



Chapter-VII

Findings & Conclusions



Village level seed treatment campaign



State level agriculture fair

CHAPTER – VII

FINDINGS AND CONCLUSIONS

Bottom-up Planning and Participatory Approach

- 7.1 ATMAs in all the sampled districts both in Uttar Pradesh and Haryana have prepared Strategic Research and Extension Plans [SREP] by involving representatives of farmers, line departments of agriculture and allied sectors at the district level, KVKs and other research organizations. The exercise of SREP had for the first time brought research and extension personnel together with farmers and facilitated clear understanding of location-specific needs and problems of the villagers. The SWOT analysis carried out during the preparation of SREP has helped in identification of current strengths, weaknesses within the existing farming systems and opportunities in terms of providing access to new market, new technologies, services etc. It is noteworthy that the SREPs have been duly considered and approved by the respective Governing Boards of ATMA in all the sampled districts.
- 7.2 The State Extension Work Plan [SEWP] is being duly prepared and submitted to Ministry of Agriculture, Government of India by both the States of Uttar Pradesh and Haryana on an annual basis duly adhering to the procedure prescribed in this regard. The SEWP contains a consolidated activity-wise plan incorporating all the district agriculture action plans [DAPs] in the state and state level activities to be carried out with activity-wise budgetary requirements as per the norms prescribed in the cafeteria.
- 7.3 The study has revealed that the Farmers' Advisory Committee (FAC), a vital arm of Farm Information Advisory Centre (FIAC) at the block level did not hold separate meetings in any district of either UP or Haryana during 2005-2007 to discuss, plan and set their extension priorities in keeping with the demands and peculiar needs of villages under their jurisdiction. Joint meetings of FAC and BTT were, however, held in all the sample districts of both UP and Haryana during 2005-08. The study team also noted that the farmers' feedback on the BAP prepared by BTT was limited to that provided by FAC members as no systematic exercise is being carried out in any of the sampled blocks towards assessing the needs and problems of farmers at village level. The above results are also corroborated with the primary data obtained during field survey directly from farmer beneficiaries in villages wherein a substantial majority of farmers in Uttar Pradesh (76 per cent) and Haryana (67 per cent) denied any role in the formulation of village or block development plans. The study has clearly revealed that by and large, the block action plans were drawn and implemented by the officials with not much participation or involvement of farmers, during the period 2005-08. Thus, the concept of participatory approach in the

preparation and implementation of the developmental plans at the block/village level is yet to take firm roots though the situation seems to be improving gradually from the year 2008-09 onwards. It can be inferred that the decentralization of planning process down to block level is slowly and gradually picking up though it is yet to percolate down to village level. In order, therefore, to make the planning process bottom-up in complete sense, there is need for a strong feedback mechanism whereby the BTT/FAC members should interact with farmers' groups and farmers directly in order to obtain their extension priorities before finalization of BAP.

- 7.4 In keeping with the recommendations of the National Commission on Farmers, ATMA lays emphasis on group approach in extension through promotion of commodity based farmers' interest groups and farmers' organizations. Group approach in extension had taken place to a limited extent in Lucknow, Bareilly, Aligarh, Maharajganj & Barabanki districts only in UP and none in Haryana. It is disheartening to note that only 4.8 per cent of the sampled beneficiaries have taken the membership of different types of FIGs. Out of them, about 32 per cent have taken the membership of agricultural marketing societies, 26 per cent in milk processing & 19 per cent for dairy development societies. The crop specific membership has been taken by 7 per cent each in cane growers' associations and fisheries societies and about 9 per cent in fruits & vegetables societies. The FIGs/CIGs provided with assistance money were very few both in UP and Haryana. The level of awareness about financial assistance to FIGs was abysmally low at 3.3 per cent. It was observed that all the line departments in the sampled districts were given targets to mobilize group formation but they have met with a limited success. Most of the FIGs formed were dormant and non-functional. The FIGs who have availed seed money under the scheme largely perceive the assistance as a dole or an incentive without any liability to return the funds. Similarly, a few of the Self-Help Groups formed have not gone beyond saving and inter-loaning. These FIGs and SHGs have yet to become self propelled institutions. Thus, the concept of Farmers' Interest Groups [FIGs] is yet to take roots in both the States of Uttar Pradesh and Haryana, in the form in which it was envisaged.

Fund Utilization

- 7.5 In both the States of Uttar Pradesh and Haryana, the respective State Governments have set up SAMETI as the nodal institution for implementation of the scheme. The study team observed that the processes prescribed for allocation of funds among the districts based on sanction and release thereof by Government of India was duly followed by both the States of UP and Haryana. The ATMA Governing Boards in the sampled districts made allocation of funds to line departments, FIAC and other agencies such as KVK, NGOs etc. keeping in view the sanction and availability of funds. The Management Committee released project funds to the respective agencies as per the budgeted cost of the approved activity plan and extension programmes included in the framework of DAP.

