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Extension Reforms and Innovations in Technology Dissemination-ATMA Model in India

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Introduction

Evolution of formal agricultural extension system

India's agricultural extension system is at a pivotal point in its evolution. Since independence, the extension system has focused on four major strategies, reflecting the dominant agricultural and rural development goals during each period. In looking back, the evidence suggests that investments in agricultural research and extension have served the country well, particularly in achieving food self-sufficiency. The basic extension machinery in India today is the outcome of the short-lived Grow More Food (GMF) campaign that was started by the then Food Minister Shri K.M. Munshi in 1947. This campaign fizzled for want of a formal extension organization. In 1948, Albert Mayer spearheaded the first post-independence extension program in the district of Etawah, in Uttar Pradesh in 1948. This was the first example of peoples' participation in rural development. It also marked the beginning of the multi-purpose, village extension worker that exists even today. Experiences generated through this pilot project were the precursors of the Community Development Programme (CDP) that was initiated in 1952 by the Indian Planning Commission (Singh et.al, 2005a).

The CDP was conceived as the main instrument of rural transformation in the country. The Ministry of Community Development and Cooperative was constituted to implement this project on a pilot basis in 55 project areas having 300 villages and a population of 200,000. The block was taken as the basic unit of development and administration. At this level, a team of subject matter extension officers were posted to undertake extension work in the fields of agriculture, animal husbandry, cooperation, industries, rural industries, social education, etc. Since rural people responded very favorably to the CDP, the program was scaled up in 1953 as the National Extension Service (NES) to provide wide coverage to extension work at less cost and with more people's participation. This arrangement became the permanent setup for extension in the country.

The late 1950s saw large-scale food deficits in the country, thus compelling the Government to abandon all-round rural development and to concentrate on increasing food production. In April 1959, an Agricultural Production Team sponsored by the Ford Foundation highlighted the importance of self sufficiency in food. The Team, in its report entitled "India's Food Crisis and Steps to Meet It," suggested that intensive efforts should be made to increase food production by using a combination of technical know-how and concentrating manpower and resources in selected areas. This was the beginning of the Intensive Agricultural District Program (IADP) or, more commonly, the Package Program. The introduction of the Training-and-Visit (T&V) extension system was an important milestone in the history of extension in India. The basic premise of T&V was that there was enough technology available awaiting diffusion to and adoption by the farmers. The T&V extension system was first introduced in 1974-75 on a pilot basis in the Chambal Command area of Rajasthan and Madhya Pradesh. Based on positive feedback, the project was further extended to 17 other states in 1978-79. Thus the CDP, and its multi-purpose approach, was gradually replaced by the organized

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extension system of single line of command focusing on the major food grains and the national goal of food security. (Swanson and Mathur, 2003)

Since independence, the extension system in India has focused on four major strategies, reflecting the dominant agricultural and rural development goals during each period. The evidence suggests that investments in agricultural research and extension have served the country well, particularly in achieving food self-sufficiency. In 1952 to implement Community Development Programme (CDP) on a pilot basis in 55 project areas having 300 villages and a population of 200,000, block was taken as the basic unit of development and administration. Subject Matter Extension officers were posted to undertake extension work and rural population responded favourably to the CDP, it was scaled up in 1953 as the National Extension Service (NES) to provide widespread extension coverage and with more people's participation. In April 1959, an agricultural production team sponsored by the Ford Foundation highlighted the importance of food self sufficiency and suggested intensive efforts to increase food production by using a combination of technical know-how and concentrating manpower and resources in selected areas. This was the beginning of the Intensive Agricultural District Program (IADP) or, as more commonly known, the Package Program.

Launching of T&V Extension system in 1974–75 on a pilot basis in the Chambal Command area of Rajasthan and M.P. was an important milestone in the history of extension. The basic premise was that there was enough technology available awaiting diffusion to and adoption by farmers. Based on positive feedback, the project was further extended to 17 other states in 1978–79. Thus the CDP's multi-purpose approach was replaced by a single-line of command extension system that focused on the major food grains toward the national goal of food security. The T&V System was effective in disseminating Green Revolution technology, especially in the high potential, irrigated areas, but it had little effect on the productivity and incomes among farmers in rain fed areas (Swanson and Mathur,2003, Singh et.al.2005c).

In mid-1990s, the Govt. of India and the World Bank began exploring new approaches to extension that would address these system problems and constraints resulting in new, decentralized extension approach, which would focus more on diversification and increasing farm income and rural employment. The central institutional innovation that emerged to address these system problems was the Agricultural Technology Management Agency or "ATMA" model that was introduced at the district level to:

- Integrate extension programs across the line departments (i.e., more of a farming systems approach),
- Link research and extension activities within each district, and
- Decentralize decision-making through "bottom-up" planning procedures that would directly involve farmers and the private sector in planning and implementing extension programs at the block and district-levels.

This model was pilot-tested through the Innovations for Technology Dissemination (ITD) component of a World Bank-funded, National Agricultural Technology Project (NATP) that became effective in 1998 and concluded in June 2005 (World Bank. 2005a). Planning Commission, Govt. of India constituted a working group on Agricultural Extension for formulation of XIth Five Year Plan Approach (2007-2012) with Shri J.N.L.Srivastava as its Chairman; the working group critically reviewed the existing approaches, strategies and ongoing schemes and submitted their recommendations on the Agricultural Extension approach for the XI Five Year Plan (GOI, 2007).

Major findings of the Working Group:

- Existence of wide extension gap
- Lack of holistic technology transfer system
- Narrow focus of agricultural extension system
- Lack of convergence
- Inadequate technical and extension competency of extension functionaries
- Shortage of manpower in critical areas
- Inadequate involvement of all stakeholders
- Weak Research-Extension-Farmer-Market Linkages
- Inadequate operating resources for extension

Major tenets of the recommended extension approach by Planning Commission:

- The proposed approach to extension would mainly focus on these vulnerable groups.
- The ATMA approach of ITD component of NATP has created significant impact on yields and incomes of farmers. It was up scaled to 252 districts under Extension Reforms in the country and the experience suggests that adequate funds are to be made available to reach large number of small / marginal and women farmers.
- Services of innovative and progressive farmers will be utilized as change agents / para professionals who would solve the acute problem of manpower shortage at field level through Farm schools and Farmer Field Schools.
- Adequate attention is to be given to build the capacity of extension functionaries and farmers to promote Farmer-led Extension. This would be achieved through concerted efforts and continuous capacity building of stakeholders.
- Developing farmers organisations and federating them at block/district/state level and linking the economic activities with market assumes greater significance to reduce the innovation adoption period, attain the power of scale of economies and collective bargaining in the present context to sustain the developmental efforts.
- Market led Extension which would enable the farmer to realize better prices for their farm produce and maximize the farm incomes be promoted.
- The integration of Research, Extension, Farmer and Market linkages, need to be addressed by undertaking research and extension activities through the participatory technology development mode, creating a Research-Extension-Farmer and Market coordination committee at state level to take necessary policy initiatives to enable and establish linkages.
- At district level R-E-F-M linkages would be ensured through ATMA.
- Diversified and Integrated farming system approach needs to be emphasized with the research and extension agenda determined explicitly by farmers' needs through an understanding of the existing farming systems.
- It is essential to route all the state and Central Government extension fund through single agency like ATMA to synergise and converge these efforts.
- A system may be placed in position for effective coordination, monitoring, concurrent evaluation, application of timely corrective measures and a decentralized decision making process at zonal level for all the centrally sponsored schemes.
- With a view to support extension intervention by private sector, project based funding with clearly defined outlay-outcome matrix with log frame approach would be promoted.
- Public-Private Partnership needs to be promoted for sharing of resources and convergence.
- To promote private investment in Agricultural Extension, it is felt essential to provide fiscal incentives.
- Understanding of the roles performed by farmwomen and the needs and constraints faced by them in the field would be addressed appropriately and the existing allocation of 30% of funds for extension activities exclusively for women should be continued.

