Introduction

This paper briefly describes, compares, analyzes the methodologies and tools being used for monitoring and evaluation (M&E), and finally M&E experience of two major agricultural development projects in India namely Diversified Agricultural Support Project (DASP) being carried out in 32 districts of Uttar Pradesh and 5 districts of Uttranchal and National Agricultural Technology Project (NATP) being carried out in seven states of India (Andhra Pradesh, Bihar, Maharashtra, Himachal Pradesh, Jharkhand, Orissa and Punjab). Innovations in Technology Dissemination component of NATP is being implemented in four districts in each state as a pilot project in phased manner. Both the projects are for a period of five years and started almost at the same time.

Besides monitoring and evaluation of a few other projects in India, Agriculture Management Center (AMC) at Indian Institute of Management Lucknow (IIML) is actively involved in Monitoring and evaluation of these two projects.

These two projects, despite having different objectives, have many things in common as the ultimate aim of both the projects is to improve the quality of life of rural people through various interventions focusing on improving the agricultural productivity, diversifying farming system for value addition, providing infrastructure support, promoting grass root level institions like Farmers Interest Groups and Self Help Groups, and improving research-extension-farmer linkage, focusing on demand-driven location-specific technology development and dissemination system, reorganizing agricultural administration for decentralized governance for effective convergence of services and manpower as an integrated and holistic approach of development. However, both the projects are being implemented in active collaboration with line departments and greater involvement of farming community. A brief description of these two projects is given in following paragraphs.

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**Diversified Agricultural Support Project (DASP)**

Initially this project was started in 27 districts of U.P. during 1998, but after creation of Uttranchal- a new state- three districts were reduced. Later on, 8 new districts were added after three years and now the project is being implemented in 32 districts of U.P. and five districts of Uttranchal.

The mission of the project is to utilize unlimited potential of the state through participatory approaches, empowerment of farmers, development of rural infrastructure to support agriculture & allied enterprises for sustainable development and to ensure poverty reduction & better tomorrow. The prime concern of the project is to bring farmers’ prosperity by “intensification and diversification of agricultural activities through active participation of farmers empowering them to create self-reliant and sustainable process and structure. However, the main objective of the project is to increase agriculture productivity and income of farmers through diversification of agricultural production systems; promote private sector participation in agricultural development process; improve rural infrastructure, and marketing support; strengthen grass root level institutions; improve research and Extension Linkages; promote Bio-Village and Seed Village concept; setting up of ATMA for effective coordination and convergence of resources, and finally policy reform of privatization of farms, cold storage, and sharing of cost, etc. The project follows bottom-up, demand driven, participatory group approach and broad-base extension system and shift from input delivery to extension education and management.

**National Agricultural Technology Project (NATP)**

National Agricultural Technology Project is primarily field-testing important institutional innovations and decentralized program planning within the agriculture extension system. In the history of World Bank it is the first project that has been prepared by a National Agricultural Research System (NARS) by itself. The main aim of the project to solve production system problems for which technical solutions exists. This project is demand driven, location specific, and multi-disciplinary in nature operating in program mode. The planning process is 'Bottom-up' and envisages strong linkages between institutions and disciplines and research and extension agencies. The program addresses issues relating to equity and effective delivery of technology generation and dissemination in location specific mode. It is being implemented in close co-operation with Indian Council of Agricultural Research (ICAR) institutions, State Agricultural Universities (SAUs), State Department of Agriculture & other line departments, public research organizations, NGOs and private R&D organizations.
This project has three major components and Innovation in Technology Dissemination (ITD) is one of the main components focusing on improving/reforming the existing extension system for efficient & effective dissemination of available technologies suited to local condition and farmers’ requirements. Besides, it also aims at identifying and bridging the gap (through improving Research-Extension-Farmer linkage) between required and available technologies in the changing farming situations. The project intends to achieve these objectives through a set of institutional and operational reforms at various levels, viz., IDWG (Inter-Departmental Working Groups) at state level, ATMA at district, FIAC (Farmers Information Advisory Center), consisting of BTT and FAC (Farmers Advisory Committee) at block, and FIG/FO (Farmers Interest Groups and Farmers Organizations) at village level. In this demand-driven, farmer-accountable and bottom-up approach, farmers’ organizations have to play a crucial role.

With comprehensive institutional and operational reforms, this project is expected to improve the quality and type of technologies being disseminated by the extension system with an emphasis on location-specific recommendations, diversification and intensification of different farming systems, and sustainable yield-enhancing technologies; enable the Research-Extension system to become more demand-driven and responsible to solving farmers’ problems; strengthen Research-Extension-Farmer linkages especially feedback; increase the financial sustainability of the public extension system; move towards shared ownership of the agricultural technology system by key stakeholders; generate replicable experiences that can be documented, analyzed and then used in expanding this approach to other districts in future projects; and develop new partnerships with private institutions including NGOs.

Since this project focuses on institutional strengthening and process, it is necessary to monitor performance of various institutions like ATMA, FIAC, FIG/FO, etc. in terms of their institutional maturity, administrative/operational capability, financial viability/sustainability in discharging their role more effectively through collective decision-making and greater involvement of farmers, etc.

**Monitoring and Evaluation: Concept and Approach**

In India, performance of agricultural development programs/projects has mixed response in attaining the desired objectives. It has been observed that even well conceived agricultural projects have suffered from implementation problems. Partial or complete failure of these projects/programs is attributed to a number of reasons such as absence of meticulous planning and non-adherence to the plan in terms of the agreed processes, lack of sufficient preparatory time before initiation of field work, insufficient fund and delays in disbursement
and procurement; institutional weaknesses, delayed staff recruitment and frequent transfers, absence of an effective and efficient coordination mechanism (applicable especially in case of multi-disciplinary and multi-implementation-agency projects), lack of ownership among line departments, traditional mind set of bureaucracy, poor research-extension linkage, inadequate attention to social issues and poor beneficiary/government interaction, lack of involvement of the ultimate stakeholders in planning and implementation leading to absence of ownership among them, and low priority given to monitoring and evaluation of project activities.

Of late, it has been realized that an effective monitoring and evaluation mechanism is an essential component for the success of any project, especially where multiple implementing agencies are involved both at the top and field level and the target group consists of diverse categories of disadvantaged people. It is also necessary because a number of institutional and operational mechanisms, which require effective vertical and horizontal integration as well as systemization aiming towards decentralized well-coordinated decision making and functioning.

