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INTRODUCTION

Agriculture continues to contribute about 25 percent of national income and remains a major sector that employs 60 percent of the labour force in rural India. A closer look at the agriculture sector for its progress in the last two decades in relation to the economic reforms would help to identify the challenges that face the sector and to provide potential policy and programme options that will increase agricultural growth which could directly contribute to overall economic growth and further reduction in rural poverty.

The public Extension System has undergone several transformations since independence and a lot of investment has been made on public research and extension system. These investments have been a major contribution to national success in raising food production from 51 million tons in 1950-51 to over 209 million tons today, thereby maintaining food security in the face of a huge increase in population.

Previous research and extension planning of the Government no doubt made an important contribution to agriculture development, but it needed to be overhauled to meet the technological needs of farmers during the 21st century.

Past extension planning was more fruitful in irrigated areas where profitability of new technology was high and management conditions in farmers' fields were not very difficult as compared to that of research farms. The above approach could not show significant impact in rainfed areas due to large heterogeneity and complexity in farming conditions.

Economic reforms initiated in the early 1990s had an indirect effect on the agriculture sector and its performance, it is important to examine various policy measures that have been implemented in the 1980s and 1990s that have had implications for the growth of the agricultural sector. The economic reforms initiated in 1991 provided a major jump start for liberalization of the agriculture sector as well. Prior to the initiation of economic reforms in 1991 the Indian agriculture sector was plagued with high levels of regulations, in the context of both domestic and external markets.

From 1965 to 1980, the agriculture sector was characterized by high level of investment in research and development with a focus on achieving self-sufficiency through increased agricultural production.

The green revolution technologies along with several policy support measures adopted and implemented such as fertilizer subsidy and extension system helped to achieve self-sufficiency in food grains by the early 1970s. Until the early 1980s the emphasis continued to be self-sufficiency in food grain production in staple crops such as rice and wheat.

In the process minor crops, such as oilseed and pulses had been given relatively less importance. Further, due to emphasis on irrigated agriculture in order to achieve food self sufficiency, the dry lands and marginal areas had to wait for their turn. The technology mission of the mid 1980s emphasized the development of dry land agriculture with national integrated dry land development programs and special technologies task force for the development of pulses and oilseeds. While the production of pulses and oilseeds increased through the technology mission its level remained low.

In the early 1990s the investment in agricultural research and development has seen a decline compared to levels in the 1970s. Furthermore, the production levels of cereal crops reached a plateau. The agricultural reforms that accompanied economic reforms in the 1990s have led to many policy changes in the ground. Yet, the impact of such reforms and policy measures on the performance of the agricultural sector in the 1990s compared to the 1980s is still being debated.

Over the past many decades the dissemination of agricultural technologies has not effectively percolated to the grass root level inspite of the presence of various extension agencies. An extension agency had been addressing the needs of farmers, but in an isolated manner with no co-ordination among themselves. Lack of sound feed back mechanism has been caused system fatigue. At present public extension services for agriculture is centrally directed and highly target oriented. Two changes in the extension approach would benefit. First, it would be desirable to move from fragmented message based extension process to a broad based farm management approach. Extension must be focused on conservation and better use of natural resource of basin and maximizing farm profits by assessing the market potential. Second, it would be rewarding to shift from "Contact-farmer approach to group approach".

The changing economic scenario in India and Jharkhand like the need for appropriate agricultural technologies and agro-management practices to respond to food and nutritional

security, poverty alleviation, diversifying market demand, export opportunities and environmental concerns are posing new challenges to the technology dissemination system. It is expected that future agricultural growth would largely accrue from improvements in productivity of diversified farming systems with regional specialization and sustainable management of natural resources, especially land and water. Effective linkages of production system with marketing and agro-processing; and developing an army of trained Private Extension Service Providers, and other value added activities would play an increasing role in the diversification of agriculture.

The agro-climatic planning approach was intended to take an integrated view of the agricultural economy in relation to resource base and linkages with other sectors implying future agricultural development specific to agro-eco regions with a multi disciplinary approach. Several key system constraints of previous extension system such as multiplicity of technology transfer system, narrow focus on agricultural extension lack of farmers focus and feedback, inadequate technical capacity within extension system, lack of local capacity to validate and refine technology, limited research-extension linkage, poor communication capacity, inadequate operating resources for extension etc. were identified.

The objectives of ITD component are to increase quality of technology being disseminated by the existing extension system, to become more demand-driven and responsive to solving farmers problems, strengthen research-extension-farmer linkage, increase the financial sustainability of the public extension system, move towards shared ownership of the agricultural technology system and generate replicable experiences that can be documented, analyzed and used in other areas.

For achieving the objectives of the ITD component, under institutional adjustments and operational changes, Agricultural Technology Management Agency (ATMA) a registered society under Societies Registration Act 1860 has been established in Ranchi district in 2007. It serves as the focal point for integrating research and extension activities and for decentralizing day to day management of the public agricultural technology system. All research and extension units within the each pilot district including KVK, ZRS, BAU or sub-stations, key line departments and farmers' representatives would become constituent members of the ATMA. ATMA would have linkages with all the departments of the government and research organization and other non-government organizations (NGOs) and

agencies associated with agricultural development in the district. For this ATMA has to develop demand-driven, situation specific, multi actor oriented Strategic Research in the project district. The SREP is the basic document which not only decides the development activities that need to be carried out, but also in which manner and by whom it is to be done.

A number of management tools have been developed which are helpful in facilitating farmers involvement in an effective manner. Based upon these tools, participatory methodology has been worked out for preparing the SREP. The present document has emerged through application of such tools in limited number of villages by selected multi-disciplinary team of Ranchi district.

The SREP has two sections i.e. diagnostic section and strategic section. In the diagnostic section, information about the district and different agro-ecological situations along with analysis of participatory data at the selected villages and SWOT analysis of the existing farming systems are covered. In the strategy section the proposed research and extension strategies and various activities under each strategy are explained. The modalities and operational guidelines are also indicated in the SREP.