN KM						-0.009
126	FACILITY PROVIDED BY						0.00901
127	TYPE OF FACILITY AVAILABLE						-0.1608
128	EXISTENCE OF PUBLIC LATRINES						0
129	EXISTENCE OF DRAINAGE SYSTEM						0
130	DISTANCE OF NEAREST BANK IN KM						0.00901
131	TYPE OF BANK						0.4485
132	MONEY IF NECESSARY WILL BE TAKEN FROM						-0.2656
133	ANY EXTENSION FACILITIES ARE THERE IN THE VILLAGE?						0.4485
134	NO. OF PEOPLE STUDIED/STUDYING UPTO 5TH CLASS						-0.1166
135	NO. OF PEOPLE STUDIED/STUDYING HIGH SCHOOL						0.33519

136	NO. OF PEOPLE STUDIED/STUDYING INTERMEDIATE	0.49574
137	NO. OF PEOPLE STUDIED/STUDYING GRADUATION	0.48953
138	NO. OF PEOPLE STUDIED/STUDYING TECHNICAL EDUCATION	0.21084
139	DISTANCE OF THE PRIMARY SCHOOL FROM THE VILLAGE IN KM	0
140	DISTANCE OF SECONDARY SHOOL FROM THE VILLAGE	-0.4784
141	DISTANCE OF HIGH SCOOL FROM THE VILLAGE	0.00901
142	REASONS FOR DROPOUTS	-0.1789
143	ANY ADULT EDUCATION FACILITIES ARE THERE?	-0.009
144	ANY LIBRARY FACILITIES ARE THERE	0
145	ANY VOCATIONAL EDUCATION FACILITIES ARE THERE?	0
146	TYPE OF HOUSE	-0.4703
147	TYPE OF THE HOUSING SCHEME	0.19475
148	DWCRA PROGRAM IS THERE?	0
149	NO. OF PEOPLE INVOLVED	-0.539
150	TYPE OF INDUSTRY	0
151	INDUSTRY OWNED BY	0
152	LOCATION OF INDUSTRY	-0.38
153	MARKETING FACILITIES	0
154	TYPE OF ENERGY USED	0.38947
155	TYPE OF COOPERATIVES PRESENT	0.22701
156	FINANCE FACILITIES PROVIDED BY	0.38744
157	EDUCATIONAL EXPENDITURE IN RS. PER MONTH	0.09192
158	RECREATIONAL EXPENDITURE IN RS. PER MONTH	0.68861
159	DEBT IN RS.	-0.0107

Chapter 6

Assessing the Available Resources

6.1 Introduction

This chapter deals with assessment of available resources in the study area. Assessment of the available resources is highly essential in any resource based development plan preparation. To assess the resources, various kinds of resources are considered, and are discussed. They are:

6.2 Human Resources

The most commonly available resource in the rural system is human resource. A larger number of people are passing time without having work. It is a very cheap resource and it should be tapped by preparing scientific plans and by implementing different programs, which will improve their living conditions.

6.3 Forest Resources

Forest resource gives maximum output with minimum inputs. A number of activities like growth of medicinal plants, grazing, biomass production, timber production, maintenance of environment, etc. is associated with forests. Hence, precious natural forest resource should not to be neglected.

6.4 Land Resources

Land is a very scarce resource, which needs more attention, to be utilized carefully, to achieve optimal results. Keeping this view of increasing population and their food requirements, it needs more attention definitely.

6.5 Livestock

Livestock is one of the major livelihoods of the rural people since time immemorial. This resource should be protected and improved to enhance the standard of living of the people in the rural system.

6.6 Mineral Resources

Mineral resource based industries can be planned by using the available mineral resources.

6.7 Water Resources

Water resources are becoming scarce in these days because of over exploitation and absence of recharging, pollution, etc. Hence, this resource needs more and more attention.

All these natural resources, viz. Land, population, forests, water resources, livestock, horticulture, etc. in connection with crop production have been studied in detail and presented in table 6.1:

Table 6.1: **Available Resources in Gara Mandal:**

S.NO.	DESCRIPTION	QUANTITY
1	Population	68664
1.1	Male	34062
1.2	Female	34602
1.3	Total main workers	28927
1.4	Non workers	35758
2	Total quantity of land	15653 Ha
2.1	Barren and uncultivated land	1096 Ha
2.2	Current fallows	176 Ha
3	Forest	1060 Ha
4	Water availability	
	- area under irrigation	6634 Ha
5	Number of tanks and ponds	73
6	Livestock	62508
7	Rainfall	1251.1 mm
8	Horticulture	112 Ha
9	Roads	112.9 km

(Source: Data collected from District Statistical Hand Book - 1994-95)

The table 6.1 explains that total availability of human resource is 68664. Of which, male and female population share almost equal in size. The total availability of land is 15653 hectares, which is accounted as 0.228 hectare per capita, which is much less than the state average of 0.413 hectare per capita. Total main workers are 34609 (42.1 percent), while the non-workers represent 52.07 percent, which is much higher than the working population. The coverage of forest in the Mandal is 1060 hectares i.e. 6.8percent, which is far less than the total coverage of the country i.e., 19.7%. The area under irrigation is only 42.38 percent of the total area, which is also very less compared to other mandals which are in neighbouring district. Available number of ponds and tanks are 73, but the area of the ponds and tanks are shrinking to the considerable quantity due to encroachments. As a result, the water catchment in these ponds and tanks is becoming very less, which lead to scarcity of water for agriculture and the allied activities. The available number of livestock is only 62508. The very careful analysis found that number of livestock availability is also in decreasing trend. It has 113 km road networks, which is very much used for resource mobilization. In rainfall, the Mandal is blessed by good quantity of rainfall i.e., 1251 mm per year. Unfortunately, this rain is confined in very short duration i.e., four months (June, July, August, September). Since the proper mechanism is not available to store the rainwater, the Mandal faces acute water scarcity during the summer season.

Since the unemployment is rampant (non-workers) in the Mandal, and the per capita land availability is also very less, the authorities should

implement several welfare and land development measures where the unemployed people will be made use off.

Chapter 7

Forecasting the Demand of Facilities for the Year 2021

7.1 Introduction

It deals with forecasting of the facilities required for the year 2021. At the outset, population will be projected for the year 2021 using suitable statistical methods. Depending on increase in population, extra facilities, which requires will be calculated by using suitable planning standards.

The real value of the analysis (that was done in the chapter 5) is that with a better understanding of past behaviour, one can often make good projections or forecasting for the future. By using the knowledge that one can understand about the trend, cyclical and seasonal components of the time series, can develop forecasts that will provide helpful planning and decision-making information.

Forecasts for 1 year or less are considered as short term or short-range forecasts. Forecasts of 5 years, 10 years or more are considered as long term or long-range forecasts. One cannot guarantee that the trend will continue in the future exactly it has in the past. If major technological breakthroughs or competitor actions significantly differ from past conditions, then the forecasts may need to be modified. However, if no major changes occur, projections of past trend patterns can prove extremely helpful in forecasting future values of the time series.