- 7.6 The Management Committee in all the sampled districts were adhering to the guidelines issued by the GoI, MoA, DAC with regard to release of project funds to each of the FIAC comprising of BTT and FAC at the Block level as well as to the line departments and other agencies for executing their approved field level extension activities based on the District Action Plan [DAP]. Separate accounts/sub-accounts both agency-wise and activity-wise have been invariably maintained in all the districts. The funds were placed in a bank account jointly operated by Chairman, FIAC and the Convener of BTT in the sample districts. The accounts were found to have been duly audited by Chartered Accountants appointed by the SAMETI/State Nodal Office at the state level.
- 7.7 The utilization of funds under ATMA in Uttar Pradesh had remained below satisfactory level during 2005-06 and 2006-07 but had gradually improved in 2007-08 and 2008-09. In Haryana, although very little fund had been utilized in 2005-06 like in UP, the picture had been just opposite in the following years. It had been above 80 per cent in 2006-07 and 100 per cent in 2007-08 but came down to 45.9 per cent in 2008-09. Both the Governments of Uttar Pradesh and Haryana have also fully released their corresponding State Share and have also been sending Utilisation Certificates to DAC, MoA, GoI periodically.
- 7.8 At the district level, the percentage utilization of funds during the period 2005-2008 was exceptionally well in the districts of Baghpat, Aligarh and Maharajganj at 100 per cent and Bareilly at 98.2 per cent. The utilization of funds in other districts of Uttar Pradesh ranged well above 80 per cent. In the State of Haryana, the percentage utilization of funds during the period 2005-2008 was 64.3 per cent in Sirsa and 61.8 per cent in Sonapat, which cannot be considered as satisfactory. Overall, in the State of Uttar Pradesh, the utilization was quite high at 92.4 per cent as compared to 63.1 per cent in Haryana, which may be termed as poor.
- 7.9 Activity-wise actual spending during the period 2005-2008 showed that under "Farmer Oriented Activities" the utilization of funds in all the sampled districts of Uttar Pradesh had exceeded the stipulated 45 per cent limit with Allahabad and Barabanki districts spending more than 60 per cent. In Haryana, the expenditure incurred under this category was as low as 30 per cent in Sirsa district while Sonapat with 50.6 per cent expenditure exceeded the stipulated limit. Overall, UP with 56% utilization under FOA Category fared better than Haryana at 39.7%.
- 7.10 Under 'Farm Information Dissemination' (FID) category during the period 2005-2008, Baghpat in Uttar Pradesh with 10.3 per cent utilization against the stipulated 20 per cent limit under this category was the highest while the percentage utilization in other districts was quite low in the range of 7.2 to 9.7 per cent. In Haryana, the expenditure incurred under this category by Sirsa district with 17.5 per cent utilization was quite impressive while Sonapat fared poorly with just 7.5 per cent utilization. Overall,

Haryana with 12.8 per cent utilization fared better than Uttar Pradesh (8.5 per cent) under FID category though both the States fell short of the stipulated limit.

- 7.11 Under 'Agricultural Technology Refinement, Validation and Adoption through Research-Extension-Farmer Linkages' category, Allahabad (21.6 per cent), Maharajganj (16.2 per cent) and Jalaun (15.4 per cent) in Uttar Pradesh achieved more than stipulated utilization of 15 per cent under this category whereas other districts with a range of 7-9 per cent utilization substantially fell short of the limit. In Haryana, Sirsa with 17.6 per cent utilization exceeded the stipulated limit while the achievement of Sonapat district was abysmally low at 2.7 per cent. Overall, the State of Uttar Pradesh achieved a better utilization of 13.5 per cent under the REF Linkage category as compared to Haryana at 10.6 per cent.
- 7.12 Under 'Administrative Expenses' category, during the period 2005-2008, the districts of Bareilly, Barabanki, Maharajganj, Saharanpur and Lucknow in Uttar Pradesh spent around the stipulated limit of 20 per cent while Jalaun, Aligarh and Baghpat spent in the range of 26-29 per cent under this head, which is high. Allahabad with just 8.9 per cent expenditure on administration was the least, which is really appreciable. In Haryana, both Sirsa (34.9 per cent) and Sonapat (39.2 per cent) had spent much above the stipulated limit on administrative expenses. Overall, the percentage utilization under 'Administrative Expenses' category was quite high in the State of Haryana (36.9 per cent) in comparison to Uttar Pradesh (22 per cent) which spent around the stipulated limit.
- 7.13 The overall position of expenditure incurred in the State of Uttar Pradesh revealed higher fund utilization during 2007-08. In respect of activity-wise spending of the fund received in the districts, the situation had not been healthy and had not shown much improvement in 2007-08. In Haryana, the overall position of fund utilization and activity-wise expenditure incurred in the state revealed lower fund utilization during 2005-06. Even the activity-wise spending of the fund received in the districts had been dismal and had not shown improvement till 2007-08.
- 7.14 Fund utilization by line departments in the sample districts of Uttar Pradesh during the period 2005-2008 was almost cent percent in most of the districts barring Jalaun and Lucknow which indicates need based utilization of the funds received by the departments in the years concerned. Similar situation was witnessed in the two districts of Sirsa and Sonapat in Haryana as well.