Concept of “ATMA MODEL”/ Extension Reforms

The Agricultural Technology Management Agency (ATMA) is an autonomous organization registered under the “Societies Registration Act of 1860” that has considerable operational flexibility e.g.; it can receive and dispense government funds, enter into contracts, maintain revolving funds, collect fees and charge for services. In addition, it operates under the direction and guidance of a Governing Board (GB) that determines program priorities and assesses program impacts. ATMA is headed by the Project Director or PD under the NATP, and reports directly to the GB as Member Secretary. The PD helps coordinate and integrate all agricultural research and extension activities carried out within the district (Singh et. al. 2005a and Singh, 2006).

Strategic Research and Extension Plan (SREP)

One of the first tasks of ATMA is to facilitate the preparation of Strategic Research and Extension Plan (SREP) of the district. The SREP is prepared through participatory methodologies such as Participatory Rural Appraisal (PRA) involving all the stakeholders and farmers. The SREP contains detailed analysis of all the information on existing farming systems in the district and research – extension gaps required to be filled-up. It also prioritizes the research–extension strategies within the district. It becomes the basis for developments of work plans at block / district level.

State Extension Work Plan (SEWP)

Based on the research-extension strategies given in the SREPs, block/ district level plans are developed by each ATMA. The State Extension Work Plan developed at state level shall contain a consolidated activity-wise plan incorporating all the District Agriculture Action Plans (DAAPs) in the state and state level activities to be carried out with activity-wise budgetary requirement as per the norms prescribed in the cafeteria. It will also indicate all other extension activities that may be undertaken from out of resources provided under any other scheme of the Centre/ State Governments. The DAAPs developed under the scheme should be processed consistent with Article 243 ZD of the Constitution.

ATMA Governing Board

ATMA Governing Board sets program priorities and provides guidance as to how research and extension programs are implemented within the district. The GB is chaired by the District Magistrate. The primary functions of the GB are to review and approve the Strategic Research and Extension Plan (SREP) for the district, to review and approve annual work plans, and to set policies and procedures for ATMA operations.

ATMA Management Committee

The ATMA Management Committee (AMC-IIM) serves as the Secretariat of the GB and helps coordinate and integrate research and extension activities within the district. Program requests come from each block in form of Block Action Plan through FIAC and the AMC scrutinizes these requests on the basis of technical, financial and management criteria. The line departmental heads, ZRS, KVK, NGO and representatives from farmers’ organizations are responsible for planning and reviewing of the day-to-day activities of ATMA.

ATMA Personnel

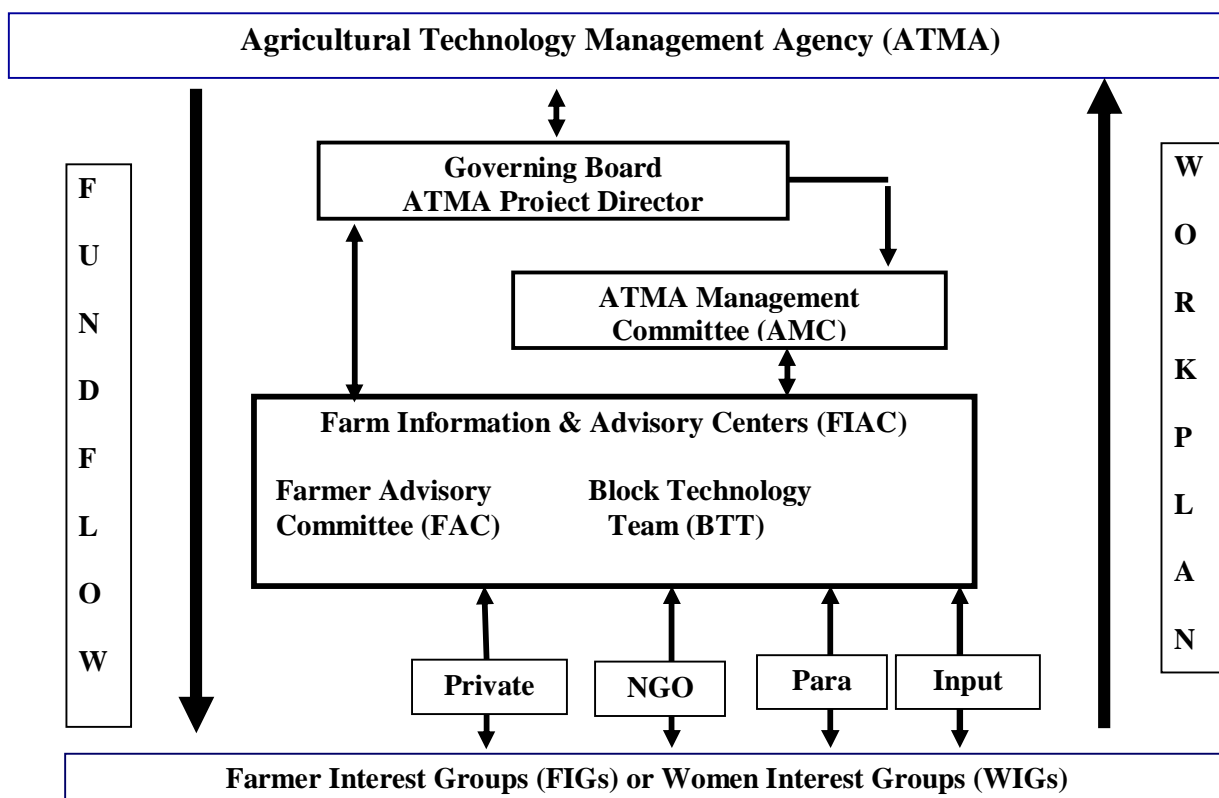
By design, the number of personnel assigned to ATMA headquarters is very small, to ensure that this organization does not become another government agency. The ATMA staffs include Project Director, a Deputy Project Director (DPD), an Accountant, a Computer Operator, a Secretary-cum-Stenographer, and a Peon-cum-Watchman. All the support staff are hired on a contract or redeployed.

Extension Mechanism

Farm Information and Advisory Centres (FIAC)

Farm Information and Advisory Centers (FIAC) at block level manage the key extension programmes within the block and are considered as the extension planning and operational arm of ATMA. It is the common forum for meeting and interaction between line departments and farmers including other stakeholders in preparation of detailed extension programmes and coordinated the implementation. The FIAC team comprising of BTT and FAC, and is responsible for operationalizing the SREP in each block and moving toward a single window extension delivery system. The FIAC team prepares Block Action Plans (BAPs) with detailed extension activities to be undertaken. This plan is approved by the FAC before being forwarded to the ATMA Management Committee (AMC) for ensuring that these plans are technically and administratively feasible, and consistent with the SREP, which then forwards it to Governing Board (GB) for approval.