The important control parameters, which decides functions of the system, considered for projections are:

a) Population

b) Agriculture and Allied Activities

c) Housing

d) Health and Sanitation

e) Power

f) Education

g) Water Supply

h) Forests

7.2 Forecasting the facilities for the year 2021 (for the Mandal)**:**

Forecasting is one of the most important aspects in undertaking planning studies. There are few methods available for forecasting such as, geometric increment method, regression method, arithmetic increment method, incremental increase method, logistic curve method, etc. in this present investigation, population is considered as the focal point. Considering the population other requirements are calculated by employing relevant standards, which have been set for different variables by different concerned organizations. To project the population availability for the year 2021, geometric increment method was employed by considering the population increment from 1981 census to 1991 census. The method, which is followed, for population calculation for the study is as follows:

1. Population

Total population in the year 1981 = 56855

Total population in the year 1991 = 68664

Using Geometric Increment Method,

$$P_n = P_0(1+r)^n$$

Where P_n = Forecasted population of n years

P_0 = Population at present

n = number of years

r = rate of growth

To find r,

$$P_{1991} = P_{1981}(1+r)^{10}$$

$$\Rightarrow 68664 = 56855(1+r)^{10}$$

$$1+r = \left(\frac{68664}{56855}\right)^{1/10}$$

$\therefore$ r = 1.019 – 1

= 0.019

$\therefore$ Total population in the year 2021 is

$$P_{2021} = P_{1991}(1+0.019)^{30}$$

$$= 68664(1+0.019)^{30}$$

= 1,20,769

$\therefore$ Increase in population = 1,20,769 – 68,664

= 52,105

2. Housing

Requirement of housing for the year 2021 in the study area is calculated as follows:

Population to be considered for construction of houses = 52,105

Considering a general family size of 5,

Number of houses required = $\frac{52,105}{5}$ = 10,421

To this number, no. of kutcha and semi-pucca houses can be added to find out the total no. of houses required, since they are not the permanent in nature.

3. Drinking Water Supply

Drinking water supply is one of the most important parameter, which needs more and more attention now a days, since ecological imbalances, environmental crisis are very much phenomenal in our country. Though these problems are very much aggravated mostly in the urban system, it has been started to penetrate in the rural system. In this situation adequate safe drinking water supply is very much essential to sustain the rural system. To calculate the demand of the quantity of drinking water, the Ministry of Rural Development, Government of India's norms have been followed:

- 40 liters of safe drinking water per capita per day (lpcd) for human beings.
- 30 lpcd additionally for cattle in the Desert Development Program (DDP) areas.
- One hand pump or stand post for every 250 persons.
- The water source should exist within the habitation within a distance of 1.6 km in plains and within 100 meters elevation difference in the hills.
- Drinking water is defined as safe if it is free from biological contamination and chemical contamination.

In the investigation the same 40 lpcd for man has been considered for per bovine population.

∴ Quantity of drinking water required for population = 40 × 52105 liters

= 2084200 liters

= 2.0842 ML

Quantity of water required for livestock = 40 X 21264

= 850560 liters

= 0.8505 ML

Total quantity of water required = (2.0842 + 0.8505) ML

= 2.9347 ML

(or)

The total number of hand pumps required in the study area = $\frac{52105}{250}$

= 209

Along with this the villages in which water scarcity is there can be considered.

4. Power

The existing total number of houses = 14,865

The number of houses in which service connections are available = 6273

The present shortage = 14865 – 6273

= 8592

Connections required for the future = number of houses required

= 10,421

∴Total number of service connections required = 10,421 + 8592

= 19013

5. Health and Sanitation

As per the standards of the Government of India, the following Health facilities are required:

- Community Health Center – for a population of 80,000 to 1.20 lakh
- Primary Health Center – for a population of 30,000 in plains and 20,000 in tribal and difficult terrain areas
- Sub-Center – for a population of 5,000 in plains and 3,000 in hilly and tribal areas

The total population by the year 2021 = 1,20,769

Number of Community Health Centers required = $\frac{1,20,769}{1,20,000} = 1$

Number of Primary Health Centers required = $\frac{1,20,769}{30,000} = 4$

Number of Sub-Centers required = $\frac{1,20,769}{5000} = 24$

The health facilities required to be provided by considering the existing facilities are 1 Community Health Center, 2 Primary Health Centers and 17 Sub-Centers.

6. Forestry

The forest cover required for an area is $33\frac{1}{3}\%$ of the total geographical area. Considering, at least, the national percentage, i.e. 20 percent, of area under forest cover,

The total land required under forest cover = 15653×0.20

= 3131 Ha.

Present available forest cover = 1060 Ha

∴ Area to be increased = 3131 – 1060

=2071 Ha.

7. Agriculture

Assuming the food requirement of 300kg, a person a year,

Total food grains required for the population = $300 \times 1,20,769$

= 3,62,30,700 kg per year

Present out put from the crops = 2,63,93,326 kg per year

Shortage of food grains = 3,62,30,700 - 2,63,93,326

= 98,37,374 kg per year

8. Livestock

By considering an amount of 250 ml of milk per capita for a healthy family,

The quantity of milk required would be = 0.25 × 1,20,769

= 30193 liters per day

= 30193 × 365 liters per year

= 1,10,20,445 lit/year

= 11.02 ML/year

The quantity of milk available at present = 52924 lit/year

Shortage of milk = 1,10,20,445 – 52924

= 1,09,67,521 lit/year

= 10.96 ML/year

9. Education

Increase in population = 52105.

Age Group	Percent of Population	Population	% Of Enrolment Expected	School Going Population
6 – 11	14.0	7295	95.0	6930
11 – 14	10.9	5680	40.0	2272
14 - 18	9.5	4950	36.0	1782

Type	Allowed Strength	Numbers Required
Primary	500	14
Upper primary	700	4
High school	1000	2

7.3 **Forecasting the facilities for the year 2021** (for Nizambad Village):

1. Population

Total population in the year 1981 = 920

Total population in the year 1991 = 1224

Using Geometric Increment method,

$$P_n = P_0(1+r)^n$$

Where, P_n = Forecasted population of n years

P_o = population at present

n = number of years.

r = growth rate.

To find r,

$$P_{1991} = P_{1981}(1+r)^{10}$$

$$1224 = 920(1+r)^{10}$$

$$1+r = (1224/920)^{1/10}$$

$$r = (1.028 - 1)$$

$$= 0.028$$

Total population in the year 2021 is $P_{2021} = P_{1991}\ (1+0.028)^{30}$

$$= 1224(1+0.028)^{30}$$

$$= 2803$$

Increase in population = 2803 – 1224

= 1579

2. Housing

Population to be considered for construction of houses = 1579

Considering a general family size of 5,

Number of houses required = 1579/5 = 316

To this number, number of kutcha and semi-pucca houses can be added to find out the total number of houses required.

3. Water Supply

The Ministry of Rural Development, Government of India, is following the following norms for providing drinking water to villages:

- 40 liters of safe drinking water per capita per day (lpcd) for human beings.
- 30 lpcd additionally for cattle in the Desert Development Program (DDP) areas.
- One hand pump or stand post for every 250 persons.
- The water source should exist within the habitation within a distance of 1.6 km in plains and within 100 meters elevation difference in the hills.
- Drinking water is defined as safe if it is free from biological contamination and chemical contamination.

Total quantity of drinking water required = 40 x 1579 liters

= 63160 liters

= 0.06316 ML

(OR)

The total number of hand pumps required
in the study area = 1579/250 =7

Along with this the villages in which water scarcity is there can be considered.

4. Power

Household service connections required for the future = Number of houses required = 316

Therefore, the total number of service connections required = 316 + present shortage.

5. Health and Sanitation

As per the standards of Indian Government, the following health facilities are required.

Community center for a population of 80,000 to 1.2 lakh.