Synergy among Line Departments

- 7.15 The study team observed that synergy among the line departments was absolutely lacking in almost all the sampled districts. Since line departmental heads are positioned in the district headquarters, the responsibility of the major part of work under ATMA programme right from the preparation of the Block Action Plan to its

ultimate execution has devolved on the Block Agriculture Officer, who is extremely overburdened. There is lack of ownership even among officials and also among many farmers. There is a 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. Thus, the vertical and horizontal linkage between line departments and farmer-researcher-extension linkage has still to go a long way. There is not much involvement of farmers in preparation of village/block action plan and top-down approach continues to a large extent in actual practice. Hence, the activities initiated in the project do not really reflect the demand-driven bottom-up planning. Decentralization process with role clarity and accountability with responsibility is yet to take a real shape.

Involvement of Voluntary Sector in Extension

- 7.16 The services of NGOs in most of the districts are being utilized for motivating and mobilizing farmers for participating in project activities and organising them into Farmers' Interest Groups. The study shows that the involvement of NGOs in extension activities is somewhat better in the districts of Jalaun, Barabanki, Lucknow and Allahabad. The expenditure incurred on NGO sector in the sampled districts of Maharajganj, Allahabad and Barabanki had been somewhat better than the others in UP. In Haryana, the expenditure incurred on NGO sector in Sirsa had been slightly better as compared to Sonapat. Lucknow has trained maximum number of agricultural graduates (10) through the facilitation of MANAGE under the ACABC scheme closely followed by Bareilly, Maharajganj and Allahabad. The other districts seem to be lagging far behind in the efforts to train agripreneurs. Though the scheme envisages involvement of input dealers in extension activities, being in closer proximity to farmers in villages, it is yet to take shape in any of the sampled districts in both the States of U.P. and Haryana.

Public-Private Sector Participation

- 7.17 The process of public-private partnership has been initiated in a few districts of Uttar Pradesh particularly, Lucknow, Allahabad, Barabanki and Jalaun where some FIGs have been linked with the private sector through contract farming. The districts of Jalaun, Maharajganj and Aligarh have also taken lot of efforts to provide technical inputs to FIGs through the agripreneurs trained under ACABC scheme and also facilitated linkages of the farmers' groups with financial institutions for micro-credit in line with SREP strategies. Uttar Pradesh has entered into MoU with a few corporates viz. ITC, Bayer Bio Science, Excel Crop Care, etc. under PPP Mode for Extension activities. An MoU has also been executed with Jagaran Prakashan for publication of journal titled "Khet Khalihan" for propagation of farm related matters at the village level. Similarly, Haryana has engaged M/s Icon Communications Pvt. Ltd. for bringing out a fortnightly wall magazine "Pratibaddh" under which wall posters containing important information regarding Govt. schemes/programmes for the

benefit of farming community and villagers, are being prominently and conspicuously displayed in all important locations in villages for the benefit of the farming community. Thus, the private sector extension providers are slowly and gradually assuming role in rendering need-based extension services at the grassroot level along with the official agencies, though it has still a long way to go.

Implementation of Innovative Activities

- 7.18 The States of Uttar Pradesh and Haryana have taken a number of innovative extension initiatives. Some of the innovative initiatives taken by Uttar Pradesh are, inter alia, setting up of Community Radio Stations (CRS) through KVKs in 5 districts namely, Saharanpur, Aligarh, Jalaun, Barabanki and Baghpat; establishment of 71 District level training institutions to cater to the training needs of block and district level functionaries, revitalisation of extension system through the concept of farm schools at village level, one-year Post Graduate Diploma Programme in Extension Management through MANAGE under distance learning mode for enhancing the skills and developing the capacities of public sector extension functionaries, involvement of agripreneurs trained under ACABC scheme in extension activities, farmer-to-farmer extension through Kisan Vidyalayas at each Nyaya Panchayat, provision of one Mitra Kishak at each Gram Sabha by mobilization of trained progressive farmers for extension work at village level, linking farmers' clubs with ATMA in all districts, training of select NGOs/input dealers/para-extension workers for implementation of extension activities, involvement of corporates under PPP mode for extension activities. replication of success stories and best practices under farming systems approach, development of various modules on agricultural practices and farming systems through KVKs and State Agriculture Universities, organizing periodic kisan melas and agricultural exhibitions during kharif and rabi seasons at the state level to disseminate latest agriculture practices and technologies for farming community and publication of journal titled "Khet Khalihan" for propagation of farm related matters. Similarly, the initiatives taken by Haryana include launch of Edusat Telecast Programme through UTKARSH Society for disseminating latest technology on agricultural practices through talks, live panel discussions, demonstrations and weather report; toll free SMS services for farmers whereby the problems / queries raised by them are answered / redressed through return telephone call from technical experts; conduct of farmer development workshops on a periodic basis in several districts during kharif and rabi seasons; information dissemination through sale outlets of input dealers; promotion of kisan clubs of progressive farmers in all districts; communication of critical extension messages to farmers through children studying in schools; introduction of State level, District level and Block level Farmer Awards in the State for progressive & achiever farmers and introduction of award for Best ATMA district; involvement of corporate in extension activities.