**Monitoring** in the present context was mainly to keep an eye, which, with the help of mind, can see, observe, interpret, analyze and provide feedback on the implementation of activities. Since various functionaries are involved in the implementation process, monitoring takes the form of Performance Monitoring (performance in terms of physical achievements) and adoption of desired processes. M&E mainly focuses on both (1) the progress monitoring (input-output monitoring or target-achievement monitoring) and (2) process monitoring. The progress monitoring emphasizes on physical achievements vis-à-vis targets i.e. performance of associated institutions/agencies with respect to activities they are supposed to carry out and the output they are expected to generate. While the process monitoring focuses on the steps being followed by them in carrying out these tasks while progress monitoring focuses on the achievement with respect to established milestones of physical and financial targets, quality of services and process adherence. All these helped the project in providing feedback to the top management for timely corrective measures to keep the project on right track.

**Evaluation** may also be concurrent or terminal. The concurrent evaluation system allows mid-way interventions (in terms of introducing required strategic changes) in project implementation along with providing an assessment of degree of attainment of project objectives. While terminal evaluation system provides an assessment of achievements of the project interventions in terms of project targets/goals and objectives, but after completion of the implementation leaving no room for initiating corrective measures.

Effective Monitoring and Evaluation system helps in indicating the path of progress of the project through the project implementation process and puts the project on right track
by facilitating timely corrective measures, while the evaluation system provides information on whether the project has reached the right destination (in terms of fulfillment of objectives) and in timely fashion, cost effective way, and through right route. This also provides better alternative routes to reach the same destination in a more cost effective manner.

The experience of both the projects shows that internal monitoring has remained a routine type of supervision with inherent bias of top down administrative machinery.

**Tools and Methods**

In case of both the projects, Monitoring & Evaluation is based on simple and easily measurable indicators that can describe or measure change (both process and progress) in various activities/components across locations and over time. Finally, they provide useful relevant information about the performance of the project in achieving the intended objective as end result. Theses indicators provide valuable insights to the project implementing agency like a traveller that how far the project has travelled and how far still it has to travel and by which route to achieve the desired result in specified time. Indicators used in these projects are both qualitative and quantitative, reflecting achievements of physical and financial targets and improvement in the quality of services delivered by the project interventions.

The relevant information for estimating the values of indicators are collected through specifically designed format and code sheets by qualified and well-trained field functionaries (Project Assistants) fully acquainted with the area and has interest to spent adequate time in the field. Besides, active cooperation of the field project staff and regular interaction with PCU as well as line department (nodal agencies) are also maintained. The information collected from the field are regularly computerised to develop data base through MIS so that required information can be obtained easily and well in time to make necessary changes in the direction of the project implementation process. Monitoring and evaluation is being carried out by a combination of various methods including review of progress reports, on-site crosscheck, interactive discussion with implementers and the recipient group, sample household survey, and PRA with especial focus on participatory monitoring and evaluation approach.

In brief, for carrying out concurrent project implementation monitoring following steps/processes is being adopted:

- Designing of activity schedules for each and every project activity with details of responsible person/agency, time requirement, and resource allocation.
- Development of performance indicators (qualitative and quantitative) and format for data collection in the field on the basis of activity schedule.
• Periodic review with special focus on time and quality adherence in the execution of project activities and identification of gaps and constraints faced by the field staff in carrying out their task.

• Regular and timely reporting of short and detailed observation to the District Project Coordinators (DPCs)/Project Director (PDs), concerned functionaries and top management i.e. Project Management Unit (PCU).

• Such report is primarily action-oriented report and contains specific action point/area of corrective measures required by concerned person. The issues requiring immediate attention of the project management are indicated through a brief note, exclusively prepared for urgent action and given to the DPCs and PDs with a copy to Project Unit for follow up action.

• In the next visit these actions are again reminded to the DPCs and PDs as well as discussed in the monthly meeting of all the nodal officers and DPCs being organised at the PCU level.

• The compliances of line departments are reviewed and further action is taken on pending observations requiring attention.

• Performance/functioning of new mechanisms/interventions as well as success stories are also properly documented.

• Regular dialogue between AMC-IIML and Project Coordination Units are maintained and findings are personally discussed in regular meetings with field functionaries and PCU staff.

However, it was noticed that rigid M&E system do not work for such types of projects as it involves innovative processes with considerable flexibility leading to day-to-day changes in implementation methodology depending upon location-specific problems.

**Periodicity of M&E**

As have been mentioned earlier that despite many things are common in these two projects, methodology for M&E is quite different for both the projects. In case of DASP monitoring is being done monthly directly by AMC-staff while in case of NATP (ITD component), frequency of M& is quarterly and also done in collaboration with various State Agricultural Universities in different regions and states. In addition, AMC staff regularly visits all the districts (28 districts in seven states) and submit independent reports to the Ministry of Agriculture and the World Bank. Main findings of these reports are discussed in the quarterly review meting at the Ministry of Agriculture, Government of India and also with the World Bank review Team. The Directorate of Extension, Ministry of Agriculture follows up the
major actions with the concerned PDs of ATMAs and also with the State Nodal officers. The compliance of the actions suggested is reviewed again in the next meeting to ensure action taken on various aspects and also the problems faced in implementation. Close interaction with PDs and also with senior state level as well as Government of India level officials helps in expediting the matter quickly.

Since NATP focuses on invigorating/renovating/streamlining/creating the existing agricultural administration and extension system as well as creating and strengthening the grass root level institutions, improving vertical and horizontal linkage between grass level institutions and above, promoting public and private partnership, M&E also focussed on sustainability of these institutions for continuing the agricultural extension education system.

Attempt was also made to examine the economic viability of various income generating activities as micro enterprises initiated under the project. In the initial stage, focus of M& E was more on process and then shifted to progress and finally on evaluating the adoption and impact of various interventions. This provided feedback to the Project Management Unit to identify the promising activities for consolidating their efforts to concentrate on viable interventions.

