

## **EXECUTIVE SUMMARY**

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### **1. INTRODUCTION**

Considering the importance of cotton crop in the national economy and recognising the need for increasing the quality and productivity of cotton, "Government of India launched the -(Technology Mission on Cotton (TMC)) in February 2000.

The Karnataka Government has been implementing the Centrally Sponsored Mini Mission-II (MM- II) under TMC in the 16 cotton growing districts in the State, since 2000-01.

### **2. OBJECTIVE OF THE EVALUATION STUDY**

The objective of the present study was to assess the impact of MM II vis-a-vis adoption of technologies by the beneficiary farmers as well as the increase in the state's production and productivity on account of the scheme. It was also examined if the objectives of MM II had been fulfilled, especially in terms of the following five major technology components of the scheme:

- a. Distribution of certified seeds,
- b. Field demonstration,
- c. Training,
- d. Distribution of water-saving devices and
- e. Integrated Pest Management (IPM).

The study was sponsored by the Commisionerate of Agriculture, Dept of Agriculture, Govt. of Karnataka

### **3. METHODOLOGY & SAMPLE COVERED**

The evaluation was carried out in all the 16 cotton-growing districts where the scheme has been implemented. The exercise covered 32 taluks, 92 villages arid 670 beneficiary farmers including small & marginal, SC/ST and women farmers. Besides a desk review of relevant documents, the study team conducted field interviews with the beneficiaries using a structured questionnaire and held discussions with the local agricultural officers. Group discussions were held also with non-beneficiary farmers in the neighbourhood with a view to assessing their awareness of the different components of MM II and the possible demonstration effects the scheme has had on their operations.

### **4. IMPACT OF MINI MISSION-II**

#### **4.1 Mission Impact on Productivity**

Between the years 2000-01 and 2002-03, the total area under cotton came down from about 31 to 27 per cent in the State. A similar decreasing trend in area was noticed among the surveyed farmers also. However, during the same period, the proportion of cotton area under MM /I increased to more than 40 per cent.

Productivity in the MM II area recorded a steady increase (45-50 per cent) during the three-year period- Productivity in the area where MM II technology was not practiced showed a decreasing trend. There was also an increase in the yield of cotton cultivated using TMC technologies under irrigated as well as un-irrigated conditions.

Nevertheless, the farmers own perceptions in respect of the impact of the MM II components adopted by them on the cotton yield were different. A majority of them (63 per cent) felt that the scheme had no significant impact. The rest agreed that the yield did increase but only to the extent of 25 per cent. The respondents cited monsoon failure and prolonged drought in the state for the past three years as the main hurdles.

#### **4.2 Fulfilment of Mission Objectives**

The study also examined if the objectives of MM II were fulfilled especially in terms of the following five major technology components of the scheme:

#### **4.3 Distribution of Certified Seeds**

Of the 39 farmers supplied with the certified seeds by the Karnataka State Seeds Corporation (KSSC), about 36 per cent said that the impact on the yield was positive. The remaining 64 per cent who did not see any impact, attributed it to the poor quality of the seeds and their low germination rate. It was also learnt that only one-third of the total seed requirement is met by State Dept of Agriculture through the KSSC, with private agencies supplying the rest. Some of these seeds known as research hybrids are neither certified nor notified.

#### **4.4 Field Demonstration**

About 17 per cent of the respondents were involved in the field demonstrations of laboratory technology during the period 2000-01 to 2002-03. More than half of them perceived that they could adopt the latest technologies for cotton cultivation through these demonstrations and improve productivity.

#### **4.5 Training**

About five per cent of the respondents had undergone a two-day training in the use of latest technologies in cotton cultivation. More than half of them said that the training was useful and it had a positive impact on the yield.

#### **4.6 Distribution of Water-Saving Devices**

Water saving devices such as sprinkler sets and drip irrigation systems were distributed at subsidized rates to enhance the irrigated cotton area under cultivation, as also to improve water use efficiency. About 3 per cent of the farmers surveyed had been provided with sprinkler sets. Except one, all the recipients concurred that they now had more area under irrigation.

As for the Drip Irrigation Systems, only four of the respondents had been supplied with them and the indications were that they had not significantly benefited from this component. However, with the number of respondents being too small, it is not prudent to arrive at any conclusion.

#### **4.7 Integrated Pest Management (IPM)**

As regards IPM Demonstration, nearly 9 per cent of the respondents had participated in the component, mostly during the year 2001-02 and 2002-03. More than half the participants perceived that the learning was positive with regard to understanding the various technologies under IPM.

As many as 279 of the respondents had been distributed, on time, with the pheromone traps for monitoring pest occurrence. About 42 per cent of them perceived that, thanks to their use, there was an increase in the cotton yield.

One-fourth of the surveyed farmers were distributed with NPV for bollworm control. About 93 per cent of them had received the NPV-bio-agent in time and managed to control the pests to a great extent. About 43 per cent of these beneficiaries were of the opinion that the bio-agent was indeed instrumental in controlling the pests and that it led to an increase in the yield.

About 10 per cent of the surveyed farmers had been distributed with the manual or power sprayers for the timely management of pests. More than 50 per cent of the beneficiaries felt that this component had a positive impact as far as the yield was concerned.

As for Pest / Disease Surveillance, this task was apparently assigned to certain IPM-trained farmers. It was also reported that these scouts were in the practice of filing weekly reports with the officers concerned. Nevertheless, the study team came across only five such farmers during the field survey and it would not have been fair to rush to any conclusion vis-a-vis the impact of this component on the productivity.

#### **4.8 Mission Impact in terms of Technology Awareness & Adoption**

The survey found that about 37 per cent of the respondents were aware of the various technologies, equipment & practices that help in yield enhancement. They had received various types of information literature. Also, nearly 95 per cent of those who were exposed to such information had actually adopted the prescriptions.

### **5. RECOMMENDATIONS**

The success of the Mini Mission depends on the application of a management approach wherein the institutions, individuals and farmers have to work together to produce results. It is also a prerequisite that cotton-marketing facilities based on minimum price support mechanisms are created, simultaneously. The study identifies the following as important steps for the successful implementation and sustenance of the mission:

- a. Making certified seeds of new, hybrid, location-specific varieties available to the farmers in time and at a reasonable price, depending on the season

- b. Allowing inter-component fund transfer to suit the local needs
- c. Ensuring that pheromone traps, and bio-agents like NPV, are available in time, in sufficient quantities and at an affordable price
- d. Involving local NGOs and Self Help Groups (SHGs) in the implementation of the scheme
- e. Providing flexibility in the programme approach, de-emphasizing the subsidy approach and decentralizing the implementation strategies
- f. Providing enough scope for the field officials to innovate and initiate group actions like IPM
- g. Ensuring that, in addition to their dependence on various components of the scheme such as demonstration and training to acquire new technologies, farmers feel free to adopt and innovate on their own, without the lure of subsidy
- h. Deploying adequate staff at Taluk and RSK levels to ensure efficient implementation of the scheme