Rewards and Incentives to Farmers/FIGs

- 7.19 It is observed that the system of granting rewards / incentives to good, progressive and achiever farmers as also to good performing FIGs and ATMA district has not yet been started in both the States of Uttar Pradesh and Haryana despite provision of funds for the same. However, it is gratifying that the Inter Departmental Working Group for the State of Haryana has recently approved a proposal for introducing a reward scheme for farmers and a sub-committee of departmental heads has since been constituted to initiate necessary action in the matter and to recommend awards to deserving farmers through a transparent and judicious selection process.

Convergence of Extension Activities

- 7.20 The concept of an integrated or single window extension system, as envisaged under the ATMA programme is yet to gain ground in both the States of Uttar Pradesh and Haryana. Though SREP provides a mechanism for ensuring convergence of all activities of extension, the resources for which are being provided under different schemes of Centre/ State Governments, in actual practice, the concept has not been fully adopted in the sense in which it is meant. Most of the line departments and extension functionaries were not clear about the approach and ways of integrating extension through ATMA. It is, therefore, imperative to sensitise the extension functionaries of all the line departments on the advantages of synergy and the approach to be adopted for creating the desired linkages and integration of all the government schemes for agriculture & allied sectors with the activities of ATMA.

Sustainability of Extension Services

- 7.21 The field survey revealed that the beneficiary contribution of 10 per cent is actually being adjusted against the expenditure on activities such as training, demonstrations and exposure visits for the purpose of accounting though actually no contribution is made by the beneficiaries. During the field interactions with farmers' interest groups and the farmers' organisations, a large majority of them perceived that the farmers would be willing to pay if farm advisory and other essential services are provided to them periodically on their farm field and also on call as & when required. Besides, they desired that the quality of services should be of high standard and reliable. The field perception was that the small & marginal farmers would be in a position to avail the paid services if they are organised into groups on commodity lines and the payment in borne by the group itself. However, in spite of considerable scope, ATMA has not been able to mobilize any contribution from farmers, voluntary sector or the corporates. It may be due to either poor quality of farm advisory services and non-availability of services on time or the farmers are habitual in getting free services for long.

ROLE OF STAKE HOLDERS IN ATMA

Governing Board and Management Committee

- 7.22 The Governing Boards (GBs) have been duly constituted and notified in all the sampled districts of both the States of Uttar Pradesh and Haryana with Deputy Commissioners as the Chairmen and Deputy Director [Agriculture]-cum-Project Director, ATMA as the Member-Secretary. The ATMA Management Committees [AMCs] have also been put in place in all the districts under the Chairmanship of the Deputy Directors [Agriculture]-cum-Project Directors at district level with technical officers of agriculture & allied sectors, ZRS, KVK, representatives of the Farmers including women and SCs, NGOs etc as members. The study has, however, revealed that the meetings of the Management Committee and the Governing Boards in all the sampled districts had been very erratic during the initial years i.e. 2005-06 to 2007-08. As a matter of fact, though there had been gradual improvement in the periodicity of meetings now, the meetings had not been held as per the Gol guidelines in any of the sampled districts both in UP and Haryana. The number of field inspections conducted by the Project Directors of ATMA as also the number of farmers contacted during such field visits during 2006-07 onwards also seems to be picking up slowly after somewhat sloppy performance during the initial years.
- 7.23 The Project Director of ATMA in the district, who is invariably the head of the Agriculture Department in the district nomenclated as Dy. Director of Agriculture in both the States of Uttar Pradesh and Haryana, functioned as the Chief Executive and played a major role in coordinating and integrating the research & extension activities in the district. The Block Action Plan and programme requests of each Block are scrutinized by AMC on the basis of technical, financial and management criteria and placed before the Governing Board for its approval.
- 7.24 The ATMAs in each of the sampled district had no separate and exclusively dedicated staff to undertake various activities under the scheme. The staff in the agriculture department at the district level, therefore, looks after all the activities of ATMA in addition to their usual duties. All the districts had a very small complement of staff looking after the works of ATMA which included, apart from the Project Director, a Technical Assistant or a Subject Matter Specialist (SMS), an accountant/cashier and a clerk. In districts like Barabanki, Maharajganj and Jalaun in UP, there were reportedly only 2 staff (a T.A. and a Clerk/Cashier). In other districts, the staff strength generally ranged from 3-4. In the districts of Sirsa and Sonapat both, there was 3 staff looking after the works of ATMA (a T.A., a Clerk and an Accountant). Incidentally, the PDs in all the sampled districts were qualified agriculture graduates with good knowledge and experience in the areas of agricultural science, technology and development. Further, all the PDs had also undergone training in extension management from SAMETI. However, the Project

Directors, as the highest ranking agricultural official in the district, are not dedicated for ATMA activities alone and are over burdened with various other agriculture activities in the district.