The experience of M&E of both the projects are presented in the following paragraphs. However, it is to be noted here that though both the projects are being monitored by the same agency, the results vary to a large extent because of differences in the M&E approach, methodology, time, activities/interventions, implementation process and also involvement of various agencies. The experience of one project (DASP) is based on more than four years of monitoring and that too on monthly basis while the experience of another one (NATP) is based on the experience of less than 18 months and that too on quarterly basis. Besides, periodicity of M&E of both the projects there are other differences in the method and approach of carrying out M&E of these two projects.

Major Findings

Since both the projects mentioned above are mainly process projects, effective M&E has helped in strengthening the process in the right direction and minimizing the necessary delay in taking corrective measures for smooth functioning of the project. The experiences of these projects in brief are given in the following paragraphs.

Experience of UPDASP

In U.P. Diversified Agriculture Support Project (UPDASP), initiatives have been taken for holistic approach for transfer of technology based on farming system approach. All the activities are being implemented through active involvement of people, especially the Group
members. A number of Farmer Interest Groups (FIG), Commodity Groups (CG), Women Self Help Group (WSHG) are being formed in villages with the help of NGOs. Initiatives have also been taken to start slowly recovering the full cost of services and inputs and gradually withdrawing from direct provider of services like inputs and technology dissemination activities. To make the technology dissemination demand-driven based on the needs of people, for each project district a Strategic Research and Extension Plan (SREP) was prepared by adopting PRA/RRA techniques by the team of experts. Thus, by adopting group approach, planning extension strategies through active participation of farmers, a demand-driven farming system based extension strategies with ‘bottom up’ approach are emerging.

This project is being implemented in two states namely U.P. and Uttranchal, overall performance of various activities varies to a large extent in both the states and also in old and new districts. Hence, generalisations of results may be misleading.

The demand driven approach has started well and presently the district plans are being prepared based on the Village and Block plan reflecting the demand of the people. The project has been helpful in improving the research-extension-farmer linkage by regular interaction with State Agricultural Universities and KVKs/KGKs. The universities are conducting large number of location-specific adaptive trials and the results are being printed and distributed to the farmers. The scientists have become more responsive in focusing their research efforts to meet the requirement of the farmers.

The U.P. has distinction of having a U.P. Council of Agricultural Research (UPCAR) and helping the project in improving the required research needs of the project. UPCAR is helping the project in different ways but more specifically its role in improving the research capacity of the university and close linkages in the field is quite encouraging. The competitive research grant provided by UPCAR has also helped university scientists as well as private agencies to take up demand-driven location-specific research. The refinement in indigenous technologies, expected to be widely accepted by the farmers, are being tested through validation trials for dissemination to farmers.

The availability of quality seeds is a major problem but the initiatives taken by the project to promote production of quality seeds through identifying a few villages as “SEED VILLAGE” has improved the access to quality seeds to farmers at reasonable rate within the village. This has resulted into seed replacement in cereal crops by 33 percent in the project area compared to 13 percent in non-project area.

The promotion of horticultural crops, especially fruits and vegetables has been quite encouraging and the area and productivity of these crops has increased considerably. However, area under fruits has still not increased much. However, rejuvenation of old
orchard has been initiated at many places and has good impact. A large number of trials of
promising varieties have been conducted, which has increased the awareness/interest among
farmers for its cultivation. In addition, private nurseries have been promoted a large number
of them have started working well, but still availability of seeds is a major problem. Though
attempts have been made for promotion of cold storage for reducing the post harvest losses
but marketing is still a major problem before the farmers. Besides, processing of fruits and
vegetables for value addition has still not been effective. Private nursery

The technology dissemination system has started functioning in very effective
manner. A number of innovative approaches have been adopted for dissemination of
technology to the farmers. Farmer-led extension and concept of establishing Farmers School
in each block is progressing well. Many of them are quite effective in technology transfer and
also have started moving toward financial sustainability by charging some fees for the
services. However, it has to go a long way.

The impact assessment of the project shows mixed results regarding improvement in
the bottom up planning, demand driven approach, decentralized governance, diversification
of agricultural activities, and necessary infrastructure support like road and market. The
results of impact survey clearly indicate that 17 percent of sample farmers have shifted their
area from food grain crops to vegetables and other cash crops. Cropping intensity has
increased from 169 to 200. Area under non-food grains has increased by 27 percent.
However, decline in the area under cereals has been compensated by increase in the yield.
The area under horticulture has increased by 22 percent.

A large number of demonstrations of Integrated Plant Nutrient Management (IPNM)
have considerably increased the awareness among the farmers about balanced use of
chemical fertilizers and a large number of farmers are coming forward for soil test. The
concept of “BIO-VILLAGE” in selected villages in each block as a model village for
showing the performance of bio-fertilisers has helped in spreading the awareness among
farmers. The bio-fertilisers like vermicompost, CPP, NADEP, has started well in large scale
and farmers in almost all the areas are very keen to take up these activities. Now many
farmers in almost all the districts have started producing and using bio-fertilizers. The
university has also helped in promoting the bio-agents on large scale for which demand has
considerably increased. Even a few farmers have started commercial production of bio-
fertilizers as income generating activities. These activities have great potential in minimizing
the use of chemical fertilizers to improve the soil health.

Integrated Pest Management component with some weaknesses in the beginning has
started well and now awareness about harmful effects of pesticides and use of banned
pesticides has increased and a large number of farmers have started using bio-pesticides. In this regard, the result of large number of demonstrations organized in the field and distribution of IPM kits has been quite encouraging.

Public-private partnership, especially in case of paravets, has helped in improving the animal health and breed. Para-workers and Paravet have been able to supplement the timely and quality services required by the farmers at their doorstep. This has also helped in providing employment to unemployed rural youth. Many of the paravets are earning good income of Rs 2000-3000 per year. Besides, the hygiene milk production has increased and linkage with dairy milk routes has helped farmers in getting remunerative prices. Besides, the project has taken initiatives to conserve the local breeds and promoting the health of the animals through improving the availability of green fodder and adding nutrients to dry fodder by mixing urea. This has now greater acceptance by the farmers and helped in improving the health of the farmers.

Participatory management and formation of Self-help groups has been quite effective tool in increasing access to credit to vulnerable section of farming community. A large number of SHGs (both men and women SHGs) have been formed in the villages and almost the activities are implemented in close cooperation of these group members. Many groups have started saving large amount and have opened their accounts and also maintaining the accounts properly. Most of them have been linked with Banks but a few of them have started income generating activities on a modest scale. This has helped the group members in easy accessibility of credit and presently more than 50 per cent of them avail the credit facility through interloaning. This is a good beginning and participatory approach has increased awareness among farmers. However, these groups have still to go a long way to become economically viable and sustainable in income generating activities.

