

1. INTRODUCTION

NPDP is a district oriented Technology Mission (TM) programme. It is designed to prepare the pulses production programme for achieving annual growth rates of 4 per cent during the ensuing 10th plan period

The TM has two mini-missions: one concerning the crop production technology and the other for providing infrastructure support in terms of inputs and services at the State level to sustain the main mission.

The overall mission objective is to increase the area, production and productive of the important pulse crops in the State. However, the terms of reference for this evaluation study is to focus on the “Selected evaluation for financial aspects” of the two Sector Schemes separately. This study assumes that the selected financial evaluation to mean two things. Firstly the cost effectiveness of the two schemes in execution and secondly, in terms of achieving the overall objectives of the technology mission envisaged under the NPDP. Since the two are interconnected, the evaluation of the district and State sector schemes and the NPDP itself are dealt with in different sections of an integrated report presented here.

2. CRITERIA FOR EVALUATION

Cost effectiveness is dealt with in two aspects. Firstly, If the funds disbursal within each component is consistent with the district’s importance for pulses production and is according to the guidelines, it is assumed to be efficient distribution of funds.

The second aspect relates to the qualitative evaluation of funds allocation between the three stakeholders in the NPDP – the SDA, Scientists and the pulses farmers.

The above two components of the analysis have been supplemented by an analysis of the perceptions of the stakeholders during the field study.

3. THE PULSES SCENARIO

The pulse production in the country is dominated by five states, which account for a total of 75 per cent of area and 77 per cent of production of the pulse production. These States, in order of importance are Madhya Pradesh, Uttar Pradesh, Maharashtra, Rajasthan and Karnataka

The pulses scenario at the national level during the later part of the VIII Five-Year Plan period started with a bleak outlook. The per capita availability of pulses in the country had declined from 38.1gms per day in 1995 to 34 gms per day in 1996. The cultivation of the pulse crop is invariably under rainfed conditions in the South and that too in marginal and sub marginal soils. This traditionally had precluded any technology breakthrough either in the agronomy practices or in the development of suitable cultivars.

The position of Karnataka compared to the national scenario was very dismal with an average yield of 320kg/ha compared to 830kg/ha and 760kg/ha in Punjab and Uttar Pradesh states by the end of VIII plan period. The pulses market is ill developed both within the country and internationally.

The relatively low share of irrigation and poor land resources allotted for pulses in Karnataka account for about 35 per cent lower yield compared to the national average of 634 kg. Even otherwise, the technology gap within the country between the lab and the land level will be illustrated by the average yields obtained by ICRISAT of Tur and Bengalgram at 1200 Kg/ha and 1500Kg/ha respectively.

4. EVALUATION OF THE MISSION OBJECTIVE

The strategy of the Technology Mission for Agriculture is simple. The perception that pulse is a low value crop deserving marginal soils and no irrigation has to be effectively countered. This is the overall task of NPDP and to achieve this, variable strategies have to be devised for different pulse crops under the Technology Mission Programme for pulses in Karnataka. The direction seems to be to encourage *inter-alia* protective irrigation for crops like Tur and gram. The other major pulses like urad and moong require a concerted effort to fit them into the irrigated cropping patterns. This could be either as a short duration khariff before the main crop or as a short duration rabi/summer crop for soil rejuvenation and production. These require taking stock of technology and proper packaging to make pulses an economic crop in the dry zones of the state.

The evaluation of the NPDP itself is stipulated in terms of achieving the Mission objective delineated above and is in addition to the financial aspects under study for the two Sector schemes.

5. NPDP AND THE SECTORAL SCHEMES

The functional aspects of the NPDP are spelt out in the guidelines issued by the Government of India in 1996-97 for implementation in the IX plan period.

The way the NPDP is structured and implemented shows that the TMA had formulated a strategy for technology upgradation, packaging, and implementation methodologies for augmenting the pulses cultivation in the State. The SDA is a partner in this programme for both technical and monetary support in administering the given package at the State level.

5.1 District Sector Scheme

The District Sector defines the activities into the categories listed below and the pattern of assistance available to the States for implementation of the same.

1. Training and Demonstrations Category
2. Seed Technology
3. Pest Management
4. Limited Mechanisation
5. Soil Fertility

5.2 Evaluation

5.2.1 Financial Aspects

The annual financial targets and achievements have declined in quantitative terms from year to year during the IX plan period. This shows the ad hoc nature of targets being assigned to the districts under the district sector. Changes in the subsidy components in the middle of the IX plan, had resulted in changing emphasis on different components over the years.