Figure 1: Organizational Structure of ATMA



Source: Singh, K.M., 2006

Block Technology Team (BTT)

Operationalization of Block Technology Team (BTT) as a mechanism for integrated planning and delivery of the extension services to the farming community another key innovation promoted and pilot tested in the project. The line department officers at the block level drawn from departments such as agriculture, horticulture, animal husbandry, dairy, fisheries, forestry and sericulture form the Block Level Technology Team.

Farmer Advisory Committee (FAC)

A key element in this new, 'bottom-up' extension planning strategy is the formation of FAC in each block. These FAC are composed entirely of farmers who represent different socio-economic categories of farmers within the block. The FAC reviews and approves the annual BAP, monitors and provides feedback to the BTT on its implementation. FAC chairs are now being elected to the ATMA

GB to strengthen the linkage between FIG leaders at the village level and farmer representation on the ATMA GB.

Extension Mechanism at Village Level

Farmers Organization (FO)

As a part of the extension reforms, the NATP project focused on group approach as a means to technological transfer in the villages to have better coverage. Farmers groups are encouraged at village level and these groups in turn, evolve into Commodity Associations (CAs), Marketing Cooperatives and other types of FOs at the block and district level. At village level Farmer Interest Groups (FIGs) and Women Interest Groups (WIGs) are effectively involved in the preparation of group action plans, which were later integrated into the block action plans.

Advisory and Consultative Team of Farmers

In some of the districts, few society like institutions have come up at village and block level after learning the benefit of group approach. These societies have created their own infrastructure like small buildings, transportation facilities and guiding the farmers about the market demand and prices and also collecting the produce of farmers for the sale.

Experiences/ Evaluation reports of NATP-ATMA- ITD pilot testing

The Innovations for Technology Dissemination component of NATP pilot-tested a decentralized, market-driven extension model that focused on: (1) organizing farmers around suitable and high-value crop, livestock, and other enterprises for which there was a ready market; (2) integrating extension programs across the line departments and coordinating research and extension activities at the district level; (3) involving stakeholders in decision making and making extension more accountable to farmers; (4) strengthening links with research to develop and test technologies for higher-value enterprises that would be appropriate for small-scale farmers and local agroclimatic conditions; (5) focusing on environmentally sustainable technologies, including integrated pest, soil nutrient, and water management; and (6) creating a range of public-private partnerships to increase farmers' access to markets, market information, and technologies for high-value agricultural enterprises.

The implementation of the ITD component of NATP was monitored and evaluated (M&E) by an independent agency, the Indian Institute of Management (IIM), Lucknow. The resulting M&E reports revealed that these institutional and operational reforms, as outlined above, had been largely achieved (IIM Lucknow, 2004a). In addition, IIM Lucknow documented the following project impacts:

- More than 10,800 crop or product-based FIGs had been organized at village level, with 85 FAs or FFs being organized at the block and district levels.
- Approximately 700,000 farmers, including over 100,000 women farmers, directly benefited from these new extension programs through a combination of exposure visits, farmer training courses, on-farm trials, demonstrations and so forth.
- More than 250 farmer-led, successful innovations had been implemented and documented within the ATMA districts (IIM-Lucknow, 2004b).
- Many ATMAs, such as in Maharashtra, developed strong partnerships with private sector firms, ranging from poultry marketing; organic farming; the production, processing and marketing of medicinal & aromatic crops and export commodities (basmati rice, baby corn, snow peas, etc.); to jointly operating Information Technology (IT) kiosks in collaboration with block-level FIACs.
- ATMA programs have contributed directly to increased rural employment through agricultural diversification, such as the production, processing and marketing of high-value, labour-

intensive crops and products, such as vegetables, mushrooms, vermi-composting, floriculture, medicinal plants, fisheries, poultry, dairy and beekeeping.

- Finally, ATMAs have promoted eco-friendly, sustainable agricultural technologies, such as integrated pest management (IPM); Integrated Nutrient Management (INM); organic farming; and the use of water conservation practices, including well recharging, converting from water-intensive crops, such as paddy and wheat, to water extensive crops, such as vegetables, floriculture, maize, oilseeds and pulses. Also, all ATMAs have promoted the use of micro-irrigation systems.

In addition to these institutional and technological innovations, IIM-Lucknow empirically documented the following impacts of the ATMA approach on the cropping systems and farm income in the 28 project districts during the four-year period from 1999-2003:

- Horticultural cropping area increased from 12 to 16%
- Oilseed crop area increased from 3 to 11%
- Herbs, medicinal and aromatic crop area increased from 1 to 5%
- Area planted to cereals declined from 55 to 47%, but yield increased 14% resulting in no loss in total food crop production.
- Average farm income in project districts increased 24%, in contrast with only 5% in non-project districts (Tyagi and Verma, 2004).

Brief history, Objectives and Working mechanism of Extension Reforms Scheme

The X Five Year Plan Approach Paper as mentioned in earlier sections, called for radical overhaul of extension services and significant improvements in sophistication of technology dissemination methodologies. It highlighted the need for specific measures to ensure that research technology development and extension services meet the special needs of farmers (GOI, 2007).

Policy Parameters Governing the Cafeteria:

In order to ensure that key reforms under the scheme are adequately addressed, the new scheme specifies the following policy parameters within which the ATMA programme is to be implemented:

- **Multi-agency extension strategies:** In order to ensure promotion of multi-agency extension strategies, minimum 10% of allocation on recurring activities at district level is to be used through non-governmental sector viz. NGOs, Farmers Organization (FOs), Panchayati Raj Institutions (PRIs), Para-Extension Workers, Agripreneurs, Input Suppliers, Corporate Sector etc.
- **Farming system approach:** The activities specified in the Cafeteria are broad enough to ensure extension delivery consistent with farming system approach and extension needs emerging through SREPs.
- **Farmer Centric Extension Services:** The Cafeteria provides for group-based extension as it has necessary allocation for activities related to organizing and supporting farmer groups. In order to supplement these efforts, a provision for rewards and incentives to the best-organized farmer groups has also been provided in the cafeteria.
- **Convergence:** The SREP will also be a mechanism for ensuring convergence of all activities for extension. At present, resources for extension activities are being provided under different schemes of Center/ State governments. However, under the scheme, it is being mandated that the Work Plan to be submitted by the State Governments for funding under the scheme shall explicitly specify the activities to be supported from the resources of other schemes as well as from the proposed scheme.
- **Mainstreaming Gender Concern:** The gender concerns are being mainstreamed by specifying in the Cafeteria that minimum 30% of resources on programmes and activities are utilized for

women farmers. Similarly, 30% of resources meant for extension workers are proposed to be spent for women functionaries.

- **Sustainability of Extension Services:** With a view to ensure sustainability of extension services, it is being mandated that minimum 10% contribution should be realized from beneficiaries with respect to beneficiary oriented activities.