Capacity building for skill up gradation and also for participatory management, financial management, etc. has been started in very effective manner at different levels. In this regard, it would be useful to mention that on the lines of SAMETI (State level institute for agricultural extension management), DASP has also started an autonomous institute-SIMA (State Institute of Agriculture Management) for imparting training to line department staff, NGO and other field functionaries. This has partially has helped in meeting the requirement but has not taken the shape of vibrant institute to meet the complete requirement of capacity building.

To promote privatization of service, two Block have been given exclusively to NGOs for carrying out demand driven activities without involvement of government department. The result has not been encouraging.
Overall, the project has made a good impact in improving the income of farming community and on average annual real income of a family has increased by 36 per cent (from about Rs. 27,000 to Rs 36,000) resulting into decline of poverty by 21 per cent.

Efforts to create rural infrastructure like road and market have mixed result. The construction of road has benefited a large number of rural people in improving the access to health, education, and more specifically marketing of their produce. But market (hath and painth) in few cases has not taken up the real shape.

A number of training organized has improved the technical and managerial skill of functionaries and capacity of field still in carrying out their job more efficiently.

Limitations
As has been indicated earlier that this project is improving the process of technology dissemination through active participation of people and also government and non-government functionaries. The process has started well but will take time to make it fully functional because it requires change in mind-set of bureaucracy and also people. However, there are some limitations of the project in achieving the desired result. It has been observed that often there is mismatch between actual demand and target, which is still decided from top and lack integration. Activities are spread too much without much focus. The project has not given adequate attention to natural resource management. Still there is no much involvement of people in preparation of action plan and top down approach continues. Hence, the activities initiated in the project do not really reflect the demand-driven bottom-up planning. Besides, the vertical and horizontal linkage between line department and farmers-researcher-extension linkage has still to go a long way. Convergence of resources and schemes at the village level has not started as the ATMA concept has not been adopted in compete sense. The functioning of ATMA is quite weak. Various Self-Help Groups, who were expected to graduate beyond the inter-loaning and take up income-generating activities have still not taken the shape of sustainable Farmers Interest Groups. They have remained merely a tool of saving and inter-loaning. These Groups have to become economically viable and their capacity building needs to be promoted with effective marketing linkage.

Decentralization process with role clarity and accountability with responsibility has not taken real shape. Line department are coordinating the activities but they have still the feeling that this is additional burden imposes on them. There is lack of ownership even among officials and also among many farmers. Continuity of Project staff and NGOs is another major problem in smooth functioning of the project activities. There is great shortage of field functionaries with top-heavy agricultural administration. Field functionaries, especially at the Block level and below are quite inadequate for technology dissemination.
Most of the technology dissemination largely depends upon the BLF, who are not adequately trained and do not have necessary skill to do the job. Farming system and intensified approach of diversification of selected promising activities still have to take shape. There are many promising activities and the project need to consolidate these experiences.

**Experience of NATP**

The project achievements mainly include: institutional and operational reforms at state, district, block and village levels; improvement in technology dissemination and management system through introduction of new functional processes; capacity building of extension functionaries; execution of extension activities (including farmers’ training, farmers’ exposure visits and demonstrations) through reformed institutional and operational arrangements; and field level results of project intervention.

Salient observations emerging from M&E visits are as under:

- The Inter Departmental Working Group (IDWG) has started functioning and has been successful in resolving policy and other issues emerging from project implementation at the field level. However, it has still to play a greater role by ensuring regular meeting and widening its composition to include Project Directors of ATMA in the Committee to have better understanding of the problems faced by the actual implementers of the project at the field level.

- PICs have started functioning but need active interest in policy formulation and implementation.

- State Consultants are crucial link between the state nodal officer/PIC, SAMETI, and different ATMA within the state. In general, these State consultants have done good job in increasing the awareness about the project among participating departments and institutions; promoting effective inter-departmental coordination; and organizing training. However, a few of them done this job exceptionally well while others have not been very effective due to several reasons and also lack of role clarity.

- SAMETIs have played an important role in imparting trainings to project officials of different levels but they can still play better role by participating in development of HRD plan of the ATMA districts.

- New institutional and operational arrangements have started functioning in most of the ATMA districts/states leading to decentralization process and bottom-up planning as demand driven-driven system.

- While district level reforms have attained appreciable achievements, the block level operations has not moved at the same rate in many states, mainly due to shortage of staff
at the Block level and also the level of their skill. They require comprehensive capacity building in terms of awareness, concepts of the project, formation of groups, preparation of Block plans, participatory mechanism, and technical skill upgradation.

- Field programs have shown good results in terms of adoption of improved package of practices and intensification as well as diversification of farming system (especially cropping system) through introduction of new enterprises. It has been observed that immediate results/outcomes of diversification efforts have been more than that of intensification.
- Many innovative enterprises have been initiated by the project directors and have been successfully adopted by large number of farmers.
- Many of the ATMAs have initiated steps for their financial sustainability.
- Progress documentation as well as process documentation is still a weak area and need immediate attention.

1. **PROCESS IMPROVEMENT**

1.1 **Integrated Technology Transfer System**

An integrated technology transfer system has replaced the multi-point system well as project implementation in the project districts. Each extension unit while maintaining its distinct identity joins through ATMA together in planning, execution and review of extension activities in the district. The ATMA Governing Board has been helpful in robust integrating-mechanism for proper decision-making, guidance, review and control towards integrated delivery of services. ATMA Management Committee at district level and Block Technology Team at block level has been helpful in bringing the line departments together for planning, implementation/delivery and review and reporting the extension activities in an integrated manner. However, it has been observed that the project performance has been PD-centric. Since, the project does not aim to attain merely short-term objectives in terms of completing the envisaged tasks such as training, demonstration and exposure visit, etc, the main attention is required on strengthening the AMC and BTT further as institutions for the sake of sustainability of the new model.

Integrated implementation of field activities for last three years is indicative of the fact that such system is workable. However, it will require strong commitment on the part of state governments to internalize and practice these new concepts.