Certified Seed distribution is directly related to the sowing of pulses in the district. The percentage flow of this component typically followed the distribution of pulses area in the districts with Gulbarga and Bidar accounting for 51% of the seed distribution. As a technology mission scheme, one would expect a greater emphasis on the Training and Demonstration category. But, it has absorbed only 8% of the total outlay.

Capital inputs have absorbed 60 percent of the IX plan expenditure while others like soil fertility and pest management that have a direct relationship to the pulses cultivation in the districts, have accounted for a total of 28 percent. A deliberate and focused thrust in the earlier years to push sprinkler sets into the tur farmland could have changed the perception about providing protective irrigation in Tur and Bengalgram cultivation in the districts.

Pest management category that is directly relevant to the pulses technology and productivity in the districts have accounted for another 6% of the IX plan outlay in the State

The total financial achievements of the District Sector have added up to Rs 625.72 lakh for the entire plan period. The distribution of funds shows that the District Sector components were not implemented in a focused manner as a composite technology demonstrator in the district.

5.2.2 Physical Aspects

The crop wise details are not available for any of the district sector categories. Hence, crop wise focus of the categories in the different districts could not be evaluated.

Another important feature in the physical evaluation is that the over-achieving districts are the ones that have a progressive agricultural base with adequate absorption capacity for capital inputs and limited mechanization. If the input programmes are integrated and localized, certified seed with Rhizobium treatment to the soils could have impacted a maximum of about 4% of the area under pulses in the State. All the other inputs into the programme are technology demonstrators at best.

6. STATE SECTOR EVALUATION

The Guidelines specify three strategic objectives for the State Sector. They are:

Inputs procurement and logistics: The district wise disbursal of the subsidy under the State Sector indicates that traditional pulses growing belt in the State had a lions share in the

State Sector components. The district wise distribution of the components follows the pattern observed for CSD component in the District Sector. 62 per cent of the expenditure under the State Sector was in Gulbarga district followed by 7% in Bidar. This indicates that the seed multiplication was focused mainly on Tur.

The physical targets are in proportion to the technical parameters for the different stages of seed multiplication in the State. However, the foundation seed and seed village programmes have under-achieved to an extent of 50%. In financial terms, the maximum share of the State Sector components disbursement was in Gulbarga when the unaudited figures put it as much as 62% of the total seed component

Back office operations: The input procurement and logistics required for the different District Components were contracted to the PSUs of the State

The under achievement in the Salary component of the State Sector is a matter of concern since the State Sector is the soul of the Technology Mission. The back office functions like accounting and feedback have suffered since the funds allocated for the salaries were not utilised fully. The SDA could provide only unaudited financial statements for evaluation of the financial aspects. They are yet to reconcile them with the districts.

Technology backstopping: The State Sector is to provide the necessary expertise to put together the technology packages for the different districts as per the local conditions and provide a bottom-up feedback mechanism. The financial and the physical aspects of programme implementation at the grass root level of the SDA remained finance driven.

6. EVALUATION OF NPDP

6.1 Financial Aspects

Karnataka State had incurred an expenditure of Rs 625.72 lakh under the District sector Scheme and another Rs 205.07 lakh under the State Sector Scheme through the district units of SDA. The total plan expenditure on NPDP in the State therefore comes to Rs 830.79 lakh to be shared in 75:25 proportions between the Centre and the Karnataka Government. This includes the salary component towards the staff of NPDP unit at the SDA for the plan period reported at Rs 27.54 lakh.

6.2 Physical Aspects

Land and Water use: The total pulses production has not significantly increased nationally. But the fluctuations of yields in good and bad years are very much evident effecting both production and productivity of the pulses. An interesting feature at the national level is the decline in the “other pulses” category comprising mostly of the minor pulses during the Plan period

The area devoted to pulses as proportion of total area under cultivation in the state, had increased from 14.4% in 1997-98 to 15.9% in the year 1999-00. The area under Bengal gram is decreasing in the State due to the introduction of commercial crops like soyabean in the rabi cropping pattern.

The dominance of pulses during bad years accounting for over 30% of area and production prevailed during the IX plan period. Moong seems to be preferred by farmers as its proportion has increased significantly in the last 3 years. Of this 95% is

sown in kharif as rainfed crop.