The Policy Framework for Agriculture Extension (PFAE) and experiences under ATMA approach have also been directed towards similar strategies and a new scheme by the name “Support to State Extension Programmes for Extension Reforms” is now being implemented in all the 588 districts of the country. Under the scheme funding support shall be provided to the States/ UTs for undertaking extension reforms within the broad purview of PFAE, complying with its key areas/norms, and is being operated based on Extension Work Plans prepared by them. Inter-alia, the following key reforms, in line with the PFAE is being promoted under this Scheme:

- **New Institutional Arrangements:** Providing innovative restructured autonomous bodies at the district/ block level, which are flexible, promote bottom up and participatory approaches, are farmer driven and facilitate public- private partnership.
- **Convergence of line departments’** programmes and operating on gap filling mode by formulating Strategic Research and Extension Plan (SREP) and Annual Work Plans.
- Encouraging **Multi Agency Extension Strategies** involving inter-alia public/ private extension service providers.
- Moving towards integrated, **broad-based extension delivery** in line with farming systems approach.
- Adopting **Group Approach to Extension** (Operating through Farmer Interest Groups (FIGs) & Self Help Groups (SHGs).
- Addressing **gender concerns** (mobilizing farm women into groups, capacity building etc.).
- Moving towards **sustainability of extension services** (e.g. through beneficiary contribution).

Organisational Structure and Key elements of Extension Reforms

The organizational structure and key elements are under Extension reforms have been mentioned above, which is same as under ATMA-NATP, with some changes as like introduction of a Cafeteria of activities and cost norms as mentioned below:

Cafeteria of Activities

The Cafeteria includes cost norms and ceilings applicable for each activity. Under the Cafeteria, activities to be undertaken at State and District level are categorized separately. The state level activities include support for upgrading state level training institutions such as SAMETI, HRD of extension functionaries, organization of state level Agri-Exhibitions and Monitoring and Evaluation of the Scheme.

District level activities are further categorized in four groups namely, farmer oriented activities, farm information dissemination, research-extension-farmer (R-E-F) linkages and administrative expenses.

Farmer oriented activities include development of SREP, mobilization of farmer groups, training/exposure visit of farmers, field demonstrations, all aimed at empowering the farmers and improving their participation in technology dissemination process.

Under the category **farm information dissemination**, local level agricultural exhibitions, information dissemination through printed materials and development of technology packages in electronic form are covered.

The **R-E-F linkages** based activities include organization of Farmer-Scientist Interaction at local level, organization of Field-days and Kisan Goshties and support for local level researchable issues emanated from the SREP.

The **administrative expenses** under district level activities provide support for running ATMA like Institutions and a few block level Farm Information and Advisory Centres. It has been specified in the Cafeteria that funds for 'Farm-Information Dissemination' category can't exceed 20% of total resources available for district level activities under the Scheme. These percentages for 'REF Linkage' and 'Administrative Expenses' categories are 15% and 20% respectively. Any savings in any of these three categories could be utilized for 'Farmer-Oriented Activities'.

The cost norms and ceilings may be exceeded by a maximum of 10% of the specified amount in exceptional circumstances by a local decision. All such cases shall have to be reported in the next year's Work Plan and shall be subject to ex-post guidance. Any other deviation from the prescribed norms/ ceilings or any new activity not specified in the Cafeteria could be taken up by States with prior approval of the DAC. If the sum total of all activities specified in the cafeteria is more than the funds likely to be available for State/district level activities. States then have to prioritize their proposed activities based on gaps identified in the SREP.

Up Scaling ATMA model through Extension Reforms Scheme

The Extension Reforms scheme in 588 rural districts is to be implemented, based on their Extension Work Plans developed within the broad framework of the PFAE and areas indicated under the cafeteria of reform oriented activities. The States propose the new institutional arrangements, similar to ATMA, they intend to put in place in the First Work Plan, or even earlier, to be submitted by them to the DAC for approval. This agency will have the responsibility of implementing the extension reforms at district level.

New Institutional Arrangement - Agricultural Technology Management Agency (ATMA)

Agricultural Technology Management Agency (ATMA) is a district level body created under the ITD component of NATP for pilot testing Agricultural extension reforms. This is as an autonomous institution with participation of all the key stakeholders involved in agricultural activities for sustainable agricultural development. It has the flexibility to receive funds directly (Government of India/States, Membership fees, beneficiaries' contribution etc).

ATMA has the main responsibility of all the technology dissemination activities at the district level. It has linkages with all the line departments, research organizations, non-governmental organizations and agencies associated with agricultural development in the district with a substantial representation of farmer organizations. Research and extension units within the district, such as KVKs, ZRSs, Departments of Agriculture, Horticulture, Animal Husbandry, Fisheries, Sericulture, Marketing, are constituent members. The scheme provides flexibility to the states to propose institutional framework similar, (not necessarily the same as ATMA of ITD-NATP) suited to its own situations while preserving the key features of ATMA. The decentralized institutional framework proposed by the states should also be consistent with Article 243 G of the Constitution.

Challenges/ constraints in the implementation

During a workshop titled Extension and Rural Development: A convergence of Views on Institutional Approaches carried out in 2003, a number of key elements were identified as important in the process of decentralizing national extension systems. It was noted that during the process of decentralizing, a national extension system can be influenced by factors beyond extension's control, especially changes

in government policies and regulations. However, the following issues were identified as essential factors that directly affect the performance of a decentralized extension system:

Legal Framework: There is a need to establish a legal framework and structure of authority that defines the decentralized extension levels and how they relate to each other (Silverman 1992). For example, there should be enabling legislation and/or regulatory rules that describe the role and define the tasks to be performed at each level of the decentralized extension system and specify coordination mechanisms among the different levels that are essential to the success of decentralized decision-making within the extension system (Cohen and Peterson 1999; Shah 1998). **Stakeholder Participation:** There is broad agreement that widespread participation of local stakeholders (different categories of farmers, plus representatives from private-sector firms, rural banks, NGOs and other groups) is an essential element in a decentralized agricultural extension system. This participation should be through formally organized advisory committees and/or governing boards that represent all of the major stakeholder groups within the service area.

Strengthening Local-level Management Capacity: Decentralized extension systems need adequate managerial capacity at the lower system levels to carry out the specific responsibilities that are devolved to them (Parker 1995). Improving managerial capacity can be achieved through a combination of personnel development, information technology and revised organizational structure to fit local conditions (Cohen and Peterson 1999). For example, making use of new information technology tools allows a decentralized extension system to collect and manage district and sub-district management information; at the same time, these tools reduce the need for some middle-level administrative activities.

Improving Technical Capacity: Enhancing the knowledge and technical skills of extension agents and adopting a user-oriented extension approach are key factors affecting the success of decentralization. Effective linkages with research, adequate in-service training, sufficient access to subject-matter specialists and establishing online access to technical, management and marketing information are all key elements in improving the technical and management capacity of the field extension staff.

Operational-level Funding: Adequate funding for local level extension units is essential for the successful implementation of decentralized public extension systems. Lack of adequate operational funding for actual extension programmes and activities is one of the most serious constraints that undermine public extension systems in most developing countries, and this is especially true for decentralized extension systems. **Accountability:** Maintaining transparency and accountability to stakeholders is another key element to improving the performance of decentralized agricultural extension systems. If decentralization is to work, agricultural extension workers must be accountable to those who benefit from these services and to agencies that fund these programmes. In other words, a transparent system of accountability is important for shareholders and stakeholders alike to take ownership over the programmes and impacts of a decentralized extension system.

