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## IRRIGATION AND GROWTH OF AGRICULTURE IN ANDHRA PRADESH

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### Abstract

The paper discusses Irrigation and Growth of agriculture in Andhra Pradesh. The agriculture sector is one of the most important industries in the Indian economy; India is mainly an agriculture country. Agriculture forms backbone of the economy, since it is the occupation of about 60 per cent of the people and it contributes about 18 per cent of the national income. India has abundant land and other resources. As regards cultivation and production of food and fiber, it has got natural gifts of land and water. But by cultivating the land and using other resources, the agriculture production in the country is not able to achieve the goal, which is expected from it. The study is a macro level analysis irrigation and agriculture development in Andhra Pradesh State from 1956-2009. The main physical requisite for the development of agriculture is water which must be timely available in adequate quantities. Without irrigation, agriculture is not possible in most parts of the country, because of the seasonal nature of monsoon rainfall.

**Keywords:** Irrigation growth, agriculture sector, cultivation, water, and rainfall.

### 1. Introduction

The history of agriculture in India dates back to the Indus Valley civilization era and even before that in some parts of southern India. The agriculture sector is one of the most important industries in the Indian economy; India is mainly an agriculture country. Agriculture forms backbone of the economy, since it is the occupation of about 60 per cent of the people and it contributes about 18 per cent of the national income. India has abundant land and other resources. As regards cultivation and production of food and fiber, it has got natural gifts of land and water. But by cultivating the land and using other resources, the agriculture production in the country is not able to achieve the goal, which is expected from it. This is because agricultural production is a function of innumerable factors such as soil characteristics, weather conditions, seeds, fertilizers, pesticides water etc., (Pant, 1984). Since Indian Agriculture continues to be a gamble of the monsoon, vast area of cultivating land in the country continues to be at the mercy of untimely monsoons. It has been observed that India has a cycle of five years in which one year is good, other one is bad and remaining three is indifferent. The variability of rainfall largely determines the productive efficiency of Indian agriculture. It is rightly said that nothing moves in the Indian economy unless agriculture moves and it is unless water moves into agriculture. The problem of Indian agriculture is mainly a problem of water supply. Land will not yield good crops unless it is given a plentiful supply of water. This is especially true in India because soil in India is comparatively dry.

### 2. Review of Literature

Review of literature on a particular problem or study helps to identify the research gaps and focus on various aspects of problems. Several researchers and academicians have studied various issues and tend to provide meaningful solutions that help to formulate general policy. The vital role of irrigation in the economic development of the countries has attracted not only individual researcher, scholars and government but also the international organizations etc. Such studies focus their attention on the operation and management of the irrigation works, and examine their impact on the socio-economic conditions of the people and other related variables of agricultural transformation in India and abroad. Some of these studies deal with regional level impacts and some other have been conducted at macro level.

Singh et al. (2018) results revealed that the irrigation levels significantly affected the growth and their attributes of wheat. Four irrigations recorded highest plant height (74.63cm), number of tillers (81.33 m-1 row length), dry matter accumulation (93.16 g m-1 row length) at harvest stage and leaf area index (3.85) at 90 DAS over two and one irrigation.

Kumar et al. (2016) observed an experiment result revealed that the plant height, LAI, dry matter accumulation and number of tillers were highest under (14) CRI, tillering, flowering and milking stage, respectively.

### 3. Methodology

The study is a macro level analysis irrigation and agriculture development in Andhra Pradesh State from 1956-2009. The methodology adopted in the research is partly narrative and partly analytical in character based on the sources collected.



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#### 4. Historical Background of Irrigation Development in Andhra Pradesh

Andhra Pradesh is a land of many rivers and lakes and so, it is popularly and rather appropriately referred to as the "River State". The major as well as the medium and minor rivers that flow through the state number about 40. Among those, five are more important and perennial rivers of peninsular India. They are Godavari and Krishna rivers having their basins spread out in the states of Maharashtra, Karnataka, Madhya Pradesh, Chattisgarh, Orissa and Andhra Pradesh and flow through the heart of the state. Besides these two major interstate rivers, other medium sized inter-state rivers flowing through the state are Vamsadhara and Nagavali in the north and Pamar in the south. In addition to the above inter-state rivers, small rivers which have their origin in the state empty themselves into the Bay of Bengal after traversing for short lengths in the state.

