METHODOLOGY – PRIMARY DATA AND SECONDARY DATA

The present study “Irrigation and Rural Development: A study of watershed programme in Kurnool Division” is primarily based on the information gathered from various sources that deal and dealt with the study in Kurnool district. I have collected the data from different records, publications by the government of India and government of Andhra Pradesh. The secondary data information relevant to the study has been taken from 1) Agricultural Economics, 2) Irrigation Development in India and the brochure released by the Commissioner, 3) Information and Human Relations, Government of Andhra Pradesh, Hyderabad as well as from the report of the working Group on Watershed Development, Rain-fed Farming and Natural Resource Management, published by the Government of India, Planning Commission, September, 2010. I have also visited Research Institutes and several University Libraries such as Osmania University, Central University, Andhra University, Kakatiya University and Nagarjuna University for collection of data regarding Watershed Development Programme in India. Moreover the recent data connected to the implementation of watershed programmes has also been collected and used in the research study.

The drought-prone areas have been carefully studied and data has been gathered for the improvement of the living standards of the villagers and the changes that have taken place in villages where the watershed programmes have been implemented. The levels of production and productivity have been calculated meticulously and included in the study along with the pattern of cropping, irrigation and the changes in the income of the villagers and the geographic placement of Kurnool district and the watershed programme of villages.
As per the current information pertaining to 2010 that is available, the DWMA (District Water Management Authority) has decided to construct Mega Watershed with an amount of Rs. 174 crore. For the year 2009-10, 13 mega watersheds have been granted to the district and each Mega Watershed is likely to cover 5,000 hectares of land under cultivation. With an estimated cost of Rs. 12,000 per project and the total expenditure would be Rs 6 crore.

In the year 2010-11 an amount of Rs. 96 crore is granted for the Mega Watersheds in Kurnool district and to the 13 Mega Watersheds another 3 Mega Watersheds have been granted making the total number of MWS 16. The DWMA officials have made an elaborate survey to identity the places where these M.W.S are to be constructed. Under the guidelines of Ground Water Resources Development Officers, the mandals where these M.W.S are to be constructed have been identified and the list is to be approval by the Kurnool District Collector.

In Kurnool district the Watershed Development Programme is being implemented in 3 revenue mandals. The research scholar has collected the data from the secondary sources such as the booklets, pamphlets, brochures and Kurnool District – Hand Book of Statistics, 2009-2010 gallaenced from the Chief Planning Officer, Kurnool for relevant statistics and also gathered information from the office of the collector relating to the years 2009-2010. With regard to the information about the crops and the land under irrigation, the CEO-Kurnool has provided the data and some information is taken from the book Statistical Abstract – AP. 2010.

For collecting information regarding the basic activities of the Watershed Development Programme, Social awareness among the people about the watersheds, the
arrangements that are made for the implementation of watersheds, allocation of funds, the responsibilities of the Gram Panchayat, Village Society, Consumers’ or Users’ Group and labour group, plans, supervision, maintenance of records, and for the stages in the implementation of the Watershed Development Programme, the researcher paid several visits to the villages, held elaborate discussions with the people involved in the programme. The researcher visited the Natural Resources Management Centre. A.M.R Andhra Pradesh Village Development Academy, Rajendra Nagar, Hyderabad and visited the website www.amr-apard.ap.gov.in for the information and incorporated the same in the study. References used for the study are shown at the end of each chapter.

NEED FOR THE STUDY:-

“Watershed is a self-defended area which does not allow any water from outside the catchment to enter into it, and allows its excess water to discharge to a common point in a stream, rivulet or river” Srivastava (1996).

As much of the rain water is being wasted, it seemed to be imperative to arrest the water from being wasted and the concept of watershed is born. Watershed treatment envisages the measures required for restoring the ecological balance by checking erosion, harvesting rainwater, improving the crop position and drainage line treatment and watershed management encompasses the whole gamut of land, water, people and bovine population. Under this system, the socio-economic status, people’s habits of living as also the food habits, living standards and the like are improved.

From time immemorial, India being a country which has been tradition – bound and orthodox with lots of reservations both socially, traditionally, culturally and religiously depended on agriculture and it still depends on agriculture and the Indian
farmers themselves maintained watersheds like ponds, tanks and such other irrigation systems. It becomes obvious thereby that the concept of watershed management is as old as the concept of crops grown under irrigated conditions and this concept led to the development of tanks and reservoirs for increasing the production to meet the demand of ever-growing population.

The Watershed Management was started in India in 1962–63 with the launching of the government scheme, “Soil conservation works in the catchments of River Valley Projects”. The chief aim of it was the preservation of siltation of reservoirs built with huge government funds.

The Government of India launched Watershed Development Programmes (WDPs) in 1983-84 in a big way to conserve and utilize natural resources for enhanced productivity and higher socio-economic status. Up-sealing of watershed development programme was carried out by spending about Rs,1,00,000 millions per annum.

The National Watershed Development Programme for Rain-fed Agriculture (NWDPRA) was started in 1995-96. Watershed community is now being encouraged to participate in the government/donor/Non-Governmental Organizations (NGOs) projects and contribute labour or cash.

Hence the impact of watershed programme needs evaluation for evolving better strategies and policies to preserve, conserve and utilize the natural resources for the betterment and welfare of the ever-growing population.

C. H. Hanumantha Rao in 1991, in his “Study on Unstable Agriculture and Drought” made certain inferences from the instability of Indian agriculture in realizing
the plan targets and aggravating the problem. He had also commented that to a greater extent, the economic failures in India are only the consequences of drought occurrence."