Primary Health Center for a population of 30000 in plains and 20000 in tribal and difficult terrain areas.

Sub-Center for a population of 5000 in plains and 3000 in hilly and tribal areas.

The total population by the year 2021 = 2803.

Number of Sub-centers required = 2803/5000 = 0.56

Keeping in view of the existing health facilities, one Sub-Center can be provided.

6. Different Farm Sizes Composition

Large = 10%

Medium = 20%

Small and Marginal = 70%

Chapter 8

Recommendations and Plan Formulation for Sustainable Development

8.1 Recommendations

The following recommendations are suggested to have sustainable development in the Gara Mandal:

1. The efforts of the government for education should be continued and measures should be taken to improve secondary education and vocational training. Educating people and creating awareness will bring a change and lead for sustainable development.
2. It is very much necessary to adopt high yielding varieties and advanced farm technologies to increase the productivity at the farm level, which will result in improving the economic conditions of the farmers, on one hand, and will reduce the gap between the demand and supply of food grains on the other.
3. Apiculture is another area, which will give more income with fewer efforts. This is nowhere practiced in the study area. Women can be engaged in this activity since the technology involved is very simple, and the labour input is also very less.
4. An efficient transmission system is necessary to ensure farmers with good quality of power, as most of them are dependent on tube wells.
5. Proper and appropriate administrative mechanism is absolutely essential at the grassroots level for systematic development. A plausible

administrative and program implementing method is evolved and shown in fig 8.2 for achieving the desired objectives.

6. Growth of population must be controlled by effective implementation of family planning programs. For this, medical camps, educative films based on family planning, etc. should be conducted in the villages on a regular basis. During these camps people should be explained about the problems, and prospects of having large family.
7. Educational system should be modified in such a way that it will be productive. A vocational training center can be started at the Mandal headquarters to train the educated unemployed youth. They can earn their livelihood by attending the problems in the study area.
8. Adult education should be given more importance. The education should be in such a way that people will take care of the development activities and natural resources. It should also provide them the necessary awareness to elect the righteous person as their village head.
9. Provide agricultural information to the adults along with education.
10. During adult education program people must be informed of the different government programs, their guidelines and benefits they can avail from these programs.
11. Adequate library facilities should be provided in the Mandal, at least, in all the high schools, to provide people with latest information.
12. The productivity of agricultural crops can be increased as follows:
    a) Make a group of educated unemployed people at the Mandal level from different panchayats under the Mandal, train them, by explaining advanced methods of cultivation and irrigation, new

variety of crops, soil erosion control methods, inter crop cultivation methods, etc. and their advantages.

b) The government shall have a model agricultural experiment station, where the people can go, and acquire knowledge about adoption of new technologies, etc. at the farm level.

13. Farmers should leave their fields empty for one crop season (summer) so that the soil can regains its fertility.
14. Conservation measures should be adopted to improve the quality and fertility of soil. Excess use of pesticides and chemical fertilizers should be strictly prohibited. Adequate quantity of Farm Yard Manure (FYM) should be added to the fields to improve the fertility.
15. More trees can be planted to control soil erosion and have good vegetation.
16. To improve the quantity of water resources for irrigation in the study area, the following measures can be considered:
    a) Participatory cleaning of ponds and other water bodies by people.
    b) Clearing of natural drainage paths leading to ponds and others without any obstructions.
    c) Other repairing works to avoid leakage of water in the ponds, canals, etc.
    d) Wastelands can be developed by using watershed management methods.
17. Public market yard shall be constructed in the Mandal headquarter to provide market facility to farmers in an appropriate place.
18. Hybrid quality of cows, buffaloes, etc. shall be introduced to improve the economy in the rural system.

19. To provide permanent houses to all whose house is under dilapidated conditions, emphasis should be given to low cost housing technology with the locally available materials. For this purpose, people can be trained in the Nirmitha Kendra, a center, established to popularize low cost building technologies, up gradation of local skills and manufacturing of low cost materials, which is at a distance of 9 km. from the district headquarters.
20. The existing housing conditions should be improved by providing proper accessibility.
21. Necessary health facilities should be provided in the villages. Location of sub-centers should be in such a way that a group of villages will have good access to it.
22. Sewage drains can be constructed by using cheaply available local materials like bricks. Soaking pits can be provided to a group of houses together to divert the wastewater.
23. All the villages should be connected well with the access roads.
24. Adequate number of wells or hand pumps shall be provided/constructed in the villages. Ground water recharging measures can be under taken through rainwater harvesting. So that ground water table will be at a considerable depth during the summer season.
25. The surroundings of existing wells in different villages should be cleaned and provided with permanent pavement around the well.
26. The administrative people shall not have the fragmented approach in implementing any development program. At the outset, they should study the existing conditions, the related effects of the program and its sustainability. People's suggestions shall also be considered.

27. Administration should see, by visiting the corresponding villages, whether the funds given are reached the real beneficiaries or not.
28. Training to the rural youth shall be imparted in the system in accordance with need and demand.
29. Need based, resource based, and demand based rural industries shall be setup in the study area, which will pave the way for steady economic growth, minimize unemployment, increase the standard of living, etc.
30. Peoples planning process shall be introduced in line with Kerala model of local development for achieving sustainable development at the grass root level along with social system.

8.2 Plan Formulation

Two types of planning models have been prepared, such as, physical planning model and socio-economic development planning model.

a) The physical planning model is prepared by using or employing planning design concept for developing a model village.
b) Flow model is prepared by considering socio-economic parameters.

8.3 Evolving a Model Village Plan for Sustainable Development

A model village plan (physical plan) is prepared to have sustainable development in the give rural system. A revenue village (Nizambad) is considered for the purpose, and projections are made for the year 2021. The following parameters, such as, population, households, water supply, health, electricity, education, etc. are considered. It has been decided to have the following facilities for the population of 1579 for having sustainable development. They are:

Total population = 1579

Number of houses required for them = 316

Number of hand pumps required for drinking water supply = 7

These hand pumps are well distributed through the entire village.

Health centers (sub-center) required = 1

One more primary school is provided keeping in view of the population growth. The location of the school is in such a way that it have least disturbances from other activities, which prevail in the village.

A temple is provided for cultural gatherings.

Agriculture based industries like rice mill are provided. A rice mill can be easily sustainable by the surrounding agricultural activities. Hence a rice mill is suggested.

A common biogas plant is recommended for the entire village so that the dung produced by the livestock can be effectively utilized; in turn this will solve the cooking energy problem.

Vocational Training: A group of youth who have vocational training, can maintain a repair shop in the village. Farmers will approach this shop for repairing their agriculture implements.

A bank extension counter with minimum officials is provided so that the villages can have information regarding funds and loans, which are available to them. This also encourages effective utilization of banks, and savings in the system.

Other facilities like community center, fertilizer shop, milk collecting center, etc. is also provided.

A model village plan is presented in figure 8.1 followed by the Flow Model (Fig. 8.2) to achieve sustainable development in the rural system.

