



## IRRIGATION SYSTEM CAN CHANGE THE PRODUCTION IN AGRICULTURE (WITH SPECIAL REFERENCE TO THE PADDY CROP AT NALGONDA DISTRICT OF TELANGANA STATE)

### Economics

**Dr. Bala Srinivas**

Assistant Professor of Economics, Nagarjuna Government College (a), Nalgonda, Telangana State

### ABSTRACT

This paper studies the state of agriculture and irrigation in Telangana, especially from the point of view of agricultural production corresponding to irrigation system. The irrigation system can change the agricultural production and productivity in various crops. Increase in agricultural production and productivity depends, to a large extent, on the availability of water. Irrigation helps in stabilizing the output and yield levels. Both income and employment are positively and closely related to output with greater support of irrigation. Employment potential of irrigated lands, increase production, helps in developing allied activities means of water transport etc. are improve income of government from agriculture.

### KEYWORDS

#### INTRODUCTION

Irrigation refers to the process of supply of water through artificial means such as pipes, ditches, sprinklers, etc. The irrigation system helps the farmers to have less dependency on rain-water for the purpose of agriculture. The necessity and importance of irrigation is highlighted as variety of climate, irregular or uncertain monsoon, for winter crop, high breed seeds and different soil characters. The importance of irrigation in the Indian agriculture cannot be overestimated in view of the peculiar nature of rainfall in the country. Irrigation in India has been practiced from ancient times and irrigation tanks and wells are a familiar feature of the India landscape to supplement and conserve the rainfall. Hence, irrigation is of utmost importance for an agriculture based country like India. To feed a population of over one billion people, there is a need for production of crops round the year. But for this purpose, irrigation water is needed. So for the production of food crops and cash crops, irrigation is a must. Increase in agricultural production and productivity depends, to a large extent, on the availability of water. Hence, the importance of irrigation is however, the availability of irrigation facilities which is highly inadequate in India. Productivity on irrigated land is considerably more than the productivity on un-irrigated land. Since India has a tropical and sub-tropical climate, it has potentialities to grow crops on a year round basis. However, since 80 percent of the annual rainfall is received in less than four months, multiple cropping is generally not possible. Provision of irrigation facilities can make possible the growing of two or three crops in a year in most areas of the country. This will considerably enhance agriculture production and productivity. The successful implementation of the High Yielding Programme enhances agricultural production in a great intent.

Irrigation helps in stabilizing the output and yield levels. It also plays a protective role during drought years. Since, both income and employment are positively and closely related to output, prevention of fall in output during drought is an important instrument for achieving stability of income and employment in the countryside. Irrigation confers indirect benefits through increased agricultural production. Employment potential of irrigated lands, increase production, helps in developing allied activities means of water transport etc. are improve income of government from agriculture. Availability of regular water supply will increase the income of farmers imparting a sense of security and stability in agriculture.

The economy of Telangana is mainly supported by agriculture. Two important rivers of India, the Godavari and Krishna, flow through the state, providing irrigation. Farmers in Telangana mainly depend on rain-fed water sources for irrigation. Rice is the major food crop. There are many multi-state irrigation projects in development, including Godavari River Basin Irrigation Projects. Rice is the major food crop and staple food of the state.

Other important crops are tobacco, mango, cotton, and sugar cane. Agriculture has been the chief source of income for the state's economy. Apart from major rivers, there are small rivers as Tunga Bhadra, Bima, Dindi, Kinnerasani, Manjeera, Manair, Penganga, Pranahitha, peddavagu and Taliperu. There are many multi-state irrigation projects in development, including Godavari River Basin Irrigation Projects and Nagarjuna Sagar Dam, the world's highest masonry dam.

The role of Agricultural Sector in State Economy is very significant. The contribution of primary sector including Agriculture, Horticulture and Animal husbandry to the State Gross Domestic Product for the year 2017-18 is 18 percent. However, above 50 percent of the working population is still dependent on Agriculture. Agriculture in Telangana is mostly dependent on rainfall. Monsoon and seasonal conditions play a major role in the Agricultural Production.

#### IMPORTANCE OF THE STUDY

The study clearly clarifies Telangana state agriculture sector with special reference to the importance of irrigation system. In the Telangana state Karimnagar district is advanced in agriculture activities, Mahabubnagar is backward in Telangana region. Approximately 21 percent high gross irrigated area is in Karimnagar district where as Mahabubnagar District has only 11.56 percent gross irrigated area. Medak and Rangareddy districts are also with low irrigated areas, yet they are associated with Hyderabad metropolitan city. Hence these districts are not taken in the study. The purpose of this study is to prove the production is more in irrigated areas compare to un-irrigated areas in Telangana state.