1.2 **Broad-based extension system**

Narrow focus of agricultural extension system (limited to crop management practices that too related to main cereals) has been expanded to include other crops and enterprises as well as complete farming technology. Extension activities are moving towards farming system
approach. The integrated technology transfer system is catering to the farmers’ needs related to agriculture, horticulture, animal husbandry and other enterprises in holistic way.

1.3 Demand-driven public extension system

For making the public extension system demand-driven, number of steps have been initiated. As a first step, the team of research scientists, extension officials/workers and farmers carried out systematic assessment of location-specific demand of farmers as well as farming system needs. Results of such assessment were thoroughly discussed in workshops and scrutinized. Finally, an SREP was developed for the district with clear extension and research strategies. This entire exercise brought research and extension personnel together and facilitated clear understanding of location-specific needs and problems of the farmers. All the extension and research activities carried out during the last three years indicate that the public extension system has moved towards demand-driven and well-integrated research system, at least in case of project implementation. However, there is a long way to go before which the system will be fully demand-driven as project forms very small part of the total extension activities of these districts (that are still carried out in traditional manner).

Public research system is also becoming more responsive to development of location specific demand-driven technologies. Instead of issuing blanket recommendations they are carrying out adaptive trials and issuing recommendations on those location-specific priority issues that have been identified in the SREP. The adaptive research conducted so far has been successful in providing location-specific solutions to many farming system related problems of the farmers.

1.4 Location-specific Technology Dissemination

The new arrangements have been successful in disseminating location specific recommendations (AES level) to the farmers. However, intra-AES variations in needs and problems are yet to get place, as BTTs generally do not carry out any systematic assessment at local level. But, in case of Khurda district, linkage of mass farmers is quite strong through FIGs and FAC members. Thus, even micro level problems are getting due attention. As far as emphasis on diversification and intensification of different farming systems is concerned almost all ATMAs have made good progress. However, sustainability-enhancing technologies will require more emphasis in future as they have received comparatively less attention so far.

1.5 R-E-F linkages and feedback

The process of project implementation has contributed in strengthening the R-E-F linkage. Moreover, the AMC has provided a formal mechanism for regular interaction and linkage. Relation between research and extension systems is now a two-way process. Extension
system puts demands on research system and receives solution from it. The research system in turn gets feedback from extension system. Farmer has found his place in this link-chain through representation in GB and AMC. Moreover, FAC provides them an access to linkage mechanism through which they can articulate their problems and needs and influence research and extension priorities. Further linkage of FAC with mass farmers through FIGs provides them an opportunity to put their demands on R-E system. However, in most of the districts it has been observed that FAC is yet to take institutional shape. Thus, in spite of the fact that farmers’ feedback somehow reaches the research and extension system but such feedback mechanism and loop is yet to take permanent shape. The process narrated above has started taking place in the ATMA districts. But is just a beginning. These changes are yet to get center place in the entire system. It will require sustained interest and commitment on the part of government to continue the reforms.

1.6 Decentralized and Bottom-up Planning
Decentralization of planning process down to district level is working successfully. The entire district technology plan is prepared, reviewed & scrutinized at district level. However, it has not fully percolated down to block level as yet.

The Block Action Plans are prepared by BTT and then are scrutinized and approved by FAC. Farmers’ feedback on the BAP is limited to that provided by FAC members, as no systematic exercise is carried out towards assessing the needs and problems of farmers at village level. But grassroots workers of agriculture and line departments are in constant touch with farmers at village level and are well acquainted with the farmers’ problems and technology needs. These grassroots workers continuously provide feedback to Block level officers of their respective departments. Since, Block level officers are members of BTT, they get farmers’ feedback on regular basis. Moreover, BAP is being reviewed by FAC, which facilitates incorporation of farmers’ preferences in the project. There are also good examples of strong feedback mechanism (e.g., Khurda district of Orissa). There, FAC members interact with farmers’ groups and farmers in order to obtain their extension priorities before finalization of BAP.

After approval from FAC, block action plans are submitted to ATMA office. Subsequently, the ATMA Management Committee scrutinizes these BAPs technically and financially. This process helps in associating the district heads of line departments including research units in the planning process. After thorough discussion in AMC, block-wise action plans are consolidated into district action plan for extension activities. By adding plan for HRD and capacity building at district level and infrastructure aspects an Annual Action Plan (AAP) or Investment Proposal (IP) is prepared by the ATMA office and submitted to
Governing Board for its approval. Before according its approval on the AAP/IP, the GB discusses and examines it thoroughly. Since GB comprises of both officials and farmer members the action plan gets consent of all stakeholders. Finally, AAP/IP is submitted to the Technology Dissemination Unit (established in the Ministry of Agriculture, Government of India) for consideration and approval of Technology Dissemination Management Committee. However, it has been observed that delay occurs in approval from TDMC, which adversely affects the entire exercise.

It was also observed that though the technology plan is prepared at block level and finalized at the district level it is still being done under the commanding guidelines from the top. Thus, planning process is yet to become bottom-up in complete sense. However, it is possible if TDU/TDMC indicates the available budget to the districts in advance and leaves ATMAs free to plan their activities within the budget.

1.7 Public-Private Partnership

This aspect has been given a major thrust by ATMAs to promote private sector involvement in providing need-based extension service at grass root level. The process of public-private partnership has begun but it will take some time for taking concrete shape. A few of the PDs of ATMA have taken several initiatives as under:

- Promoted Farmers Interest Groups (FIGs) at grass root level and helped them in federating at block and district level and also improved their capacity building to take up the extension activities. Facilitated the linkage of farmers’ groups with the private sector in the area of contract farming.
- Maintained close coordination with NGOs for formation and capacity building of Farmers Interest Groups as well as proposed to handover a few of the FIACs to block level FIG federation for operating them.
- Provided technical inputs to FIGs for facilitating income-generating activities to be taken up by them and also enrolling the beneficiaries as members with Agriculture Technology Management Agency by charging membership fees from them.
- Helped in establishing Agri-clinics and Agri-business Centres and provided effective coordination with private agencies for setting-up ventures like Fisheries Extension Centre, Rythu Bazars, Agri-Business Centres, processing plants, Bioagent Production & Promotion, Vermi Composting, Watershed Development Programme.
- Facilitated linkages of the farmers’ groups with financial institutions for micro credit.
Helped in establishing linkages with private sector in pooling resources and sharing extension programmes in line with the SREP-R-E strategies. Prepared an inventory of the private sector agencies in the district and working in close coordination with them for extension delivery.