Dry land areas in India account for about 70 per cent of the cropped and contribute more than half of the country's food grain production. These areas share 60-80 percent of the output of coarse cereals, major oil seeds and fibre crops. Even after realizing the entire irrigation potential in the country, about the half of the area still is un-irrigated. Stagnation of production and productivity has been observed in all the major food crops of dry land agriculture.

Hence there is a need for integrated development and management of the land and water resources which provide life support for rural communities and the prospects for agriculture in the dry land areas.

Kurnool District is a hot arid and drought-prone district and comes under rain shadow zone with an annual rainfall of 520 mm. The soils are mostly red with patches of black cotton in certain zones. Out of the total rainfall received by the district only 15 to 20 per cent is utilized for agriculture and the rest is wasted. In the district droughts occur frequently and successively resulting in scarcity of water for drinking and irrigation purposes. Crop failure, storage of food for the people and fodder for cattle, suicides of farmers, unemployment and migration of people from rural to urban areas in search of employment are the basic characteristics of the district.

The analysis presented in the above paragraphs make it obvious that the water is wasted should be used for irrigation and for other purposes. The water wastage can be minimized or eliminated if a proper plan is prepared and implemented successfully.
Hence to mitigate the severity of drought and save the district from becoming a desert, several programmers are taken-up. They are:

Drought Prone Area Programme (DPAP), (1974),

Desert Development Programme (1975),

National Watershed Development Programme for Rain-fed Areas (NWDPRA), (1990),


These programmes were introduced and implemented for the holistic development of people and natural resources with the funds provided by Central Government, State Government and International Agencies like World Bank and so on. Huge amounts have been spent on Watershed Development activities to achieve the set targets.

The above facts reveal the need of a study of the Watershed Development Programme and its impact on target groups and to see whether the fruits of the implementation of the watershed programme reached the target groups as envisaged by the government.

OBJECTIVES:

The present Study of Watershed Programme in Kurnool Division has the following objectives:

1. To see how the Watershed Development Programme is implemented in Kurnool district.

2. To examine the employment generation through watershed development activities.

3. To check whether the soil, water, plants/trees and livestock are properly utilized.
4. To estimate the extent of Gram Panchayats' and village societies’ participation in Watershed Development Programme.

5. To evaluate the impact of watershed Development Programme on agriculture and rural development.

6. To suggest suitable measures to be taken for further development of drought-prone areas.

**Limitations of the Study:**

The title of the study – “A study of Watershed Programme in Kurnool Division” is confined to Kurnool district only. The data collected covers a period of 9 years from 2001 to 2010 gathered from the Chief Planning Officer, Kurnool and the Chief Executive Officer, Kurnool and the Statistical Abstract, ending 2010. The study is purely objective and every care has been taken to seek the information accurately from the government officers, the farmers and the groups involved in the programmes. Extensive field visits have been made to study the impact of the Watershed Development Programme in villages and all watersheds concerned.

**CHAPTER DIVISION:**

**Chapter-1**

The study has been divided into six chapters taking into consideration the main characteristics of Indian agriculture. With heavy dependence on rainfall, India is an agricultural country where water is not to be wasted. India cannot afford to waste water. Therefore extensive and elaborate steps have to be taken to arrest the wastage of water.

The first chapter deals with irrigation, as India has much acreage to be covered under irrigation. The chapter explains the nature and scope of irrigation – the projects that
have been taken up by the State government to see to it that the water of the rivers and the rain water is also used for the purpose of irrigation. The chapter presents a picture of irrigation of A.P., availability of the water resources from the rivers Godavari, Krishna, Pennar, Nagavalli, Vamsadhara and other minor rivers and the area of land irrigated under these rivers. It also deals with irrigation at district level and how irrigation has been a backbone and supporting factor in rural development in India.

Chapter – 2

The Second chapter entitled The Role of Irrigation in Rural Development explains the impact of irrigation on agricultural development in the country in general and in the State and Kurnool district in particular. The types of irrigation have also been described – major, minor, well and tank and the progress of irrigation is also presented. It is a known fact that irrigation plays a vital role in agriculture and the same is explained in detail in the chapter.

Chapter – 3

The Third chapter covers Socio-Economic and Geographic Profile of Kurnool Revenue Division and in this chapter the entire profile of Kurnool is given. The Social and economic conditions of the people is discussed at length and the geographic placement of Kurnool is dealt with elaborately. The chapter deals with physical and climatic conditions of Kurnool district and analyses the drought conditions in the area and the need and importance of watersheds in some selected divisions.
Chapter 4

The Fourth chapter is analyses the Evolution of Watershed Programme which deals with the meaning and definition and structure of watersheds. The objectives are given in the chapter along with the evolution of watershed programme in the State. The chapter also deals with the responsibilities of the Gram Panchayats, village societies, the officials concerned and also the groups that are involved in the Watershed Development Programme. The study of the evolution of watershed programme in this chapter is restricted to 11th Plan period only.

Chapter – 5

The Implementation of Watershed Programme in Kurnool is examined in the Fifth chapter and it deals exclusively with the implementation of WDP in Kurnool district of Andhra Pradesh. The chapter gives an elaborate description of the prospects of watersheds in Kurnool Revenue division, the number of watersheds granted, completed and to be completed.

Chapter – 6

The Sixth chapter gives a detailed account of the findings of the research scholar, assets and liabilities in the implementation of Watershed Development programme in Kurnool district only and if any failures are found anywhere the suitable measures are suggested to the people concerned to mitigate the liabilities and to improve the assets and to make use of the funds and various facilities provided by the government to the maximum extent.