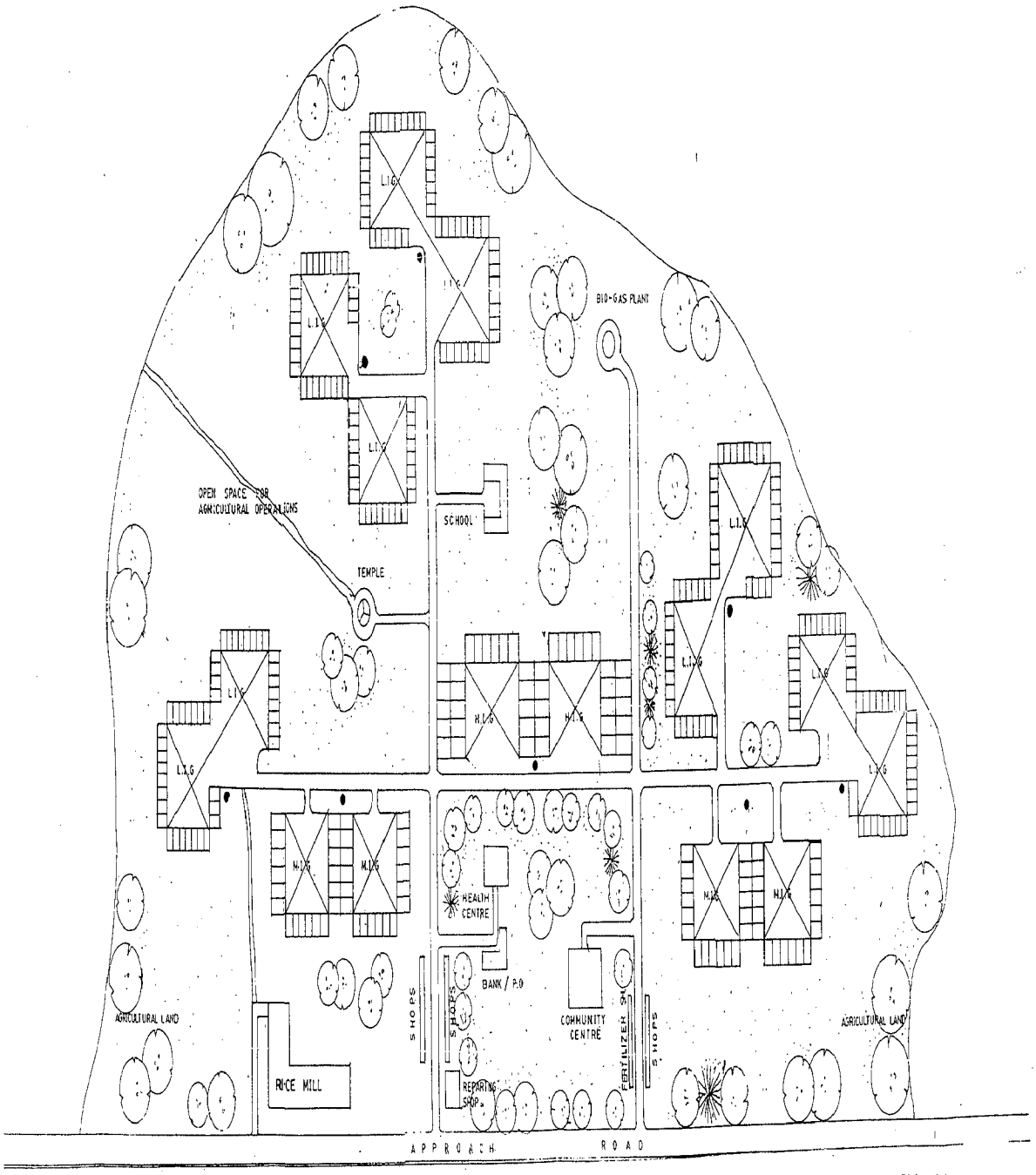

FIG-8.1
SCALE 1:2500

* HAND PLAN

A MODEL VILLAGE PLAN FOR SUSTAINABLE DEVELOPMENT

BY:
K. SREE RAMA MURTY
M.U.R.P. II YEAR
DEPT. OF ARCH. & PLANNING
UNIVERSITY OF ROORKEE
ROORKEE.

8.4. Implementing Mechanism

The necessary implementing mechanism to have sustainable development is presented in the following flow chart:

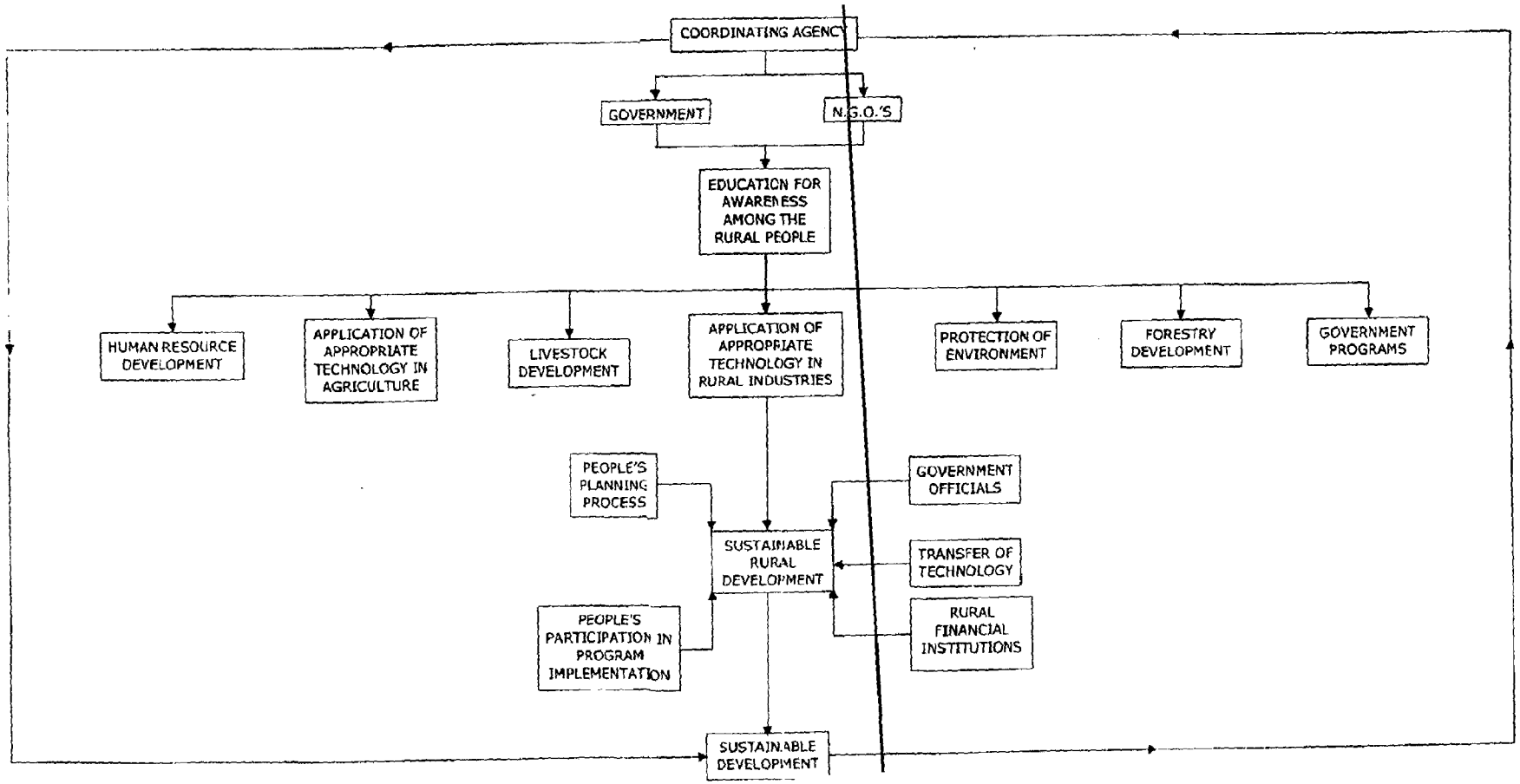

FIG 8.1: Flow Model For Sustainable Rural Development

8.5. Conclusions

The study aims at to prepare a set of plausible guidelines to have sustainable development in the study area. Required literatures have been surveyed, and required datum is collected at the grassroots level by using pretested schedule and questionnaire for the investigation. Optimal statistical tools and techniques are used for processing the data. Plausible analysis is carried out, and the results are discussed to arrive at inferences. Plausible recommendations are made on the basis of inferences of the study to have sustainable development. A physical model plan is evolved for the study area along with the plausible recommendations to develop the area. The investigator feels that if the evolved model physical plan and the recommendations made in the study are implemented there is vast scope for sustainable development in the rural system.