#### METHODOLOGY

The main purpose of the study is to analyze the irrigation system change the agriculture production. The study analyses the production of Paddy crop in Karimnagar and Mahabubnagar districts of Telangana state among various categories of farmers both irrigated and un-irrigated areas. In this study we have collected the data from primary sources with the help of questionnaire schedule method. The primary data collected from the questionnaire schedule method. In the schedule it is covered aspects like particulars of farmers, family particulars, land use patterns, cropping pattern, operation wise cost of cultivation, types of soil with cropping pattern, sources of financial assistance. It is also proposed to study the agronomic features of the selected villages.

For primary data only two districts are selected. The sample villages are concentrated in Karimnagar and Mahabubnagar districts. District selection is purposive. The districts of Karimnagar is one of the districts in Telangana state, which is advanced in Agricultural activities in Telangana state, where as Mahabubnagar district is one of the backward in agricultural activities in Telangana state. Following the source specific criteria two villages from each district are selected both in irrigated and un-irrigated areas. The present study propelled data from four villages, two villages belong to irrigated, one is from advance district (karimnagar) and the other one is from back ward district (Mahaboobnagar) in Telangana state. The other two villages belong to un-irrigated areas covering with Karimnagar and Mahabubnagar district respectively. In Karimnagar district the farmers have been cultivating paddy, sugarcane, maize, Cotton and other commercial crops where as in Mahabubnagar district the farmers have been cultivating paddy, Cotton, pulses and other food grain crops.

#### SELECTION OF HOUSEHOLDS

The main concept of the study is to analyze the importance of irrigation system in agricultural sector and also analyses the paddy crop production difference between irrigated and un-irrigated areas, examine with the variation among the different category of farmers. Keeping in view of the purpose of the study from the selected study

area we have collected data village wise particulars, regarding total number of farm house holds and various categories of farmers both irrigated and un-irrigated areas.

Out of 100 cultivators (farmers) 50 cultivator households have been selected from Karimnagar district (irrigated area) and remaining 50 cultivator households have been selected from Mahabubnagar district (un-irrigated area). The cultivator household have been classified into the following three categories.

- Large farmers [ above 10 acres]
- Medium farmers [ 5 acres to less than 10 Acres]
- Small farmers [ 1 acre to less than 5 acres]

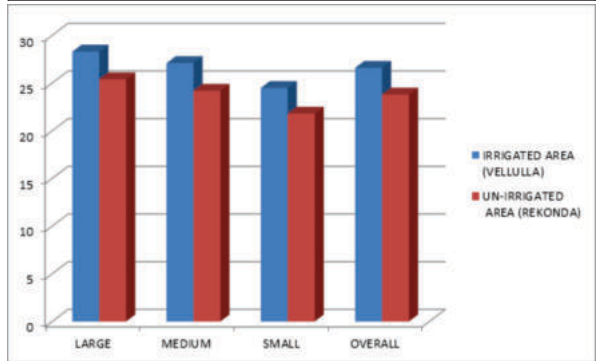
**ABOUT TELANGANA STATE**

Telangana is situated on the Deccan Plateau, in the central stretch of the eastern seaboard of the Indian Peninsula. It covers 114,800 square kilometres (44,300 sq mi). The region is drained by two major rivers, with about 79 percent of the Godavari River catchment area and about 69 percent of the Krishna River catchment area, but most of the land is arid. Telangana is also drained by several minor rivers such as the Bhima, the Manjira and the Musi. The annual rainfall is between 900 to 1500 mm in northern Telangana and 700 to 900 mm in southern Telangana, from the southwest monsoons. Various soil types abound, including chalkas, red sandy soils, dubbas, deep red loamy soils, and very deep b.c. soils that facilitate planting mangoes, oranges and flowers.

**Table.1 Size Wise Yield Rates Per Acre(paddy) In Karimnagar**

Sl. No	Size Of The Farmer	Irrigated Area (vellulla)	Un-irrigated Area (rekonda)
1	LARGE	28.3	25.4
2	MEDIUM	27.1	24.2
3	SMALL	24.5	21.8
4	OVERALL	26.6	23.8

Source: Primary Data



In this paper it is proposed to present the farm size and production of Paddy crop under different categories of farmers in both irrigated and un-irrigated areas of selected (Karimnagar and Mahabubnagar) districts. The irrigated area considered as irrigation under canals and the un-irrigated area considered as irrigation under wells (digging wells, bore wells and other wells).