The state has a heritage of cultivation and irrigation dating back to several centuries. In the past, Andhra Rulers paid a good deal of attention to the development of irrigation in their kingdoms for the benefit of their subjects. Big lakes like Ramappa, Pakhal, Laknavaram and many other irrigations works of Kakatiya period have become names to remember. Cumbum Tank, Kanigi Reservoir, Anantapur Tank, Porumamilla, Tank in Cuddapah District, Bukkaray Samudrarn, Mopad Tank, Nandyal Tank and anicuts across the Tungabhadra River such as Koregal, Vallabhapur, Raya, Basavanna, Turtha, Kampli, Bennur Rampur etc., are some of the monumental irrigation works inherited by the state from the Vijayanagar kings. During the pre-independence period, the Godavari Delta, the Krishna Delta, the Pennar Delta, the Kurnool-Cuddapah Canal, Khanapur, Mahaboobnagar, Pocharam and Nizamsagar irrigation systems were constructed by the then rulers. After independence, high priority was given to irrigation development. The principal projects providing irrigation are the new barrages to replace the old anicuts on the rivers Godavari, Krishna, Tungabhadra and the Penna, and the new dams / reservoirs and canal systems of Nagarjunasagar, Tungabhadra High- and Low-Level Canals, Sriramsagar, Somasila, Vamsadhara and Yeleru. On the Godavari, the original anicut built between 1844 and 1851 in four sections has been replaced by barrages at the same places, Dowlaiswararn, Ralli, Maddur and Vijjeswaram providing a potential of 5.02 lakh ha in East and West Godavari and Krishna districts.

#### 5. Irrigation in India

The south-west monsoon (June to September) and north-east monsoon (October to December) gives normal rainfall. Sometimes, the rainfall occurs in certain months only<sup>3</sup>. So, it is very essential to develop artificial irrigation facilities. Rainfall is uncertain before and after sowing. There is drought at one time and flood at the other time. So proper an adequate facility of irrigation is needed, an adequate water supply will bring prosperity, create employment potential, increase incomes and enhance capital formation<sup>4</sup>. The waste land can be brought under cultivation, if there is availability of irrigation water.

Floods may occur many times due to lack of control of the river water. This river water can be a good source of electricity and irrigation<sup>5</sup>. It is controlled at proper places and provision is made for extraction of electricity and its flow in canals. The multiple cropping patterns can only be possible if there is sufficient irrigation water. The burden of population on agriculture is very high in India and the double, triple or multiple crops are required to be taken from the available cultivated land. The intensive cultivation for example, sowing at proper time, application of fertilizers and other inputs are not possible without the supply of sufficient irrigation water.

#### 6. Conclusion

The main physical requisite for the development of agriculture is water which must be timely available in adequate quantities. Without irrigation, agriculture is not possible in most parts of the country, because of the seasonal nature of monsoon rainfall. So, some protective measures must be taken against the failure of the rains such as the provisions of irrigation from rivers, tanks or tube-wells, etc.

With the advent of British rule, irrigation attained considerable importance. Much was done to repair and improve some of the more important old irrigation works. The main objective in developing irrigation facilities was to give protection against the failure of monsoon affecting crop production and to reduce large scale expenditure on famine relief Because the success of agriculture depends on the extent to which the water requirement of crops can be met. Since independence India has made substantial progress in irrigation development. The area under irrigation has really been doubled from what it was at the time of independence. Even so only about half of the country's cultivated area still depends exclusively on rainfall. The frequent drought conditions in several parts of the country affecting food production have brought into sharp focus the importance of providing greater irrigation facilities.



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