Farm Information and Advisory Centres [FIACs]

- 7.25 The Farm Information and Advisory Centres [FIACs] have been duly established at the block level in each of the sampled district in Uttar Pradesh and Haryana. The FIACs comprises of two bodies namely, the Block Technology Team [BTT] including the technical officers involved in agriculture and allied sector and Farmers' Advisory Committee [FAC], which is a body exclusively of farmers. The BTTs as well as FACs have been duly put in place at the Block level in all the sampled districts both in Uttar Pradesh and Haryana.
- 7.26 The senior most official among the line departments in the district has been appointed as the Convener of BTT for each block in all the districts. FIAC is a platform where the farmers and the extension functionaries from each line department come together and discuss, plan and execute extension programmes at the block level. However, FIAC in the project blocks in none of the sampled districts possessed their own building and were found to be operating from a small space of the agriculture department usually meant for stocking seeds, with a few chairs. Meetings were usually held in open areas. There was neither any PC (computer) in any of the offices nor any staff in position for looking after the ATMA programme. It is imperative that the ATMAs in both UP and Haryana take up the task of construction of FIAC buildings in all blocks on priority and equip them with necessary infrastructural facilities viz. computer, library etc. so as to ensure effective monitoring, coordination and execution of field activities.
- 7.27 The frequency of meetings of Farm Information Advisory Centres [FIAC] in all the sampled districts has witnessed a progressive trend during the 3 year period from 2005-2008. It is noteworthy that though the FIACs in all the sampled districts of both UP and Haryana were formally set up only during 2006-07, the joint meetings of line department officials and farmers' representatives at the block level in all the sampled districts were invariably held mainly in connection with preparation of SREP and setting block priorities. The FIACs in Lucknow, Allahabad and Barabanki in UP and Sirsa in Haryana seem to be more active as compared to the others. Generally, as a pattern, FIACs usually hold meetings on an average around three times in a year at a frequency of one meeting during each crop season to discuss, plan and execute extension programs at the block level.

Representation of Women, SC/ST Farmers and NGOs

- 7.28 Among the sampled districts of Uttar Pradesh, Jalaun, Baghpat and Aligarh had less than the stipulated 30 per cent representation of the farming community in the

Governing Boards. Barabanki with 47.1 per cent had the highest representation of the farming community while Allahabad and Bareilly too had good representation (40 per cent in both), which is appreciable. In Haryana representation was 37.5 per cent and 41.1 per cent in Sirsa and Sonapat respectively. Women farmers in the Governing Boards was 16.7 per cent in Bareilly, 20 per cent each in Jalaun, Lucknow, Saharanpur, Baghpat, Aligarh and Maharajganj, 28.6 per cent in Sonapat and 33.3 per cent in Sirsa while Allahabad and Barabanki remained unrepresented. All sample districts had one representative from SC/ST community thereby adhering to the stipulation in the guidelines on SC/ST while guidelines in regard to representation of women farmer were followed only in Sirsa district. The representation of the farming community in the ATMA Management Committees was quite substantial in Allahabad (35.7 per cent) and Maharajganj (33.3 per cent). The other districts except Barabanki had followed the stipulated guidelines in this regard. Representation of women farmers existed in only four districts (Lucknow, Saharanpur, Maharajganj and Barabanki), leaving Jalaun, Baghpat, Bareilly, Aligarh and Barabanki unrepresented. Similarly, Management Committees in Lucknow, Baghpat, Bareilly, Aligarh and Sonapat districts of the two States remained devoid of SC/ST farmers' representatives. The situation in some districts indicate program implementation without heeding to the underlying objectives that defeats the very essence of the ATMA program. Women farmers were reasonably represented in the FACs of all the sampled districts ranging from 30.8 per cent (Lucknow & Allahabad) to 40 per cent (Aligarh). In Sonapat, it was a trifle low at 27.3 per cent. The representation of SC/ST farmers in the FACs were good (23 to 36 per cent) in Jalaun, Lucknow, Allahabad, Barabanki, Sirsa and Sonapat. The representation of SC/ST farmers in Saharanpur and Maharajganj at 18.2 per cent while that in Baghpat and Bareilly with 16.7 per cent were slightly lower than conceived. The representation in Aligarh (6.7 per cent) was too low to be effective in securing enough of the community's interests.