It is proposed to analyses size wise production of Paddy crop among the different categories of farmers in irrigated and un-irrigated areas of Karimnagar and Mahabubnagar districts.

**Size wise yield rates per Acre (paddy) in Karimnagar District.**

Size wise yield rates per acre (paddy) in Karimnagar district is presented in table 1. The above table clearly indicates per acre yield rates is more in irrigated area as compared to un-irrigated area. Per size of farm yield rates of large, medium and small farmers is 28.3, 27.1, 24.5 quintals in irrigated area respectively, where as in un-irrigated area is 25.4, 24.2, 21.8 quintals respectively.

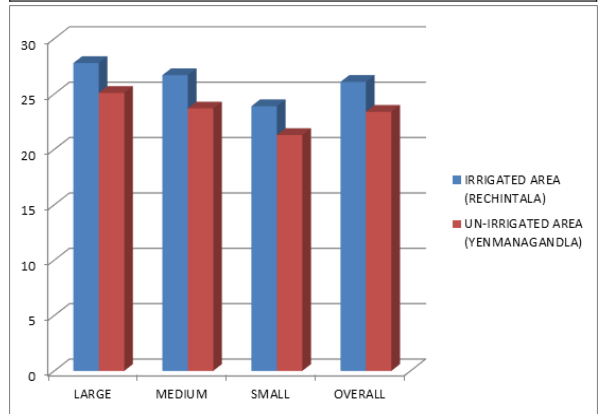
Over all yield rates of paddy per acre in irrigated is 26.6 quintals, where in un-irrigated area is 23.8 quintals. The term size and production and its relationship clearly shows a positive direction. It is important to note that is both irrigated and un-irrigated areas; there is positive relationship between yield per acre and size of the farm.

**Size Wise Yield Rates Per Acre(paddy) In Mahabubnagar**

Sl. No	Size Of The Farmer	Irrigated Area (rechintala)	Un-irrigated Area (yenmanagandla)
1	LARGE	27.8	25.1

2	MEDIUM	26.7	23.7
3	SMALL	23.9	21.3
4	OVERALL	26.1	23.4

Source: Primary Data



**Size Wise Yield Rates Per Acre (paddy) In Mahabubnagar District.**

Size wise yield rates per acre (paddy) in Mahabubnagar district is presented in table 2. The above table clearly indicates per acre yield rates is more in irrigated area as compared to un-irrigated area. Per size of farm yield rates of large, medium and small is 27.8, 26.7, 23.9 quintals in irrigated area respectively, where as in un-irrigated area is 25.1, 23.7, 21.3 quintals respectively.

Over all yield rates of paddy per acre in irrigated is 26.1 quintals, where in un-irrigated area is 23.4 quintals. The term size and production and its relationship clearly shows a positive direction. It is important to note that is both irrigated and un-irrigated areas; there is positive relationship between yield per acre and size of the farm.

**CONCLUSION**

It is fact the key factor in achieving agricultural development in tropical and semi-arid countries like India are irrigation. Since independence much attention has been paid to the development of irrigation potential in country with allocation of increasing amount of investments in each successive five year plan. All states of India are putting more investments for developing irrigation facilities for increasing production and productivity in agriculture sector.

The primary data for this study are taken by using questionnaire schedule method. The total sample of this study is 120 cultivators taking 30 each from four villages of both Karimnagar and Mahabubnagar districts. The main findings of the study are: The availability irrigation facility main reason to increase the production of Paddy crop in irrigated area of both districts. In irrigated area, production of Paddy crop is positive direction as compare to un-irrigated area of Karimnagar and Mahabubnagar districts, but in un-irrigated area of Karimnagar and Mahabubnagar district farmers have been getting low production of Paddy crop. So that we can understand the irrigation is major resource for agriculture for Paddy crop and not only Paddy crop but also all crops in agriculture.

Indian agriculture has undergone changes with the introduction of irrigation, especially the public funded irrigation projects. This study mainly depends on finding of the analyses of irrigation system and its impact on social-economic conditions, employment and income levels of that study area. It leads to increase in crop production and crop productivity per acre of gross cropped area under irrigation system. The irrigation facilities provided by the project serve as a boon to the farmers of command area, which has envisaged a shift in cropping pattern in favor of high cash value crops. It improves standards of formers life under tank irrigation system, increases the in social reputation, increases employment and the income status of the farmers.

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