Promoted Info-Shops and Info-Kiosks through linkage made with IT related companies / organizing need-based training to the private sector players in line with SREP strategies.

1.8 Convergence
ATMAs have started convergence with on-going schemes of the agriculture and line departments. But documentation of such convergence efforts and their results is lacking.

1.9. Integrated package of Exposure visit, training and demonstration
Commodity-based synchronization of exposure visit, training and demonstration has been tried in many districts. It has yielded encouraging results in terms of better adoption. This is indicative of holistic approach of extension education. Such process should be followed by all districts and for all commodities/activities to the extent possible. Field visits have revealed good results of project efforts through training, exposure visit, and demonstrations. Existing results/outputs of diversification efforts have been more than that of intensification.

1.10. Financial Sustainability
Almost all ATMAs have initiated steps for financial sustainability. Such steps mainly comprise of charging some token money from farmers for participation in training, exposure visit and demonstrations.

PHYSICAL PROGRESS
Physical progress primarily includes the progress in capacity building activities, execution of extension activities (including farmers’ trainings, exposure visits, and demonstrations), and establishment of Farmers’ Information and Advisory Centers.

a. Capacity building of extension functionaries
Capacity building of extension functionaries associated with newly created institutions has been one of the focus areas of the project intervention since beginning. Orienting and sensitizing all those associated or likely to be associated, about the new concept, was the most challenging task before the project management. The second most important task was to impart PRA and bottom-up planning skills to district technology teams. Initially, these responsibilities were taken up by the MANAGE. Later on, SAMETIs faculties were provided ‘Training of Trainers’ by MANAGE in different aspects. Subsequently, both MANAGE and
SAMETI took the responsibility of imparting orientation and PRA trainings to the ATMA functionaries.

With progress of the project, need arose of diverse skill up-gradation of district, block and grassroots workers in different areas such as farming system approach, participatory management, community mobilization, computer application, etc. Major challenge was capacity building of members of block technology teams, farmers’ advisory committees and farmers’ organizations. Size of this target group being very large no single institute/agency could handle the training requirement. Thus, in addition to MANAGE and SAMETI, KVKs and other local level training institutes and local resource persons were also involved in the task. Moreover, by this time, ATMA officials (Project Director and Deputy Project Director) and district heads of line departments had acquired sufficient familiarity with the different concepts and areas related to the project and they have started imparting training to BTT, FAC and FO members at local level. This arrangement not only reduced the cost of training but also facilitated handling of the large number of trainees.

All ATMAs have executed capacity building programs for skill up-gradation of extension functionaries at different levels and non-official members of different institutions. In some districts, large-scale capacity building efforts were taken for improving the skills of grassroots workers also. But, it has been observed that with respect to training in new project concepts and functions the saturation level could not be attained even in first phase districts (where about four years have already passed). Meaning thereby, one will find such extension functionaries at every level (district, block) who have not been trained in one or more aspects. Similarly, ample number of FAC members could not be trained on different aspects. Undoubtedly, the training programs, whenever organized, at least at local level, were open to all concerned. But due to individual reasons, personal or otherwise, some persons could not attend such programs.

Actually ATMAs conduct different training programs in order to meet the target and utilize the budget provisions. During the review by higher authorities/institutions successful conduct of training/HRD activities, coverage of the training courses (in terms of number of participants) is also discussed. But, progress/performance is hardly reviewed in terms of extent of coverage of the target population (number of total concerned officers/functionaries). This approach in planning, implementation and review is the main reason behind the fact that all officers have not been imparted various trainings. Thus, it is required that a time bound capacity building plan should be prepared with a target to train all the members.

b. Extension activities
ATMAs are using mainly three tools of extension and technology dissemination, viz., training, exposure visit and demonstration. Almost all extension units participate in carrying out these activities. The coverage of these activities is decided through bottom-up planning approach and is based on farmers’ needs and requirements. Farmers’ trainings are organized at village, block and district level. Farmers are also sent on exposure-cum-training visits to successful sites, research stations/institutes, etc. within and outside the state. Block level and grassroots workers of line departments are handling most of the block and village level trainings. Though such execution arrangement is not new and earlier also these functionaries used to impart trainings to farmers. But it used to be done more in a routine manner without clear focus and based on actual need. Under new arrangement, the training for capacity building is prioritized based on the training needs assessment at different level.

c. Establishment of Farmers’ Information and Advisory Center

Establishment of FIACs at block level has two dimensions, i.e., establishment of block level institutions (constitution of Block Technology Team & Farmers’ Advisory Committee) and construction of FIAC buildings and equipping it with computers and libraries facilities. As far as the first part is concerned, all ATMAs have constituted BTT and FAC at block level. But they are lagging quite behind in construction of FIAC buildings and equipping them with infrastructural facilities.

Actually this task should have been taken up in the very beginning. Most of the ATMAs proposed construction of FIAC buildings in their very first-year’s investment proposal but TDMC could not approve and release the requisite budget. Hence, the activity got delayed. Even as on today, when only one year is left, many ATMAs have not received the full budget for construction of FIAC buildings in all the blocks. When buildings are yet to be completed it is meaningless to talk about installation of computers and establishment of libraries, etc. However, some ATMAs have provided computers at block level, which have been installed in the office of Officer In-Charge of the BTT. Moreover, some blocks (e.g., in Maharashtra) are already equipped with computer and Internet connectivity under different schemes of the state government. In these blocks computer usage has already started.

Before it becomes too late, ATMAs should take up the task of construction of FIAC buildings on priority and TDU/TDMC should also take the activity in the same spirit so that construction/establishment activity could be completed well in time and their functionality could be tested and demonstrated.

Success stories

Almost all ATMAs have a few promising success stories with their initiatives. Majority of such stories have also been recorded, documented and widely circulated. But most of these
documentations do not contain adequate description of the processes adopted, economics, potential, replicability and sustainability, etc. (for some innovative examples see Annex-1). To fill this gap AMC-IIML has decided to carry out detailed case study of some of the success stories reported and documented by the ATMA. It will facilitate clear understanding of these stories for wider replication.