Role of SAMETI

- 7.29 At the State level, the Govt. of Uttar Pradesh has set up the State Agricultural Management Training and Extension Training Institute [SAMETI] at Lucknow whereas the Govt. of Haryana has set up HAMETI at Jind which function as apex training institutes for providing needed HRD support and capacity building in innovative areas of extension delivery in the States. The apex level National Institute of Agricultural Extension Management [MANAGE] had facilitated in developing the capacity to provide professional skill training to KVK trainers and SMSs in participatory rural appraisal techniques, SREP preparation and Group Formation. SAMETI in both the States of UP and Haryana had organized several programmes for 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. They have played an important role in imparting trainings to project officials of different levels but they can still play a better

role by participating in development of HRD plan of the ATMA districts. Focus needs to be laid on the capacity building of members of block technology teams, farmers' advisory committees and farmers' organizations. Size of this target group being very large and varied in knowledge level, no single institute/agency could handle the training requirement. Thus, the involvement of KVKs and other local level training institutes and local resource persons must be increased to supplement the efforts of SAMETI.

The trained ATMA officials and district heads of line departments are also imparting training to BTT, FAC and FO members at local level, which is a healthy trend. 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. Notwithstanding the above, interaction with extension functionaries at the district and block level has revealed that many of the field functionaries have still not received training in one or more aspects. Similarly, ample number of FAC members could not be trained on different aspects. Thus, a time bound capacity building plan is required to be prepared with a target to train all the members.

Inter Departmental Working Group (IDWG)

- 7.30 The States of Uttar Pradesh and Haryana have duly constituted and notified a State level Inter Departmental Working Group [IDWG] under the Chairmanship of the Principal Secretary (Agriculture) to guide, coordinate and monitor the implementation of ATMA programme in the districts. IDWG comprises of the heads of all the line departments in the State namely, agriculture, rural development, finance, animal husbandry, fisheries, horticulture, soil conservation, women development, panchayati raj etc. besides VC of SAUs as members. The Directors of Agriculture in both the States of Uttar Pradesh and Haryana have been nominated as the Member Secretary of the Group.
- 7.31 The IDWG in both the States have been meeting usually on an annual basis to review the progress in implementation of the scheme at the district level, to guide the human resource development activity and to oversee the agricultural extension research activities being undertaken under ATMA. Uttar Pradesh had held IDWG meetings at least once in each year during 2005-2008, while Haryana held it only once each in 2005-06 and 2009-10. The fact remains that the guidelines in this regard has been clearly overlooked in both the States of UP and Haryana though relatively, the position in UP seems to be better as compared to Haryana, which showed a lackadaisical attitude during the initial stages This could be attributed to the initial inertia after launch of the programme in 2005 and the situation appears to be gradually improving over the years.

7.32 The IDWG have taken a number of policy decisions and interventions on inter departmental matters including issues related to gender mainstreaming, Public-Private Partnership in extension, etc. Looking into some of the important issues taken up in the meetings in the recent past, the eagerness and importance bestowed by the State administration is quite visible. It is noteworthy that the Government of Uttar Pradesh has appointed State Coordinators to exclusively focus on ATMA works. They have become crucial links between the State Nodal Officer, SAMETI and different ATMA bodies at the district level. In general, these State Consultants have done a good job in increasing the awareness about the project among participating departments and institutions; promoting effective inter-departmental coordination; and organizing training. The Government of Haryana could also consider appointing a suitable official, preferably a senior level retired officer, as State Coordinator to provide the needed focus and attention to extension activities in the State.

Role of Krishi Vigyan Kendras (KVKs)

7.33 The ATMA model envisages a proactive role for KVKs in operationalizing the scheme in the district. The expenditure incurred under the head "Agricultural Technology Refinement, Validation and Adoption through Research-Extension-Farmer Linkages" vis-à-vis the amount released to KVKs under ATMA in the States of Uttar Pradesh and Haryana reveal that in UP, except Jalaun, Lucknow and Baghpat, the level of spending under ATMA in rest of the districts had been optimum. Level of expenditure incurred in the three districts had been less than even 10 per cent. It is disturbing to note that no fund had been released to the KVKs in three districts namely, Bareilly, Barabanki and Maharajganj and only a meagre release in Lucknow. Equally baffling had been the low scale of spending by KVKs in Lucknow and Allahabad. In Haryana, the quantum of fund released to the KVKs had been optimal in Sonapat but less in Sirsa. Similarly, the scale of spending by KVKs in Sirsa had been extremely low compared to that in Sonapat. The expenditure incurred on REF Linkages had been as per norms in four districts of UP viz. Jalaun, Bareilly, Maharajganj and Allahabad and in Sirsa district of Haryana. The rest of the districts in both states had miserably failed to do justice to 'research-extension-farmer linkage' that is so important an aspect of ATMA.