Some specific problems faced by ATMA at field level (Singh, K.M., 2006)

- Operationalization of BTT is a major problem before ATMAs, as most of the positions are vacant due frequent transfers or non-filling of the positions all together; this has seriously hampered the ATMA mandate. BTT officials are frequently deployment to other departmental works which results in poor performance.
- The BDO (superior officer to BTT Convenor) did not come under the purview of ATMA and he had little understanding of the concept leading to weak performance in some blocks.

- Success of ATMA model centres much on the vision, understanding and commitment of the PDs, therefore, continuity during the project period is essential, for overall achievements of the project objectives.
- Project Directors from research background were found more innovative, committed and successful in their approach. Therefore selection of right person for the PD's job is very important, for which a suitable mechanism needs to be found, merely deputing peoples from line departments or SAU's would not be enough.
- Deployment of district heads of line department for law & order duties by the District Magistrate-cum-Chairman, ATMA, hampers the work.
- Convergence of various Central and State sponsored programmes with its activities is difficult in absence of clear cut policy directives from the state government.
- In order to execute its envisaged roles and functions ATMA GB is required to meet regularly on quarterly basis, but meetings of Governing Board are not regular in the districts. Attendance in GB meetings is also an issue, especially with respect to official members. The activity of GB was mostly limited to sanctioning action plans / investment proposals and other items brought before it, where as it could have played a more proactive role.
- The idea to appoint District Magistrates as ex-officio Chairman of the ATMA GB did help administratively, but DMs are loaded with a lot of developmental responsibilities from the states along with law & order duties, as a result they could find little time in spite of their interest in ATMA.
- In case of the State Nodal Officer appointed to coordinate between ATMA & State Govt., much needs to be done.
- IDWG is not very effective in providing leadership to the ATMA activities in the state as its meetings were few and far between and its decisions are not implemented in some cases. The Chairman of IDWG had little control over the other departmental heads and therefore convening of meetings was difficult the State Government should appoint a senior officer of the rank of Chief Secretary to chair the IDWG.
- The role of SAMETI in a project state was to function as mini-MANAGE for PIAs it however barring a few cases it did not properly cater to the HRD needs of the ATMAs. Most positions in SAMETI are vacant for varying periods.

Best practices/ Innovations in Extension Reforms for Technology Dissemination

Many States are implementing initiatives that contribute to revitalization of the extension system. These best practices are briefly stated below:

Andhra Pradesh

- Polambadi (Farmers School) are providing extension support through on field demonstrations and training for 16 weeks. Agriculture Officers or trained farmers act as facilitators. Each Polambadi benefits about 30 farmers. 6947 Polambadies have been organized since Rabi 2004, benefiting over 2 lakh farmers. Polambadies have reportedly shown 30-40 per cent increase in knowledge.
- Farmers' awards- season-wise and sector-wise.
- Group Approach for transfer of technology to farmers.
- Preparation of village action plan on knowledge gaps.
- Annual capacity building programme for all levels of agriculture extension officers/staff.
- Strengthening of 22 farmers training centres.
- Monthly visit of SAU's scientists to the assigned villages.
- Organizing Rythu Chaitanya Yatra, i.e., visit of integrated interdisciplinary team of agricultural and allied department's officers to each of the 55,000 habitations for imparting training on technological gaps to about 22.5 lakh farmers.

- Involvement of NGOs.

Bihar

- Kisan Samman Yojna-Instituting farmers' awards at State, district and block levels. State level awardees would also be nominated for Padma Awards.
- Farmer Professors - Promoting farmer-to-farmer extension.
- Engagement of Krishak Salahakar (Agri-Consultants) in all Panchayats to work as para extension workers on remuneration-cum-fee basis.
- Crop demonstration in every Panchayat.
- Farmers' fair in every block.
- Farmers' training/demonstration at village level.
- Promoting market-led extension.

Chhattisgarh

- Promoting group approach for transfer of technology to farmers.
- Awards to farmers.
- Involvement of NGOs.

Goa

- Promotion of group farming, including higher incentives/subsidy for farmers groups.
- P-P-P in Extension

Gujarat

- Krushi Mahotasava organized in 2005-06, 2006-07 and 2007-08.
- An integrated team of scientists, departmental officers, NGOs and agri-students visit each of 18,600 villages for providing knowledge and other support.
- Progressive farmers are involved in extension.
- More than 40 technology packages have been prepared in electronic form for distribution directly as well as through the web.

Haryana

- Critical extension messages were communicated to farmers through their children studying in school.
- Information dissemination through sale outlets of input dealers.
- Promoting Kisan Clubs of progressive farmers.

Himachal Pradesh

- Tableau on Kisan Call Centres in the Republic Day Parade of the State.
- Involvement of NGOs.

Jammu & Kashmir

- Providing extension functionaries at the Panchayat level under Rehbar-e-Ziraat scheme.

Jharkhand

- Training of farmers at state level training institutes.

Karnataka

- Farmers award at district and block levels.
- Promoting Farmers Field Schools.

Kerala

- On farm trials, frontline demonstrations and participatory
- Technology development.
- Krishi Bhawan at each Panchayat.
- 16366 Agro-Clinics constituted.
- Extension support to farmers groups.

- 165 Information Centres.

Madhya Pradesh

- Extension delivery through public extension functionaries.
- Kisan Mitra, Kisan Didi, Farmers Clubs would also be involved in extension.
- Promoting Farmers Field Schools.
- PPP in extension.

Maharashtra

- Promoting Farmers Field Schools.
- Establishing Agro-Poly-Clinics at block level.
- Involvement of NGOs.

Orissa

- Promotion of commercial agri-enterprises- entrepreneurial training, capital investment subsidy, etc.
- Farmer-to-farmer field schools.
- Providing Krushak Sathi at Gram Panchayat level.
- Training to farmers groups.
- Promoting Gram Krushak Manch (GKM) at village level with involvement of Panchayat functionaries.
- Issuing farm advisories on fortnightly basis and disseminating it through schools, GKMs, Panchayats etc.
- Training and capacity building of input dealers on soil and water testing on PPP basis.
- Involvement of NGOs.

Punjab

- Farmers' training at district, block and village levels.
- Active involvement of KVKs in training and frontline demonstrations.
- Skill up-gradation of extension functionaries.
- PPP on contract farming through PEPSICO.
- Promoting Farmers Field Schools.
- Involvement of NGOs.

Rajasthan

- Krishi Yojanaen Aapke Dwar- a pre-Rabi Panchayat level campaign to reach out to farmers.
- Jal Chetna Yatra – a pre-Kharif Panchayat level campaign to reach out to farmers with special focus on conservation and efficient use of water.
- Specialised/employment oriented training of farmers at SAUs and other institutions.
- Inter-State exposure visit of farmers.
- Establishing 5 disease forecasting units and 7 planned health clinics.
- Use of TV and radio programmes for extension support.
- Several initiatives for women empowerment- promotion of drudgery reduction equipment, distribution of seed mini kits training, stipend to girl student studying agriculture and providing benefit of scheme in the name of women farmers.
- Involvement of NGOs.

Tamil Nadu

- Farmer's awards.
- Farmers Field Schools.
- Contract farming on maize.
- Involvement of farmers groups and NGOs in organizing pre-season campaigns in all villages.
- Opening of facilitation centres at block level.
- Cluster approach and group approach for extension.
- Facilitating contractual arrangement between farmers and end users for cash crops.

