

# Implications of Innovative technology in Agriculture- With special Reference to Paddy cultivation in Nagapattinam district

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## Abstract

Paddy is the prominent crop among cereals produced in India. Especially, south Indian accustomed with rice consumption more so the production of Paddy still has more significance. In addition, Green revolution given priority to Paddy and Wheat. The delta region of Tamil Nadu has been growing Paddy for longer period and the cultivation practices has been consistently undergoing transition. The present study examines the implications of innovative technology in Paddy cultivation in Nagapattinam district. The study undertaken in 480 cultivators in Nagapattinam district. The study revealed that innovative technology in cultivation practices, irrigation methods and marketing have enhanced the production and productivity of Paddy crop. The study also urged the need for conducive logistics arrangements to alienate the post-harvesting losses of the crops.

## Introduction

Agriculture in India has continuously been deliberated to utilize conventional methods of cultivation practices. The major reason for this is many comprising the diversified topology or geography, various cropping patterns, variable land holdings and hardship towards risk. But, in the recent past, not withholding the enhancing demand and inadequate or capricious rainfall the farmers have been force to adopt new methods at least to sustain their livelihood. There also has been a focus from both public and private sector to finance more into research program and projects which will be instantaneously applicable to the farmers and agriculture as a whole. The new approaches bring a world of change on how the agricultural can be changed persistently. But the distribution of these technologies or approaches has always impersonated a challenge.

The key areas in which we have seen main enhancement comprise irrigation approaches, crop choice and soil analysis. There have been apparently undergone improvements in crop yield and better utilization of land to a large extent. In most cases we are able to measure and tie the positive impact of technology and many cases it is more of an indirect impact.. The major criteria or factors that impede quick adoption include labor unavailability, risk, unavailability funds or credit and proper awareness.

## Innovative technology in Paddy cultivation

Agriculture which has gone through lot of transformations has also been subject to various stresses. Constraint of availability of land, water and other natural resources added more to the already deteriorating state of art. Most prominently dereliction in aspects confining to policy changes and natural scarcities multiplied the

misfortunes. When the demand for agricultural products both for consumption and agro based industries augmented, it's potential to meet up to the increasing demand was a big challenge. Soil conservation, water preservation and sustainable agricultural production became the requirement of the hour concepts. Adaptation of better irrigational facilities like sprinklers and drip system heightened optimal and efficient usage of water resources. Specifically in areas where there is critical water insufficiencies advanced technologies has to be introduced not only to save water usage but also control the water loss so input efficiency can be endangered , economic utilization of power can be mobilized, confrontation towards soil erosion can be made appropriate, genetically modified plants which are resistant to virus and bacteria's can be introduced through research in bio technology and eco-friendly pesticides and fertilizers can be adopted with help of latest innovations in chemical engineering. Various studies have proved that latest technology in agricultural practices have given better yield and has also helped in the process of sustainable agricultural practices than the primitive method of farming.

### Objectives of the study

- ❖ To examine the perception of the selected farmers on the usage of innovative technology in Paddy cultivation in the study area
- ❖ To map out the impact of the usage of innovative technology on income of the selected cultivators in the study area

### Data and methodology

The relevant data collected from Primary survey. The study was conducted in Nagapattinam, Mayiladuthurai, Tharangambadi, Sirkali taluks of Nagapatinam district of Tamil Nadu. The study chosen 480 samples for the study.

### Analysis

**Table-1: Paired Samples Statistics**

	Mean	N	Std. Deviation	Std. Error Mean
Pre-Utilization	3235.8	480	43.5	42.74
Post- Utilization	5329.0	480	40.0	121.3

*Source: Computed from primary survey*

**Table.2 :Paired Samples Correlations**

	N	Correlation	Sig.
Pre-Utilization & Post-Utilization	480	0.855	0

Source: Computed from primary survey

**Table-3: Paired Differences**

	Mean	Std. Deviation	Std. Error Mean	95per cent Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
Pre-Reform - Post-Reform	6375	57.8	118.6	-1416	-233	8.329	10	0.04

## Result and discussion

The results of the empirical analysis depicted the socio-economic profile and the awareness about the usage of water resource management in Paddy cultivation. Majority of the selected farmers are male as 85 percent constitute the same even though women engaging in agricultural activities considerably but the farming and other decision making taken by the male farmers only. Significant proportion of the people represents from the age group up to 50, nearly 64.8 percent of them are in the age group. Nearly 76.3 percent got education up to primary level followed by 26.9 percent have qualified with 10<sup>th</sup> Std majority of the selected respondents have studied up to school. Nearly 92 percent as they have been engaging in agriculture for more than 20 years. Almost 76 percent have familiar with the modern practice of cultivation and water resource management, 78.9 percent revealed lack of irrigation is the important determinant of Paddy cultivation, 79.3 percent familiar with check dam, cleaning of canals, preservation of tanks and distilling the water resources to preserve the irrigation facilities for paddy cultivation in the study area. Nearly 78 percent of the farmers indicated that modern technology usage reduced the timing, nearly 79 percent of the cultivators opined that cost of the usage of innovative techniques is more, 80 percent willing to adopt new innovative technology as lack of man power propelled them to adopt innovative technology. The study utilized to map pout the impact of innovative technology utilization. The Paired 't'-test was used to the compare the means of the pre-utilization and the post-utilization of innovative technology. The T-value attained from the analysis of the

relevant data collected indicated that overall mean scores of the pre-test and the post-test is 8.32. The details also reveal that the P-value or value of significance is 0.04, at the level of 0.05. The analysis shows that there was significant difference between the overall mean scores of the pre-test and post-test at 5per cent level of significance. Therefore, the outcome derived from the analysis indicated that there are significant changes in income obtained by the selected farmers after adopted innovative technology in paddy cultivation.

## Conclusion

Agriculture is indisputably moving towards a big revolution during last two decades but how far our Indian farmers capable enough to reach out to this change occurring is something which cannot provide a readymade answer in the available situation but need to equip more with innovative technology and meet out the productivity of the global standard. There has been huge revolution in cropping patterns, advanced cropping and farming methods, proper warehousing and marketing facilities which facilitated the farmers look beyond this sector as a profit-making industry. Sensors can aid in responsible for the quality of the crop and also identify the section of the crop which is infected or require any special attention. Further, the cultivators indicated that the most utilized innovative techniques in agricultural system like crop diversification, water shed management, usage of bio –technology, organic farming, corporate farming etc., has made a significant transformation in the agrarian structure. In addition to that agriculture has to transform itself as a profit generating sector to attract back the lost feathers into its threshold. Its requirements are more than magic to bring in this kind of transformation. Farmers need to be educated more on the new technology and its usage in cultivation practices and other activities pertaining to agriculture . Governments clubbing with the corporate sectors and financial institutions have to come down to invest and also help the farmers avail these technologies at ease.

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