LIST OF THE VARIABLES

1. NAME OF THE VILLAGE

   1) AMBATIVANIPETA 2) SALIHUNDAM 3) NIZAMBAD

2. OCCUPATION OF THE HEAD OF THE HOUSEHOLD

   1) FARMER 2) DAILY WAGER 3) BUSINESS 4) SERVICE 5) BOTH 1 AND 2

3. RELIGION

   1) HINDU 2) CHRISTIAN 3) MUSLIM 4) OTHERS

4. CASTE

   1) OC 2) BC 3) SC 4) ST

5. TOTAL NO. OF PEOPLE IN THE HOUSE

6. NO. OF MALES

7. NO. OF FEMALES

8. NO. OF ADULTS

9. NO. OF CHILDREN

10. TOTAL LAND HOLDING IN ACRES

11. LOW LEVEL AREA IN ACRES

12. HIGH LEVEL AREA IN ACRES

13. TERRAIN OF THE AREA

    1) FLAT2) ROLLING3) SLOPE4) HILLY5) BOTH 1 AND 3

14. TYPE OF THE SOIL

    1) BLACK SOIL2) RES SOIL3) SANDY SOIL4) BOTH 1 AND 3

15. FERTILITY OF THE SOIL

    1) GOOD2) MEDIUM3) LOW

16. ANY INTER CROPPING OR MIXED CROPPING SYSTEM

1) YES2) NO

17. AREA UNDER PADDY CROP IN KHARIF SEASON IN ACRES
18. YEILD OF PADDY IN KHARIF SEASON (BAGS/ACRE)
19. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
20. TOTAL EXPENDITURE IN RS. /ACRE
21. TOTAL PROFIT IN RS. /ACRE
22. AREA UNDER PADDY CROP IN RABI SEASON IN ACRES
23. YEILD OF PADDY IN RABI SEASON (BAGS/ACRE)
24. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
25. TOTAL EXPENDITURE IN RS. /ACRE
26. TOTAL PROFIT IN RS. /ACRE
27. AREA UNDER PADDY CROP IN SUMMER SEASON IN ACRES
28. YEILD OF PADDY IN SUMMER SEASON (BAGS/ACRE)
29. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
30. TOTAL EXPENDITURE IN RS. /ACRE
31. TOTAL PROFIT IN RS. /ACRE
32. AREA UNDER BLACK GRAM CROP IN SUMMER SEASON IN ACRES
33. YEILD OF BLACK GRAM IN SUMMER SEASON (BAGS/ACRE)
34. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
35. TOTAL EXPENDITURE IN RS. /ACRE
36. TOTAL PROFIT IN RS. /ACRE
37. AREA UNDER GREEN GRAM CROP IN SUMMER SEASON IN ACRES
38. YEILD OF GREEN GRAM IN SUMMER SEASON (BAGS/ACRE)
39. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
40. TOTAL EXPENDITURE IN RS. /ACRE
41. TOTAL PROFIT IN RS. /ACRE

42. AREA UNDER RAGI CROP IN SUMMER SEASON IN ACRES
43. YEILD OF RAGI IN SUMMER SEASON (BAGS/ACRE)
44. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
45. TOTAL EXPENDITURE IN RS. /ACRE
46. TOTAL PROFIT IN RS. /ACRE
47. AREA UNDER GROUND NUT CROP IN SUMMER SEASON IN ACRES
48. YEILD OF GROUND NUT IN SUMMER SEASON (BAGS/ACRE)
49. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
50. TOTAL EXPENDITURE IN RS. /ACRE
51. TOTAL PROFIT IN RS. /ACRE
52. AREA UNDER SUGARCANE CROP IN ACRES
53. YEILD OF SUGARCANE IN TONNES/ACRE
54. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
55. TOTAL EXPENDITURE IN RS. /ACRE
56. TOTAL PROFIT IN RS. /ACRE
57. AREA UNDER MIRCHI CROP IN RABI SEASON IN ACRES
58. YEILD OF MIRCHI IN RABI SEASON (BAGS/ACRE)
59. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
60. TOTAL EXPENDITURE IN RS. /ACRE
61. TOTAL PROFIT IN RS. /ACRE
62. AREA UNDER MIRCHI CROP IN SUMMER SEASON IN ACRES
63. YEILD OF MIRCHI IN SUMMER SEASON (BAGS/ACRE)
64. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
65. TOTAL EXPENDITURE IN RS. /ACRE
66. TOTAL PROFIT IN RS. /ACRE
67. AREA UNDER MESTA CROP IN KHARIF SEASON IN ACRES

68. YEILD OF MESTA IN KHARIF SEASON (BAGS/ACRE)
69. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
70. TOTAL EXPENDITURE IN RS. /ACRE
71. TOTAL PROFIT IN RS. /ACRE
72. AREA UNDER SESAMUM CROP IN KHARIF SEASON IN ACRES
73. YEILD OF SESAMUM IN KHARIF SEASON (BAGS/ACRE)
74. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
75. TOTAL EXPENDITURE IN RS. /ACRE
76. TOTAL PROFIT IN RS. /ACRE
77. AREA UNDER SESAMUM CROP IN RABI SEASON IN ACRES
78. YEILD OF SESAMUM IN RABI SEASON (BAGS/ACRE)
79. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
80. TOTAL EXPENDITURE IN RS. /ACRE
81. TOTAL PROFIT IN RS. /ACRE
82. AREA UNDER SESAMUM CROP IN SUMMER SEASON IN ACRES
83. YEILD OF SESAMUM IN SUMMER SEASON (BAGS/ACRE)
84. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
85. TOTAL EXPENDITURE IN RS. /ACRE
86. TOTAL PROFIT IN RS. /ACRE
87. AREA UNDER BAJRA CROP IN KHARIF SEASON IN ACRES
88. YEILD OF BAJRA IN KHARIF SEASON (BAGS/ACRE)
89. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)
90. TOTAL EXPENDITURE IN RS. /ACRE
91. TOTAL PROFIT IN RS. /ACRE
92. AREA UNDER BAJRA CROP IN SUMMER SEASON IN ACRES
93. YEILD OF BAJRA IN SUMMER SEASON (BAGS/ACRE)

94. TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)

95. TOTAL EXPENDITURE IN RS. /ACRE

96. TOTAL PROFIT IN RS. /ACRE

97. - PREDOMINANT METHOD BY WHICH FARMERS SELL OR MARKET AGRICULTURAL PRODUCTS

1) SELLING TO THE OTHER HOUSEHOLDS IN THE VILLLAGE

2) SELLING TO THE VILLAGE SHOPKEEPERS

3) SELLING TO THE VILLAGE COOPERATIVES

4) SELLING OUTSIDE THE VILLAGE IN THE VILLAGE MARKET

5) SELLING OUTSIDE THE VILLAGE IN A NEAR BY TOWN

98. VEGETABLES GROWN USED FOR

1) PERSONAL CONSUMPTION2) SELLING3) BOTH

99. NO. OF HOURS OF ELECTRICITY SUPPLY TO AGRICULTURE

100. CHARGES OF ELECTRICITY FOR AGRICULTURE IN RS.

101. CHARGES OF IRRIGATION WATER IN RS. /YEAR

102. NO. OF COWS

103. NO. OF BUFFALOES

104. NO. OF OX

105. AMOUNT OF MILK PRODUCED IN LITERS/DAY

106. MILK USED FOR

1) PERSONAL CONSUMPTION2) DAIRYING3) BOTH

107. DUNG USED FOR

1) COOKING2) COMPOST3) BOTH

108. EXPENDITURE ON CATTLE PER MONTH IN RS.

109. DISTANCE THEY ARE TRAVELLING TO AVAIL VETARINARY FACILITIES

110. HORTICULTURE PRACTICE IS THERE?

1) YES2) NO

111. AREA OF CROP CULTIVATED IF YES IN ACRES

112. APICULTURE IS THERE?

1) YES2) NO

113. NO. OF CHIKS IN THE HOUSE

114. EGGS PRODUCED IN QUANTITY (NO./MONTH)

115. EGGS PRODUCED USED FOR

1) PERSONAL CONSUMPTION2) SELLING3) BOTH

116. COST OF FEEDING PER CHICK PER MONTH IN RS.

117. SOURCE OF WATER FOR CULTIVATION

1) CANALS2) PONDS3) TANKS4) SURFACE WELLS5) TUBE WELLS6) OTHER SOURCES7) CANAL AND TUBE WELLS8) PONDS AND TUBE WELLS9) TUBE WELLS, CANAL AND PONDS10) CANAL AND PONDS

118. METHOD OF APPLYING WATER TO THE CROPS

1) FLOODING2) BOARDER STRIP METHOD3) DRIP IRRIGATION4) BASIN METHOD5) FLOODING AND BASIN6) BOARDER STRIP AND FLOODING

119. ANY WATERSHED DEVELOPMENT PROGRAM IS THERE?

1) YES2) NO

120. IF YES PEOPLE PARTICIPATED OR NOT?

1) PARTICIPATED2) NOT PARTICIPATED

121. ANY OTHER PROGRAMS TAKING PLACE ALONG WITH WATERSHED DEVELOPMENT PROGRAM?

1) YES2) NO

122. IMPROVEMENT AFTER IMPLEMENTATION OF THE PROGRAM

1) GOOD2) AVERAGE3) LOW

123. SOIL EROSION CONTROL METHODS ARE USING OR NOT?

1) YES2) NO

124. FERTILITY INCREMENT MEASURES

1) COMPOST2) SHEEP GROUPS3) BOTH4) NO

125. TYPE OF ROAD SYSTEM IN THE VILLAGE

1) GRID IRON2) CIRCULAR3) IRREGULAR

126. MEANS OF THE ACCESS TO THE VILLAGE BY

1) PUCCA ROAD2) KUTCHA ROAD3) FOOT PATH

127. DISTANCE OF THE VILLAGE FROM THE MAIN HIGHWAY IN KM

128. DISTANCE OF NEAREST BUS STOP IN KM

129. NO OF TRACTORS IN THE HOUSE

130. NO OF BULLOCK CARTS IN THE HOUSE

131. NO OF MOTOR CYCLES IN THE HOUSE

132. NO OF CYCLES IN THE HOUSE

133. CONNECTION OF THE VILLAGE TO THE NEIGHBOURING VILLAGES

1) BY ROAD2) BY FOOT PATH

134. DISTANCE TO NEAREST POST OFFICE IN KM

135. DISTANCE TO NEAREST TELEGRAPH OIFFICE IN KM

136. DISTANCE TO BE TRAVELLED FOR TELEPHONE FACILITY IN KM

137. AVAILABILITY OF POWER CONNECTION

1) YES2) NO

138. QUALITY OF VOLTAGE SUPPLY

1) GOOD2) BAD

139. NO. OF HOURS OF POWER SUPPLY

140. SOURCE OF DRINKING WATER

1) RIVER2) WELL3) HAND PUMP4) POND5) BORE WELL6) WATER SUPPLY7) OTHERS

141. DISTANCE THEY ARE TRAVELLING TO GET WATER IN KM

142. REGULATED WATER SUPPLY

1) YES2) NO

143. AVAILABILITY OF COMMUNITY TAPS

1) YES2) NO

144. DISTANCE THEY HAVE TO TRAVELL TO AVAIL MEDICAL FACILITY IN KM

145. FACILITY PROVIDED BY

1) GOVT2) PRIVATE

146. TYPE OF FACILITY AVAILABLE

1) DISPENSARY2) PHC3) CLINIC4) AYURVEDIC5) ALLOPATHY6) HOMEOPATHY

147. EXISTENCE OF PUBLIC LATRINES

1) YES2) NO

148. EXISTENCE OF DRAINAGE SYSTEM

1) YES2) NO

149. DISTANCE OF NEAREST BANK IN KM

150. TYPE OF BANK

1) COOPERATIVE2) COMMERCIAL3) BOTH

151. MONEY IF NECESSARY WILL BE TAKEN FROM

1) BANK2) SHOPKEEPERS3) OTHERS4) BOTH 1 AND 2

152. ANY EXTENSION FACILITIES ARE THERE IN THE VILLAGE?

1) YES2) NO3) THEY'RE BUT NOT FUNCTIONING

153. NO. OF PEOPLE STUDIED/STUDYING UPTO 5TH CLASS

154. NO. OF PEOPLE STUDIED/STUDYING HIGH SCHOOL

155. NO. OF PEOPLE STUDIED/STUDYING INTERMEDIATE

156. NO. OF PEOPLE STUDIED/STUDYING GRADUATION

157. NO. OF PEOPLE STUDIED/STUDYING TECHNICAL EDUCATION

158. DISTANCE OF THE PRIMARY SCHOOL FROM THE VILLAGE IN KM

159. DISTANCE OF SECONDARY SHOOL FROM THE VILLAGE

160. DISTANCE OF HIGH SCOOL FROM THE VILLAGE

161. REASONS FOR DROPOUTS

1) POVERTY2) PERSONAL PROBLEMS3) NEGLIGENCE

162. ANY ADULT EDUCATION FACILITIES ARE THERE?

1) YES2) NO3) YES BUT NOT FUNCTIONING

163. ANY LIBRARY FACILITIES ARE THERE

1) YES2) NO

164. ANY VOCATIONAL EDUCATION FACILITIES ARE THERE?

1) YES2) NO

~~165. TYPE OF HOUSE~~

1) PUCCA2) SEMI-PUCCA3) KUTCHA

166. TYPE OF THE HOUSING SCHEME

1) COOPERATIVE2) MASS3) GOVT. SCHEMES FOR INDVIDUALS4) OWN

167. DWCRA PROGRAM IS THERE?

1) YES2) NO

168. NO. OF PEOPLE INVOLVED

169. TYPE OF INDUSTRY

1) RESOURCE BASED2) DEMAND BASED3) NEED BASED

170. INDUSTRY OWNED BY

1) PRIVATE2) COOPERATIVE3) GOVT.