Uttarakhand

- Training to progressive farmers, contact farmers and service providers. Deployment of one master trainer per block for training of farmers. Involvement of KVKs in training to para professionals.
- Mobile extension team for dissemination of information and distribution of inputs.
- Promotion of women friendly implements.
- 4 villages have been selected per block for convergence of all extension activities.
- Involvement of NGOs.

Uttar Pradesh

- Farmer-to-farmer extension through Kisan Vidyalaya at each Nyaya Panchayat.
- Providing one Mitra Kishak at each Gram Sabha.
- Mobilization of trained progressive farmers for extension work at village level.
- Linking of farmers' clubs with ATMA.
- Training of NGOs, input dealers, para extension workers for implementation of extension activities.
- Farmers Field Schools.
- Krishi Unnayan Pakhvada.
- PPP for extension activities.
- Establishing 5 Community Radio Stations.

West Bengal

- Capacity building of farmers on post harvest technology.
- Involvement of NGOs.

Sikkim

- Posting of 1 Extension Officer in each block.
- Posting of 1 VLW at each Gram Panchayat.

Andaman & Nicobar

- Setting up of 10 Rural Knowledge Centres with hub at the Directorate.
- It is evident from the above that several best practices have been adopted by a large number of states. These are briefly stated below:

Innovations in Implementation

ATMAs began by working with the line departments and research centres within the district to carry out a participatory rural appraisal as part of developing a strategic research and extension plan for the district. An important part of the participatory appraisal is to identify success stories of entrepreneurial farmers who have supplied specific markets with higher-value products. These success stories are assessed in terms of their potential to involve significant numbers of small-scale farmers in these new enterprises. The resulting Strategic Research and extension Plan (SREP) is carefully reviewed, and if approved by the ATMA Governing Board, provides the framework for reviewing block action plans (BAPs) that are submitted annually by each BTT for funding by the ATMA. The ATMA approach makes extensive use of farmer-to-farmer extension services, including exposure visits to see how FIGs in other districts/states supply different markets with high-value products and the use of experienced "farmer professors" who help with farmer training. ATMAs also form public-private partnerships with input suppliers, agro-processors, or other buyers to organize on-farm demonstrations and farmer training and/or provide technical supervision in maintaining product quality. (Singh,K.M.,2006)

The Reforms intend to address the identified constraints of technology dissemination system through comprehensive set of institutional and operational reforms in pilot districts that would begin to delineate the future direction of the extension system and bridge serious research-extension-farmer linkage gaps. Key operational reforms promoted include decentralization of decision-making

(financial, functional, administrative and managerial), reversal of planning process from ‘top-down’ to ‘bottom-up’, strengthening of Research-Extension-Farmer-Market linkages, sharpening of focus on Farming System Approach, and integrated delivery of services with active farmer participation.

Operational Innovations

Strategic Planning

Departing from the traditional top-down practice, planning process began with Strategic Research and Extension Plan (SREP) for the pilot districts in Bihar viz; Madhubani, Muzaffarpur, Munger & Patna, which was prepared at district level after the systematic assessment of technological gaps, issues, needs and problems pertaining to various farming systems prevailing in those districts. On the basis of important factors like topography, type of soil, rainfall, types of crops grown, the sources of irrigation and flooding characteristics different Agro-ecological Situations (AES) are identified and representative villages based of various agro-ecological factors are identified within the districts for preparation of situation specific, farmers-demand oriented SREPs. The information is collected using PRA techniques and participatory methods for the preparation of SREP. Secondary information is collected from different governmental publications, and also from the records of the different govt. departments, banks and District Statistical Office. While strategies are long-term in nature, activities are systematic steps to achieve these strategies. Ongoing departmental activities were dovetailed and the missing links identified for ATMA support. Each Strategy is translated into activities, which spelt the size of unit, total units required, cost per unit and total cost in respect of each activity.

Procedural Innovations

On the basis of strategies and activities in the SREP and local priorities as gathered from farmers’ feedback, Block Technology Team (BTT) prepares Block Action Plans (BAP). The BAP submitted to AMC for technical and financial scrutiny. To avoid duplication of efforts, the AMC vets the BAP activities against line departments’ regular program/activities and make necessary alterations in the plan. After thorough discussion in AMC block action plans are consolidated into district action plan for extension activities. By adding plan for HRD and capacity building at district level and infrastructure and establishment costs an Annual Action Plan or Investment Proposal are prepared by the ATMA office and submitted to the Governing Board for its approval after discussion and thorough examination. It is then submitted to the State Nodal Office which consolidates it into a State Work Plan for approval of the IDWG and for submission to DAC for release of funds.

Innovations in Implementation

Bottom-up Planning

Main outcome of bottom-up planning process was a better assimilation of farmers’ requirements and problems and farmers’ empowerment. Where ever there were technological/extension/ adoption gaps in crops and enterprises, they were assessed in a systematic manner so that it improved the understanding of extension functionaries. Apart from reversing the planning process (from top-down to bottom-up) decision-making has also been decentralized to a great extent. Keeping in view the strategic thrust in SREP, annual / seasonal block action plans are prepared to facilitate technology dissemination using innovative process like exposure visits, trainings both technological and managerial, demonstrations, field days, IT support etc. through the farmer groups.

Continuous Farmers Feedback

Farmers are actively involved in field exercises for SREP preparation, which improves their understanding of participatory assessment and planning processes. Farmers’ awareness about the recommended technologies for various crops and enterprises has also increased. Now they are better

placed to compare the prevalent practices with recommendations. As a result, they were putting demand on the extension system through grass root workers and FAC. This is the first time farmers' concerns are systematically integrated in District Agricultural Planning Process.

Flexibility in ATMA Operations

District Plans prepared by ATMA are compilation of BAPs after their technical and financial scrutiny by AMC. The plan provides ample flexibility to alter even approved plan depending upon intermittent requirements. Decentralized decision-making mechanism and in-built operational flexibility have enabled ATMA to take innovative steps and respond promptly and adequately to farmers' needs/problems. Such flexibility made significant contribution in making the extension system demand-driven.

Current Status of Extension Reforms Scheme

Presently ATMA is being implemented nationwide in 588 districts of the country with the help of funding from the Government. Some of the important achievements of ATMA programme since its launch in May, 2005 and up to March, 2009 are briefly given below:

1. Institutional arrangements have been completed viz:
 - o State Agriculture Management & Extension Training Institute (SAMETI) at State level – 30 States/ UTs.
 - o Establishment of ATMAs at district level – 262 districts
 - o Constitution of Block Technology Team at Block level – 2258 blocks.
 - o Constitution of Farm Advisory Committees at Block level – 2150
2. Preparation of SREPs – 243 ATMAs.
3. Over 7,500 Farmer Interest Groups have been mobilized at village level.
4. Over 10.00 lakh farmers including 2.98 lakh farm women (27%) have been benefited through farmer oriented extension activities since inception up to December, 2006 as given hereunder:
 - o Exposure visit – 16,044
 - o Farmers Training – 1,16,125
 - o Demonstrations – 2,08,180
 - o Kisan Goshties/ Melas – 6,65,420

Achievements and Impacts

The incremental benefits to the farmers from the ITD component are accruing from productivity improvement, diversification and efficient farming (due to better management of inputs and new technology), as documented in the implementation Completion Report of the World Bank (World Bank, 2005b). The analysis of sample project beneficiaries revealed that:

- o Gross cropped area increased by 12%;
- o Crop productivity increased by 12 to 43% for major crops;
- o Diversification has occurred with increased share of income coming from horticulture as compared to the 'without' project situation.
- o Consequently, the average farm income increased by 21% due to the ITD interventions.
- o Over 10.00 lakh farmers including 2.98 lakh farm women (27%) have been benefited through farmer oriented extension activities since inception up to December, 2006 as given hereunder:
 - o Exposure visit – 16,044
 - o Farmers Training – 1,16,125
 - o Demonstrations – 2,08,180
 - o Kisan Goshties/ Melas – 6,65,420

States have been provided model terms of reference for commissioning independent monitoring and evaluation at the state level. It provides for monitoring on quarterly basis and impact evaluation on

annual basis. Himachal Pradesh and Rajasthan have already commissioned this evaluation. Several other states have invited bids for the purpose.