Lessons Learnt for M&E

While carrying out concurrent monitoring and evaluation activities, a number of methodological innovations/changes were made from time to time. Sincere efforts were made to make the system more and more tailor-made, user-friendly and objective-oriented. Focus has always remained on getting timely and adequate feedback on the project progress and its achievements for necessary corrective measures in time. On the basis of executing M&E activities, several lessons were learnt. Some of the important lessons learnt and suggestions for improvement are given below.

- Both internal and external monitoring and evaluation system are complementary to each other and is crucial for ensuring smooth progress of the project. However, M&E activities, scope and coverage of internal and external M&E systems should be clearly defined and demarcated in the beginning.

- Internal system should primarily focus on administrative and financial review and compliance reviews whereas external system should concentrate on identification of gaps and constraints and suggestion of corrective measures.

- No blanket design/methodology can be suggested for all projects. It has to be tailor-made. It should evolve over the period on the basis of experiences gained during its execution.

- Though M&E should start with minimum critical mass of tools, techniques and methodology, it should build upon the experiences of its execution and should change in consonance with the change in implementation methodology of the project.

- M&E becomes effective and efficient only when there is proper compliance review mechanism characterized by complete transparency. In such mechanism, each and every stakeholder should be properly involved.

- Regular communication between implementing and M&E agency proves helpful.

Concluding Remarks

These two projects are for a period of five years and stared almost at the same time. This is the final year of the project and during the four years period project has significant progress in strengthening the process. However, both the projects have mixed reactions. Though DASP is being implemented in two states- 32 districts in U.P. and five districts in Uttaranchal, the progress is quite different in these of various activities is quite different because of
regional differences and stage of implementation (8 districts in U.P. and 2 districts in Uttrakhand have been added very late). Similarly in NATP (ITD component) also four districts in each of the 7 states have been taken up in different years. In general, the progress in first year districts is good, while the second and even third year districts have done very well, as expected that there will be demonstration effect and new districts will easily learn from the old districts.

In both the projects participation of in planning and implementation of various demand driven activities have been initiated. The line department and research institute have become more responsive to the needs of the farmers. The grass root level institutions have started playing important role in technology dissemination. But still they have to go a long way. Economic viability and financial sustainability of these institutions still to be ensured.

In the end, it can be concluded that since both of the projects focus mainly on improving the process of technology dissemination through various institutional arrangements and increased participation of farmers and private agencies, including NGOs, it is not unexpected that it takes time, especially in country like India, where response for change is normally slow. Five years period is not enough to strengthen this process and make any significant dent in the change process. Since lot of efforts have gone in strengthening this process, it would be necessary to continue this effort for another few years so that it can be made more effective and sustainable.
ANNEXE- 1: A few Examples of Innovative Initiatives Undertaken in the Project

1. Decentralised and Bottom up Planning

ATMA-Adilabad has adopted different planning process and for project implementation the concept of ‘Adopted Villages’ has been used. In the very first year (2001-2002), two villages each from 52 mandals were identified and selected for intervention. BTT conducted (through grassroots workers of agriculture department) detailed agricultural and socio-economic survey of the selected villages. Each and every detail about agricultural and production environment prevailing in the village was recorded and analyzed. Then village action plan was prepared. By consolidating village action plans Block Action Plans were prepared and submitted to ATMA. Subsequent consolidation of BAPs at district level led to finalization of field program component of the Investment Proposal (or Annual Action Plan of the district). Through this cycle of exercise gaps, problems and needs of farming community and agriculture and production environment had been identified. Besides, SREP was also used as guidebook for extension planning.

The list of the identified/selected villages (also referred as ATMA-adopted villages) was forwarded to the line departments with an expectation that they shall implement their schemes in these villages in a concentrated manner so that they are developed as model villages. During last year (2001-2002), line departments could not do much under their routine programs but in the current year (2002-2003), they have planned ample number of activities for these villages. Some of the activities have already been started.

This concept of adopted villages has helped in focusing the limited project funds for holistic agricultural development of the selected villages. Experience in other areas of the same state and outside state shows that ATMA activities could hardly reach more than 150 villages in meaningful way. Thus, sharpening the focus on selected and limited number of villages since beginning seems useful. During the assessment exercise carried out by the grassroots workers towards preparation of village action plans farmers’ feedback was duly obtained. Moreover, these workers are in constant touch with villagers/farmers and farmers’ feedback on plan of activities is a regular phenomenon.

2. Public-Private Partnership

ATMA-Chittor identified and enrolled three private entities, namely, Food World, Agri-Horticulture Society and WORD organization. ATMA charged a registration fee of Rs. 50/- from each of these firms/societies. ATMA has entered into an agreement with Poultry Association, Food World and Vennar Organic Fertilizers for maize buy-back with support price; direct buying of mango without middlemen; and quality component.

ATMA-Prakasham has identified three private organizations and a few individuals, viz., SEED organization, ASSIST organization and Mr. S K Moddin (a retired agriculture officer). Two NGOs were involved in capacity building of farmers’ groups in agricultural activities and training of women groups drawn from DWACRA on child nutrition, utilizing locally available products in preparing nutritive food, and general awareness on sustainable farming practices such as IPM and INM.
ATMA-Ratnagiri has inventoried 32 extension service providers in the district. It has associated three of them ('Matrumandir' for training and community organization, ‘SIDDI’ for group formation and ‘Gram Vikas Mandal’ for women group formation). They are actively participating in ATMA program. In addition associating 3 NGOs in its program ATMA has also taken help of an NGO in establishment of one FIAC. The NGO has provided office and building space for FIAC in its premises (in Sangameshwar block) without any charge/money.

ATMA-Aurangabad has inventoried and associated 3 extension service providers (all NGOs) in the district. These NGOs are: (1) Marathwada Sheti Sahayya Mandal–Watershed development, (2) DILASA–Watershed development and dairying, (3) Janaki Devi Bajaj Trust–watershed development, vermi-composting and IPM. It has also developed partnership with two private entities - Vasundhara Agrotech (for supply of bio-agents and training) and Kedia (for training & demonstration on roof water harvesting and well recharging). With these entities it organized joint workshops and training programs.

ATMA-Amravati has developed partnership with five private entities. These are: DHARAMITRA-Wardha (for organic certification), CARD-Anjangaon Surji (for prevention ginger soft rot), Shri Raosaheb Dagadkar-Ushalgao (for organic farming awareness), Organic Farm Home School-Nimkhed Bazar (for organic farming), and SAMVAD-Rawala (for watershed management).