171. LOCATION OF INDUSTRY

1) GOOD2) BAD

172. MARKETING FACILITIES

1) GOOD2) BAD

173. TYPE OF ENERGY USED

1) ELE, FUEL WOOD, KEROSINE, DESIEL2) ELE, FUEL WOOD, KEROSINE, COWDUNG3) ELE, LPG, FUEL WOOD, KEROSINE4) ELE, FUEL WOOD, KEROSINE5) ELE, LPG, COWDUNG, KEROSINE6) ELE, LPG, COWDUNG, KEROSINE, DESIEL, FUEL WOOD7) FUEL WOOD, KEROSINE, COWDUNG

174. TYPE OF COOPERATIVES PRESENT

1) AGRICULTURE2) DAIRYING3) WEAVING

175. FINANCE FACILITIES PROVIDED BY

1) GOVT2) BANK

176. ANNUAL INCOME IN RS.

177. ANNUAL EXPENDITURE IN RS.

178. HOUSEHOLD EXPENDITURE IN RS. PER MONTH

179. EDUCATIONAL EXPENDITURE IN RS. PER MONTH

180. RECREATIONAL EXPENDITURE IN RS. PER MONTH

181. DEBT IN RS.

182. SAVINGS IN RS. PER MONTH

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agriculture and rural development. The National Bank for Agriculture and Rural Development provides credit to rural sector through cooperative banks, commercial banks, regional rural banks and other financial institutions set up to finance rural development. The bank ensures coordination in operations of various institutions engaged in the field of rural credit. During 1997-98 (July-March) National Bank for Agriculture and Rural Development sanctioned short-term credit limits aggregating to Rs. 5,169 crores to the state cooperative banks (No. 5).

❖ Regional Rural Banks

With a view to improving the flow of credit to the rural sector of the economy, a number of Regional Rural Banks have been setup in the areas where commercial and cooperative banking facilities have been lacking. These banks cater to the credit requirements of the weaker sections, small and marginal farmers, landless labourers, village artisans and petty businessmen in the rural areas. In all, there are 196 regional rural banks with their 14,475 branches, covering 427 districts in 23 states with a mobilized deposit to the tune of Rs. 22,198 crores and the credit support provided by these banks amounted to Rs. 9,876 crores at the end of March, 1998 (No. 5).

❖ Agricultural Credit Cooperative Societies

Cooperative credit societies entered the field of rural finance with the adoption of the Cooperative Societies Act of 1904. Since then, the government has been making deliberate attempts to nurture the cooperative movement in the country in the larger interests of the rural people. Cooperative organizations have been recognized as the best institutions to provide rural credit to the farmer because they satisfy all the important criteria of sound agricultural credit. The cooperative organization satisfies the basic condition of proximity, as the

cooperative societies are able to have more 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 the cooperative 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; it is also safe as it assists and does not hamper the borrowers' stability and productive capacity.

❖ National Banks

The share of commercial banks in direct agricultural advances went up from 1.3 percent of bank credit in July 1969 to 13.2 percent in March 1984. At the end of March 1980, their share in the total direct institutional finance for agriculture was 34 percent.

In the years to come, the Indian banking system has a strategic role to play in increasing the national savings rate, in canalizing the available savings to finance high priority investments, in better utilization of available capacities both in agriculture and in industry through adequate supply of credit as working capital, and in promoting the cause of social justice by increased emphasis on the credit needs of the hitherto neglected sectors and sections of population as also by providing finance for such anti-poverty programs as the Integrated Rural Development Program.

2.15 Tourism

Tourism creates a host of multifarious downstream activities, which have the capacity to substantially involve a large number of people. Apart from generating income, being a labour intensive sector, it generates employment – mostly self-employment and promotes overall development (No. 19).

Strategies for rural tourism will vary according to sites. A broad range can be identified: identifying the location, measuring the potential, restoring Eco-friendly environment, building social infrastructure - a canteen, an open-air theatre, display facilities for local crafts, such as, village hats and so on, integrating rural tourism with the rural setup and not disturbing it, identifying planning parameters, such as, number of tourists, type of tourists, facilities like lounge, resting place, dining area, community hall and so on (No. 19).

Keeping the above in mind, villages could be selected for promoting tourism. Some of the criteria are: connectivity, distance from the metropolises and religious sites, accessibility and hospitality of host community, inherent rural character and ambience, carrying capacity, presence of village industry sector ~~and so on.~~

On the benefits side, village tourism leads to creation of new jobs, leveling of social differences, change in hierarchical structure, new opportunities for peripheral area, and inter cultural communication and increased income for locals. Against this are the perceived threats in case of village tourism; (a) displacement of traditional jobs - in rural tourism it is not entirely true as the tourists seek traditional products and services and therefore traditional jobs are not going to be threatened; (b) loss of moral values - this depends on the structure and strengths of a particular society. Indian society is unique in reconciling modernity and tradition; (c) foreign infiltration - this has to be checked by informally screening and regulating the traffic of foreign tourists by the village leadership and other agencies involved in it; (d) competition and envy between locals - this again can be tackled by a fair distribution of supply of services and setting up mechanism to ensure it (No. 19).

2.16 Enumeration of case studies

I) **Title:** Monitoring of Integrated Rural Development Program: A study in Wardhannapet block, Warangal District, Andhra Pradesh (No. 12).

Objectives of the study

1) To study the effectiveness of existing monitoring mechanisms in Integrated Rural Development Program, and
2) To study the possibility of unique scientific sampling procedures in monitoring at different levels.

Concept:

The concept of monitoring was used in the study. Monitoring is basically a management activity concerned with the implementation part of a project." It is a facilitating activity, a service function directed to ensuring project performance by assuring if everything is proceeding as planned within the time and cost constants". It provides warning signals so that the management can take remedial action in good time.

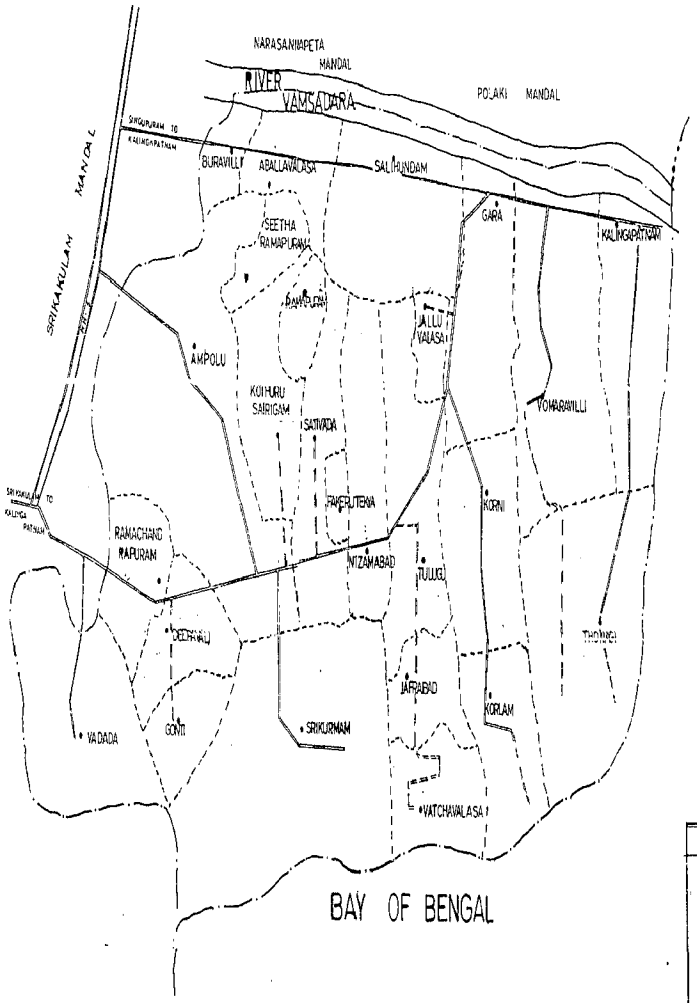
The deviations between the intended and actual achievement will be minimized if there is proper feedback about the difficulties encountered and if the corrective action is taken in time. Thus, the concept of monitoring is the two-way flow of feedback information and corrective action.