7.34 The study reveals that the ATMA structure at the district level has failed to utilize the instrument of KVK to its full potential. The activities of KVK too are left much to be desired. Interface with the officials of KVKs revealed that in some of the districts like Maharajganj, the KVK representatives also many a time did not get the opportunity to attend the Governing Board meetings in view of non-receipt and/or late receipt of notices. In other districts like Barabanki & Bareilly in UP and Sirsa & Sonapat in Haryana, the involvement of KVKs in extension activities under ATMA has been very less during the period 2005-2008 though the situation seems to be gradually improving now. It has also been reported that the KVKs operated by State Agriculture Universities do not have the authority to receive funds from any agency including

State Government directly to the account of their centres but instead the same are required to be invariably routed through the Comptroller of the respective Universities, as per their norms. The procedure also appears to be cumbersome in as much as the proposed training or other programmes/plan of action of KVKs are to be first approved by the University before being submitted to ATMA MC/GB for approval and grant of financial assistance. There is a felt need for greater autonomy and flexibility to KVKs for drawing out extension programmes in the district keeping in view the local needs and priorities so as to ensure proper integration and synergy between the ATMA body at the district level and KVKs.

IMPACT OF THE PROJECT IN REFORMING THE EXTENSION SYSTEM

Brief Profile of Sample Farmers

- 7.35 The findings about impact of the project on extension system are based upon the responses of an all inclusive sample of 7875 farmers, comprising of 44.8 per cent from OBCs, 33.9 per cent from General Category, 20.5 per cent from SCs and 0.7 per cent from STs. The sample is spread out in nine districts of Uttar Pradesh and two districts of Haryana.
- 7.36 As per the size of land holding, more than half (50.6 per cent) of the aggregate sample farmers of the two states were marginal farmers. However, share of landless (tenant) farmers was very low (3.67 per cent). Small farmers accounted for nearly a quarter (23.6 per cent) followed closely by large farmers (22.1 per cent). Across the social categories, marginal farmers are relatively more (80 per cent) among the SC and OBC categories (56 per cent) as against 43 per cent in general category whereas the small farmers are more (32 per cent) in the general category in both the states. However, the landless/tenant farmers are mainly from the SCs in Haryana whereas they are almost equal from all social categories in UP. The observed results are in accordance with the general trend that farmers in weaker sections (SC & ST) continue to be small, marginal and landless tenants.
- 7.37 The overall education level of sample beneficiaries shows that about 28 per cent are educated up to the primary school level followed by 25 per cent who are educated up to high school level; 22 per cent illiterates, 15.2 per cent educated up to inter (+2) and 10.49 per cent graduates. It is really heartening to note that over half of the aggregate sample farmers are educated to a decent level i.e. high school or above with over a quarter of them being matriculate. Yet, the fact that 22 per cent are illiterates is an indication to intensify mass education programmes like 'sarva shiksha abhiyan' to achieve the goal of 100 per cent literacy.
- 7.38 Of the total sample farmers, women representation is 10.9 per cent. Uttar Pradesh with 11.7 per cent representation of farm women fared better than Haryana (7.9 per cent). UP recorded both the highest (27 per cent in Maharajganj) and lowest (1 per

cent in Bareilly) representation of women in sampled farmers. Although the aggregate average (10.9 per cent) for the two studied states indicated near satisfactory level, the district-wise variation is still a concern. As women are the key, yet marginalized stakeholders in agricultural development, their active involvement is a necessity to ensure socially just development. Hence, concerted efforts need to be put for greater mobilization of women in ATMA scheme. The distribution of women in terms of farm size and education brings out that most of the women farmers are marginal/landless category with much higher illiteracy indicating that farming by women may be due to compulsion of illiteracy, separation, helplessness etc.

- 7.39 Occupation wise, agriculture is the main income activity for the predominant majority of farmer respondents. Besides, the landless and marginal farmers are augmenting their income from other activities while small and other farmers are taking up animal husbandry in Haryana and both animal husbandry and horticulture in UP to sustain their livelihoods. The main difference in occupational distribution of men and women is that animal husbandry, especially dairy is taken up more by the women. This finding needs special attention in devising appropriate gender-specific extension strategies like training, exposure visits, etc.
- 7.40 Canals and tube wells/wells are the major sources of irrigation in both the states. Comparatively, about 51 per cent of the beneficiaries in Haryana have canal source as against 38 per cent in Uttar Pradesh. Tube well/well was reported as irrigation source by 89.2 per cent and 93.7 per cent farmers in UP and Haryana, respectively. As regards methods of irrigation, flood irrigation is a universal mode, resorted to by the majority of beneficiary farmers in all the sampled districts of UP and Haryana. In UP, the drip irrigation method was reported in Saharanpur (11.5 per cent), Baghpat (2.7 per cent), and Jalaun and Bareilly districts. In Haryana, the use of drip and sprinkler irrigation method ranged from less than one per cent to a maximum of 3.7 per cent of the sample.