Karnataka State has added substantial irrigation capacities in the first 3 years of the IX plan period almost by 30% from 14.7 lakh ha to 19.0 lakh ha between 1997-98 to 1999-00. However the irrigated area under pulses has actually come down from a low 4.4% to 3% over this three-year period.

The above facts clearly indicate the growing marginalisation of the crop in the cropping patterns of Karnataka. The decline in irrigation together with the significant role of minor pulses could explain that the pulse crop is increasingly becoming a purely rain fed crop in the state shifting to marginal lands from year to year as total cultivated area is increasing. In one sense, not only the minor pulses, the major pulses also are under threat of the vagaries of monsoon and are becoming high-risk crops even in the rain fed agriculture of the State.

6.3 Field Analysis

Nine districts were selected on the basis of their importance in pulses production in the state and in terms of financial and physical achievements registered in the different districts. The following observations could be made on the basis of field interactions with the farmers, field officers and others.

1. The departmental farms played a major role in the seed multiplication under the State Sector. However, they have been under-utilised, as the farmers were not aware of the technology implemented in the production programme adopted in these departmental farms.

If the performance of the departmental farms in pulses production for seed purpose is any better than the normal in the districts, perhaps these could function as the best technology demonstrators for NPDP. But no such effort seems to have been made to showcase these state sector activities that the technologist /scientist can do better than the local farmer which is a precondition for TMA.

2. The required follow up and analysis of the large-scale demonstration and Integrated Pest Management were not reported after 1998-99. This has resulted in transforming a technology mission into a subsidy-disbursing scheme like any other.
3. Diverting irrigation from traditional irrigated crops for one or two wettings of the pulse crop is a viable economic proportion to the farmers on the opportunity cost principle. But this message could not be conveyed through the NPDP in the State.

7. CONCLUSIONS & RECOMMENDATIONS

7.1 Conclusions

This section is based on the hypotheses that the TMA approach emphasises the technology component as an important one but a part of the overall management approach of handing the groups of stakeholder involved in the NPDP. The stakeholders include the scientists who are responsible for the technology packaging,

the farmers, the field level facilitating institutions and input suppliers. Only when all these stakeholders work together impact can be made on the field. The involvement of the scientist as a stakeholder in the NPDP was not evident in the State Sector while the district sector did not benefit from the scientists' inputs at any stage.

7.2 Recommendations

Karnataka is on the threshold of the take-off stage occupying 5th place in the national scene. A suitably restructured NPDP for the X plan could help pulses cultivation to break into the mainstream-cropping pattern of the State. In this context, the following aspects are considered vital for the success of the TMA for pulses in the state.

1. Putting the necessary institutions in place and make them accountable.
 - a. The Action Plan for X plan NPDP had recommended constituting a District Pulses and Oil Seeds Growing Board (POGB) in the potential districts with participation of the private (inputs and services) firms. The POGB will have decentralised day-to-day management with its own governing board and accountability for the performance of TMS in the districts. We strongly recommend the immediate constitution of POGB in the important pulses producing districts in the Northern Dry Zone and the Transition Zone and the Southern Dry Zones with a mandate to develop and implement technical packages for Tur, Bengalgram and Blackgram in these zones.
 - b. The role of the proposed Tur Board could be to coordinate with the Krishi Sampark Kendras as a single window facilitator for market intelligence, assembling local produce and enabling commodity transactions for all pulses.
2. Reorienting the existing institutions

The role of scientists in testing and dissemination of Technology in the field cannot be over emphasized particularly for pulses where a lot of ground work needs to be done before any concrete results can be seen on the field. The departmental farms are very under utilised and there is no technical and social audit of their activities in the district. It is recommended that the frontline demonstrations and block demonstrations should be conducted in the departmental farms of selected districts of importance for pulses production. The approach could help in promoting the locally proven technology to sustain the interest created with the subsidies provided in the initial stages of the programme.

To conclude, Scientists, field officers and farmer interaction is very important if the emphasis on technology dissemination is to continue as the main goal of the NPDP in the X plan. For this, the scientist has to be invited to come forward to demonstrate his technology package with incentives as necessary and the farmer should be free to adopt and innovate on his terms without any lure of subsidy. This would ensure accountability at both ends of the Technology Mission for Agriculture.