The specific impacts are given in the table below:

ITD impacts on productivity, area and income

Project Impacts	Unit	Without Project	With Project
Gross cropped	Area Ha/household	5.76	6.44
Crop productivity			
Paddy	t/ ha	3.1	3.5
Wheat	t/ ha	2.3	2.6
Maize	t/ ha	1.8	2.4
Gram	t/ ha	0.6	0.8
Groundnut	t/ ha	1.2	1.4
Sunflower	t/ ha	0.8	1.1
Cotton	t/ ha	0.7	0.9
Fruits	t/ ha	40.5	45.8
Vegetables	t/ ha	11.8	16.9
Average farm income	Rs/household/year	79,658	96,386
Income source			
Agriculture	%	60	53
Horticulture	%	20	26
Animal Husbandry	%	19	18
Fisheries	%	0	1
Sericulture	%	1	2

Extension Manpower

At present, there are about 20661 public functionaries of agriculture department at Block level as well as about 58398 workers at the village level. The KVKs would have a total of about 3000 scientists at the district level. In addition, about 4000 agripreneurs have set up their ventures under the Agri-Clinics scheme. There are also about 3 lakh input dealers, who are, in many cases first point of contact of farmers for advice. The corporate sector, NGOs, FOs, Cooperatives, etc. are also contributing to the availability of extension functionaries on the ground. Progressive farmers could provide a large resource base for extension support.

Financial and System Sustainability Issues in Extension Reforms Scheme

The resources required for the scheme shall be shared between centre and the state in the ratio of 90:10. The 10% state's share shall consist of cash contribution of the State, beneficiary contribution or the contribution of other non-governmental organizations (The actual contribution made by other than the State Government in a year may be counted for the next year's State's contribution). Funds for the Extension Reforms Scheme are normally released in two instalments in a year. Release of second instalment depends upon furnishing of Utilization Certificates that become due and release of corresponding State's share against funds released earlier by the Center. The permissible carry over of unspent balance is 25% of the annual allocation. This permissible carry over is adjusted in the second instalment. Funds are released to States through an autonomous Institution identified by the States concerned, which is closely linked to State Agriculture Programmes or through the State Agricultural Management and Extension Training Institute (SAMETI).

Project activities at district level are monitored by the ATMA Governing Board at periodic intervals. At State level, the project is monitored through a mechanism similar to those existing in ATMA, i.e., an Inter Departmental Working Group (IDWG) functioning under Chairmanship of APC or Secretary (Agriculture) of the state. The monitoring mechanisms include quarterly reports, field inspections, workshops, etc. The Cafeteria specifically provides for third party Monitoring and Evaluation to be organized as a state level activity. The DAC also organizes concurrent Monitoring and Evaluation, including impact evaluation, as needed as part of its scheme “Extension Support to Central Institutions”.

The Scheme guideline stipulates the following:

- Under District Level Activities resources for different activities are prescribed with ceilings viz. Farmer Oriented Activities (45%), Farm Information Dissemination (20%), R-E-F Linkages (15%) and Administrative Expenses (20%). Funds from last three activities could be diverted to the first category of Farmer-Oriented Activities.
- Operational Expenses under State Level Activities, District level Activities and Innovative Activities include technical assistance, consultancies, special studies, workshops, library, internet, telephone and other contingencies including accommodation for FIAC meetings.
- Block level Farm School can be operationalized by a combination of demonstration, training and related eligible activities. If the Farm School are run by Non Government sector, they would be eligible for service charges as per approved norms.
- State neither should engage any regular staff nor meet the salary of the regular staff working under ATMAs/SAMETIs from the operational cost provided in the Cafeteria. Any contractual staff, if engaged, should be strictly through a placement agency. Maximum number of full time contractual staff to be engaged by SAMETI & ATMA shall not exceed six and four respectively.
- For demonstration, training and Exposure Visits, the details of items of expenditure and related costs would be as approved under an appropriate scheme of the Central/ State Govt. Otherwise, prior approval would have to be obtained from IDWG.

Additional Guidelines for State-level activities under Extension Reforms Scheme

- Programmatic funds to be spent on rainfed areas at least in proportion to the extent of rainfed areas in the district.
- Minimum 10% of Beneficiary Contribution to be calculated on sum of the four activities aggregated at state level activities listed in the Cafeteria. However, the beneficiary contribution in respect of SC, ST, Women beneficiaries as well as for beneficiaries belonging to North Eastern and Hilly States has been reduced from 10 to 5 percent.
- Minimum 10% of the allocation on recurring activities at district level is used through non-governmental sector viz. NGOs, FOs, PRIs, cooperatives, para-extension workers, agri-preneurs, input suppliers, corporate sector etc
- No expenditure to be incurred from out of Government of India’s resources on staff salary, infrastructure, civil works, vehicles or subsidy unless specifically provided for in the scheme.
- Minimum 10 % of Beneficiary Contribution to be calculated on sum of the four activities aggregated at state level namely – Farmers’ Training; Demonstration; Exposure Visits and Capacity Building of farmers groups listed in the Cafeteria.
- Minimum 30% of resources meant for programmes and activities are to be allocated for women farmers and extension functionaries.
- Minimum 10% of the allocation on recurring activities at district level is used through non-governmental sector viz. NGOs, FOs, PRIs, cooperatives, para-extension workers, agri-preneurs, input suppliers, corporate sector etc.

- No expenditure to be incurred from extension work plan allocation on in-eligible items. In the event of any such expenditure, the in-eligible expenses are deducted from the State's next year's allocation
- Cost norms and ceiling proposed may exceed by 10% of the limits given above under exceptional circumstances.
- Any deviation over and above the limits and any new activity not mentioned in the above cafeteria could be taken up by the States with prior approval of DAC.
- Under District Level Activities resources for different activities are prescribed with ceilings viz. Farmer Oriented Activities (45%), Farm Information Dissemination (20%), R-E-F Linkages (15%) and Administrative Expenses (20%). Funds from last three activities could be diverted to the first category of Farmer-Oriented Activities.
- Operational Expenses under State Level Activities, District and block level Activities and Innovative Activities include technical assistance, consultancies, special studies, workshops, library, internet, telephone and other contingencies including accommodation for FIAC meetings. The operational cost for block level also includes cost for hiring of vehicles and POL.
- If the Farm School are run by Non Government sector, they would be eligible for service charges as per approved norms.
- State not to engage any regular staff or meet the salary of the regular staff working under ATMA/SAMETIs from the operational cost provided in the Cafeteria. Any contractual staff, if engaged, should be strictly through a placement agency. Maximum number of full time contractual staff to be engaged by SAMETI & ATMA not to exceed six and four respectively.
- For demonstration, training and Exposure Visits, the details of items of expenditure and related costs would be as approved under an appropriate scheme of the Central/ State Govt. Otherwise, prior approval would have to be obtained from IDWG.
- The "Extension Work Plan involving the non-governmental sector implementing agencies may be prepared at the State level at the discretion of the Chairman, IDWG, without having to obtain recommendation of the BTT/FAC and approval of ATMA, GB concerned. After SEWP has been approved by the DAC, State functionaries shall facilitate necessary coordination between the non-governmental partner and ATMA institutions at the district level so that approved activities are implemented expeditiously. Funds to non-governmental sector partner may also be released at the State level, at the discretion of the Chairman, IDWG. Necessary funds for the purpose may also be retained at the State level.