Details of activities, performed by these entities till date, are given below.
- **DHARAMITRA**: initiated trainings,
- **CARD**: organized demonstrations,
- Shri Raosaheb Dagadkar: trainings initiated, Organic Farm Home School: training and marketing of organic produce,
- **SAMVAD**: rain water harvesting, in situ water conservation, eco-friendly agriculture, medicinal plants

ATMA-Ahmadnagar could initiate the participation of private sector in the project activities in the very first year. In total six private companies (namely, Novartis, Agro genetic, Pioneer, Neemkar Seeds, Prithi Agro, and Krishidhan) came forward and provided free seed of five different crops for trials. In total, 120 trials were undertaken with their help.

1. Under sericulture enterprise, the Kirti Livestock Private Limited is being involved for training of farmers and development of innovative ideas in sericulture.
2. The ATMA received a proposal from ‘AgriNet Solutions Private Limited’ for joint implementation of IT based information system for all the FIACs being established in the district. GB has decided to enter into an agreement with the company. The portal will provide information support to FIACs. They have also proposed to place one computer literate agriculture graduate to operate the FIAC. The modalities related to his employment status and salary etc. is yet to be worked out. They have proposed to charge nominal fee for information. As per the decision of GB the company has been invited for detail discussion on the proposal.
• ATMA-Kangra has tied up with Samriddhi (an NGO) for sale and processing of garlic, fruits, etc. In Shimla and other districts of Himachal Pradesh input dealers have been made part of the ATMA system.

3. Convergence

ATMA-Chittor has initiated convergence with DWACRA (of DRDA), Community Marketing (of DPIP) and watershed program (of DPAP). Such convergences have resulted into positive impacts in field.

ATMA-Prakasham has initiated convergence with Andhra Pradesh Livestock Development Agency and Integrated Rural Development Project. Results/ outcomes of such convergences are yet to be documented.

ATMA-Aurangabad initiated convergence with various schemes of government departments including agriculture, animal husbandry, social forestry, fisheries and sericulture and Krishi Vigyan Kendra as per details given below.

1. Department of agriculture: Vermicomposting, drip irrigation, aromatic & medicinal plants, IT shops, IPM, Onion seed, training programs under cereals, pulses, oilseed development program, horticulture plantation and watershed development,

2. Animal Husbandry Department: Vaccination, artificial insemination, Paravet training, exhibitions
   - Social Forestry department: Kisan nursery
   - Fisheries department: Allotment of tanks to fisheries society/groups
   - Sericulture: Mulberry plantation, silkworm rearing, cocoon marketing, and reeling of silk
   - KVK: Training programs on mushroom, sericulture and vermicomposting

ATMA-Amravati has initiated convergence with various schemes of government departments.

Department of agriculture: Vermicomposting, onion storage, medicinal plants, fruit processing,

Animal Husbandry Department: Green fodder cultivation

Sericulture: Improved practices in sericulture
Such convergences have yielded results in terms of following:
• Formation of 4 vermicompost groups and establishment of about 200 vermicompost units
• Creation of demand for improved storage
• Increased area under medicinal plants
• Formation of women groups for fruit processing
• An incremental area of 64 ha under mulberry cultivation
• Incremental area of 81 ha under green fodder cultivation
### Financial Sustainability of ATMA

#### ATMA-Shimla has started charging:
- Rs. 10 for training programs
- Rs. 20-100 for exposure visits
- 30% cost of demonstration/adaptive trials
- 10% cost of literature

ATMA has generated a fund of Rs. 7.40 lakh (up to 31/03/2002)

#### ATMA-Hamirpur is charging:
- Rs. 10/- per farmer as a registration fee for training programmes.
- Rs. 50/- as a registration fee from the nominated members under different HRD training programmes to be organised by ATMA.
- 20% of the demonstration cost as a fee for the demonstration from every beneficiary farmer under each programme.
- Rs. 300/- per day as the charge of ATMA hall for organizing training.

#### ATMA-Kangra
For financial sustainability, GB was decided to charge some token money in lieu of inputs and services rendered to farmers at their doorstep like:
- Rs. 10/farmer/training as registration fee
- 10% demonstration cost/beneficiary
- Rs. 10/farmer/exposure visit within the state
- Rs. 20/farmer/exposure visit outside the state
- 10% of the income from the income generated by FIAC

#### ATMA-Aurangabad
Various initiatives taken by ATMA-Aurangabad for financial sustainability include charging for participation in training programs and exposure visits. Through these measures ATMA has generated a sum of Rs. 36,000 till date. ATMA has provided a revolving fund of Rs. 2.5 lakh to Bio-control lab. The lab generates revenue through selling of bio-agents to farmers.

#### ATMA-Chittor
The initiatives taken by the ATMA for its financial sustainability includes collection of membership fee from firms and societies and service charges at FIA centers. Through these initiatives an amount of Rs. 5000/- has been generated.

#### ATMA-Madhubani
Towards financial sustainability steps have been initiated to solicit sponsorship. A registration fee of Rs 50/- from FIG members while a fee of Rs. 100/- from FAC is being charged. However, people are not willing to pay. Moreover, how this one time/ yearly payment is going to be used is also not clear. No immediate plans have been formulated to sustain the process change initiated under ATMA.
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<tr>
<th>ATMA – Shimla</th>
<th>ATMA – Khurda</th>
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<tbody>
<tr>
<td>• Study to assess marketing problems faced by farmers</td>
<td>• Research-Extension coordination committee at state level</td>
</tr>
<tr>
<td>• FAC chairman given financial power</td>
<td>• District Resource Group</td>
</tr>
<tr>
<td>• Delegation of financial power to FAC/FIAC</td>
<td>• Block level federation of FIGs</td>
</tr>
<tr>
<td>• Ample find generated by ATMA (8 lacs) towards financial sustainability</td>
<td>• Farmer-led community mobilization and development of local institutions</td>
</tr>
<tr>
<td>• Study on intercropping with Apple (conducted by farmers members of GB and FAC)</td>
<td>• One-to-one (direct) interaction between farmers and district heads of line departments through block level net connectivity</td>
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<tr>
<td>• Marketing tie-up with NGO (Samriddhi)</td>
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