Methodology:

The design of a monitoring system involves the following stages:

1. Formulation of objectives of various types and their quantification;
2. Input monitoring-grounding and later stages-feedback and corrective action; and
3. Output monitoring -Indicators and use of sample surveys.

GARA MANDAL - study area



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INDEX
- MANDAL BOUNDARY
- VILLAGE BOUNDARY
- TAR ROAD
- METAL ROAD
- RIVER
- NATIONAL HIGHWAY

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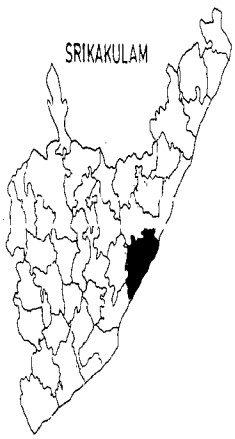
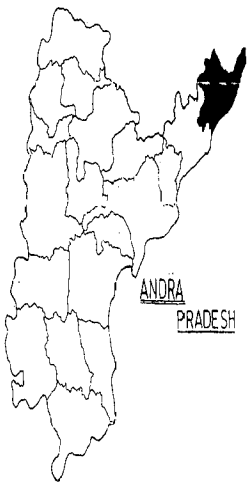
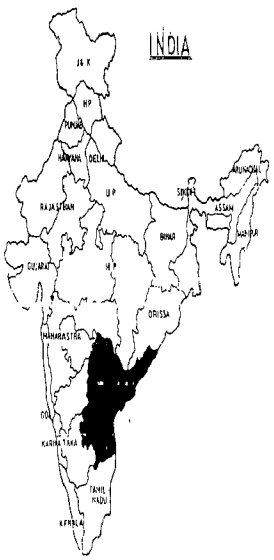
SUSTAINABLE PLANNING FOR DEVELOPMENT

K. SREE RAMA MURTHY
M.U.R.P II Year
UNIVERSITY OF ROORKEE







Women are facing more problems, in search of water, as they are connected with household activities. The source of water supply is studied very carefully (Fig.5.4), and presented in table 5.14. This table enumerates majority of the people (75 percent) are dependent on wells. The remaining people dependent on hand pump (11.76 percent) and the rest (13.2 percent) on tube wells.

The people in the study area are facing acute drinking water supply problems. Some people, where there are no wells, have to travel a considerable distance (table 5.15) to fetch water. During summer season the situation is further aggravated. Due to continuous discharge of ground water, without any remedial measures, the depth of water table is also increasing. Recently, the government has started a water supply project for a cluster of villages, in which they are constructing water tanks. But the program may not be sustainable due to absence of a permanent water source.

27. Buffaloes are found more number in the larger farm. It is obvious that the cost of buffaloes is very much higher so that only larger income group people can afford it.

28. Oxen are found evenly distributed. In fact the marginal farm category-using ox for labor ploughing. They get more employment opportunities during the ploughing, harvesting etc, for ox and themselves. The small and medium persons also doing the business in addition to their own activities. The larger farm categories higher labors and using their animals for these agricultural operations.

29. Larger number of people from large farm category are enjoying the Government Financial Institutions facilities, where as the downtrodden community are depending on the shopkeepers for financial help.

30. Medium size family spends more quantity of money for children's higher and technical education, which is a positive symptom for development.

31. Saving is found even in the marginal farm category, which is the most downtrodden community of the system.

32. In occupation, number of people engaged in agricultural activities is decreased along with increase in size of farms.

33. More number of people from the marginal farm size category engaged in daily wage activities for their survival since they get very little income from farming activities.

34. Larger number of people from large farm size category is engaged in service activities since they are having more number of higher and technical literates in their category.

5.26 Statistical Analysis

In the present investigation, correlation has been worked out between two variables to find out their associations. Size of farms have been considered as dependent variables, and the corresponding other variables have been considered to find out their association. Of the total about 175 parameters, the most important parameters, which control the system, have been identified, and their association with the size of farm has been analyzed. The control variables, which have been positively correlated with the size of farm, are presented in table 5.22 and the variables, which are not associated with the size of farm, are presented in table 5.23

The table 5.22 very clearly illustrated that most of the control variables, such as, level of areas, crop input and output, area under crop, profit, household expenditure, savings. etc. Positively associated with the size of farm.

Table 5.22: Variables which have Positive Relation with Farm Size

S.NO.	NAME OF THE VARIABLE	PRINCIPAL CONTROLLING PARAMETER	CORRELATION COEFFICIENT
1	LOW LEVEL AREA IN ACRES	SIZE OF FARMS	0.94405
2	HIGH LEVEL AREA IN ACRES	A. MARGINAL	0.76357
3	TERRAIN OF THE AREA	B. SMALL	0.7203
4	AREA UNDER PADDY CROP IN KHARIF SEASON IN ACRES	C. MEDIUM	0.93407
5	AREA UNDER BLACK GRAM CROP IN SUMMER SEASON IN ACRES	D. LARGE	0.75594
6	YEILD OF BLACK GRAM IN SUMMER SEASON (BAGS/ACRE)		0.70303
7	AREA UNDER GREEN GRAM CROP IN SUMMER SEASON IN ACRES		0.73982
8	YEILD OF GREEN GRAM IN SUMMER SEASON (BAGS/ACRE)		0.75399
9	TOTAL EXPENDITURE IN RS. /ACRE		0.71756
10	TOTAL PROFIT IN RS./ACRE		0.70745
11	AREA UNDER RAGI CROP IN SUMMER SEASON IN ACRES		0.7125
12	YEILD OF RAGI IN SUMMER SEASON (BAGS/ACRE)		0.70957
13	TOTAL QUANTITY OF FERTILIZER APPLIED (BAGS/ACRE)		0.70957
14	TOTAL EXPENDITURE IN RS. /ACRE		0.70957
15	TOTAL PROFIT IN RS./ACRE		0.70957
16	AREA UNDER GROUND NUT CROP IN SUMMER SEASON IN ACRES		0.77457
17	AREA UNDER SUGARCANE CROP IN ACRES		0.83578
18	YEILD OF SUGARCANE IN TONNES/ACRE		0.80498
19	TOTAL EXPENDITURE IN RS. /ACRE		0.7531
20	TOTAL PROFIT IN RS./ACRE		0.74493
21	AREA UNDER MESTA CROP IN KHARIF SEASON IN ACRES		0.71544
22	ANNUAL INCOME IN RS.		0.95439
23	ANNUAL EXPENDITURE IN RS.		0.90856
24	HOUSEHOLD EXPENDITURE IN RS. PER MONTH		0.74694
25	SAVINGS IN RS. PER MONTH		0.81944