Experiences of ATMA-NATP vis-à-vis Reforms Scheme

The initial phase of pilot testing of ATMA model achieved tremendous success because of several operational and procedural reforms and innovations. However the performances of different ATMAs were quite mixed. Dedicated leadership, vision and need-based strategic planning helped many of the ATMAs to excel continuously. But now it is felt that the ATMAs are facing difficulties in maintaining the same pace of progress and there is apprehension that it is inching towards the same fate as the earlier extension models had. (Singh,K.M., 2006)

Comparative features of ATMA under NATP-ITD vis-à-vis Centrally Sponsored Scheme "Support to State Extension Programme for Extension Reforms"

Particulars	ATMA under Support to State Extension Programme for Extension Reforms	ATMA under NATP-ITD
Distribution of resources for different activities	<ul style="list-style-type: none"> - Farmer oriented activities 45% - Farm information dissemination 20% - R-E-F linkages 15% - Administrative expenses 20% 	No such ceiling on activity-wise expenditure. To be done as per action plan approved by ATMA GB.
Beneficiary contribution for beneficiary oriented activities	Beneficiary contribution of the tune of 10% (Min.)	No such precondition imposed, ATMA's were free to decide on beneficiary contribution, but was not mandatory. In most cases there was no beneficiary contribution at all.
Resources for women related programmes and activities	Expenditure on Women related issues 30% (Min.)	No such ceiling imposed, the expenditure could vary according to the location specific need and the priorities of respective ATMA and as per their activity plan.
Allocation of Resource for conducting programmes	A minimum of 10% resources to be spent through NGOs, FOs, PRIs, Cooperatives, Para-extension Workers, Agri-entrepreneurs, Input suppliers, Private business houses	No such ceiling imposed, the expenditure could vary according to the location specific need and the priorities of respective ATMA and as per their activity plan.
Expenditure on staff salary, infrastructure, civil works, vehicles etc.	No expenditure allowed	Full cost was met from the central funds.
Cost norms and ceilings proposed under different heads	May exceed by 10% under exceptional circumstances.	Re-appropriation allowed within Recurring and Non-Recurring heads up to 10% if ATMA GB felt so. PD entitled to decide.
Appointment of Project Staff	Not specified, states to decide on their own	On redeployment or deputation or contractual appointments for project period only.
Funding to the Scheme/ Project	90% central support and 10% to be states contribution (pay & allowances to be necessarily borne by state)	100% central funding, no state share needed.
Whether Top-down or Bottom-up	Mostly top down as many restrictions have been imposed on number of activities, expenditure etc.	Truly bottom up approach as it was ATMA GB, which used to decide about the activities, their numbers and frequency based on the SREP for the

		district.
Establishment of Farm Information & Advisory Centres (FIAC)	The scheme proposes a maximum of 10% block or 2 whichever is less to be undertaken for establishment of FIAC from project funds. The financial support is also for one year only. It would be difficult to sustain them Under the new scheme it would be difficult to select the 1 or 2 blocks where FIAC could be established as this would lead to lot of administrative problems.	All the blocks in the district were to have FIAC for which a separate building was provided either to constructed new or any old building was to be renovated with project funds.
Funds for establishing FIAC	The scheme only provides funds for IT infrastructure of the tune of Rs. 1.30 lakh; civil works have to be undertaken by the respective states.	Funds to the tune of Rs. 2.50 lakh per block were provided for all the blocks for civil works alone. Separate funds were allocated for office furnishing and procurement of IT infrastructure.

Other Factors: Some of the factors which are responsible for ATMAs not doing as well as they did under NATP can be listed as below:

Insufficient support: The same technical support and funding available during the pilot stage is not available at the expansion phase.

Mismatch with diversity of application contexts: The uniform model is struggling to cope with the wide diversity in Indian agriculture in terms of different crops, livestock, rural enterprises, infrastructure, governance, local institutions and ethnic groups, social and economic status of farmers.

Lack of local ownership: Since the model was centrally conceived and promoted it suffers from lack of ownership and is treated as just one more central scheme that state level extension services have to implement.

Capacity and institutional constraints: Lack of dedicated manpower, functional autonomy and attitudinal barriers at all levels. Apart from bringing some additional resources for extension activities ATMA has failed to address some of the major institutional challenges of agricultural extension. For instance, even now extension functions as an agency for technology dissemination and is funded and evaluated for this function only. There is also an apparent reluctance to deal with some of the operational bottlenecks that constrain development of public-private partnerships and which are probably a prerequisite for reinventing extension.

Restricted financial flexibilities: The financial flexibility available in the pilot testing phase has been fairly trimmed off. There are several restrictions, which have been imposed to regulate the expenditure and flow of fund but these have become serious impediments in the way of accomplishment of several goals. These also constrain real implementation of bottom up approach.

Conclusion and Way forward

Decentralizing a large, complex national extension system is not easy, but the Government of India appears to be moving toward this long-term goal. Although ATMA model has been successful in addressing many of the extension problems and has shown exceptional impacts during the NATP phase but it seems to be going the T&V way. It is therefore, imperative that in the country like India, which has a vast territory and extremely diverse socio-economic and agro-climatic situations, ATMA model should be introduced and implemented with utter cautious. Different ATMAs should be empowered with sufficient administrative, financial and implementation flexibilities to address the basic problems in their operational jurisdiction.

The use of FIGs to mobilize men, women, and young people around common interests, such as the production of flowers, fruits, vegetables, milk, fish and other high-value products, has energized both the farming community and the extension staff. Many FIGs have joined to form farmer associations or federations that can gain economies of scale in serving larger markets. Developing strong farmer organizations is a positive and necessary step in providing cost-effective extension services that will increase the income and employment of small-scale and marginal farm households. The block-level FACs are operational in most project blocks, but rural women and other disadvantaged groups still need more representation. Internal conflicts continue between priorities set by the ATMA Governing Boards and the heads of the line departments in allocating central government resources. The BTTs are still learning how to work together in utilizing a farming systems approach with multiple funding sources.

There is no doubt that something that resembles a 21st century vision of agricultural extension is needed and this means substantial reforms in public policies and services. Adding urgency to this is the ever-increasing complexity of agricultural sector development and the sector's acknowledged role in poverty reduction. Of course, it is all too easy to criticise new approaches, such as ATMA. It is also important to realise that in a country like India and, indeed, elsewhere, administrative traditions and realities place limits on what is possible and politically feasible even as a pilot. But the challenge remains of how to break out of this best practice to best fit impasse.

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