Farmer Oriented Extension Activities

- 7.41 There has been a manifold increase in the programmes on trainings, demonstrations and exposure visits in the sampled districts after the launch of ATMA programme. The analysis of data relating to participation of farmers in farmer oriented activities reveal that on an average two-thirds of sample farmers (68 per cent) have attended extension programmes in agriculture, 16 per cent in animal husbandry, 10 per cent in horticulture, 6 per cent in fisheries, 3 per cent in sugarcane and 1 per cent in joint programmes. The percentage total of more than 100 indicates participation of some of them in more than one programme. The feedback from beneficiary farmers with regard to their participation in training, demonstrations and exposure visits has revealed that the participation in demonstration was more as compared to exposure visits and training. It is interesting to note that the districts with lower level of education and more of smaller holdings have higher rate of participation especially in

training. The correlation between participation in programmes and illiteracy was found 0.3 instead of expected negative. It may be due to either educated ones are not involved in farming or the contents of the programme may not be that attractive or useful to them.

- 7.42 The position of female beneficiaries' participation in extension activities had been low in both States but Haryana had marginally better level of participation in training and exposure visits. Among the sampled districts, Sonapat in Haryana had been worst with low participation in all activities. Participation of female beneficiaries in various extension activities had been generally low except in Sonapat with above 25 per cent participation in all activities. Lucknow and Aligarh are the other districts covering four to five activities with good participation. Aligarh also has the distinction of maximum (54 per cent) participation among the activities - in exposure visits. The participation level had been lower than optimum in the others.
- 7.43 Over 51 per cent of the farmers expressed the view that they could upgrade their skills in various farm practices in view of their participation in training and capacity building programmes. As regards utility, only 31 per cent of farmers found the training programmes fully useful and 26 per cent did not find them useful at all while the remaining termed them as partially useful.
- 7.44 Under Horticulture sector, the overall performance had been good in six of the nine districts in UP and Sirsa in Haryana. The activities under Fisheries sector had been very sluggish in all the years in both the States. Training, demonstration and exposure visits had been undertaken by all districts fairly regularly except Maharajganj ignoring training and Bareilly & Lucknow missing demonstrations. Under Animal Husbandry sector, the coverage of activities both in UP and Haryana had been very sporadic though achievements against targets were consistent. The overall position of various activities undertaken by the departments in the two States was similar but relatively better in UP as compared to Haryana.

Research Extension Farmer (REF) Linkage

- 7.45 The integration of research, extension, farmer and market linkages is an important agenda under ATMA. An overwhelming majority of the respondent farmers reported that the 'Kisan Goshties' are held in their area but it appears to be an annual event to over 57 per cent of the farmers. Of the participating farmers, about 85 per cent found them useful. Only 30 per cent of the respondents confirmed organization of Field Days and most of them (97 per cent) said that they are held once in a quarter. Overall, participation rate was as high as 88 per cent and the field days were found useful by as many as 91 per cent of participants.
- 7.46 Overall 48 per cent of sample farmers reported holding of exhibitions / fruit & vegetable shows in almost all the selected districts and the level of participation was

to the extent of 83 per cent, though regular visitors were only 7 per cent. An overwhelming majority of farmers reported usefulness of such events in disseminating farm related practices and modern technologies. Only 28 per cent of the respondent farmers affirmed holding of Farmer-Scientist interactions in their area. Across the districts, such meetings were reported by maximum 52 per cent farmers in Saharanpur and by the minimum 13 per cent farmers in Bareilly. However, the meetings whenever held were being attended by a large section (over 85 per cent) of farmers. The issues raised in these meetings were reported by 67 per cent participants as being referred to agricultural universities / departments.

Setting up of Farm Schools

- 7.47 An important means to upgrade the process of dissemination in crops and live stock is farmer-to-farmer approach, which is found to be very pertinent as indicated by National Commission on Farmers. Of the respondent farmers, only about 10 per cent reported setting up of farm schools in their villages. Activity-wise, 89 per cent of these schools are for agriculture in general, 7 per cent for dairy/poultry, 3 per cent for horticultural activities like bee-keeping, fruits/vegetables etc. and 0.8 per cent for fisheries. Participation in these schools and utility of the meetings, etc. were affirmed by about 81 per cent of the respondent farmers. The adoption of the learning from these schools was asserted by relatively less number (about 56 per cent) of farmers.

Adoption of acquired knowledge in Farm Field

- 7.48 The training, demonstrations and exposure visit programmes have been found to be largely beneficial to farmers though it varied across the sampled districts. As per the feed back of sample participants in these programmes, the utility of exposure visits is found to be the maximum (95 per cent) followed by demonstrations (93 per cent) and the least (69 per cent) being trainings. However, the participation in these programmes was skewed across districts and there is a felt need to make it more inclusive on the basis of objective criterion like number of holdings or cultivated area or both preferably with some weightage. The utility level of various 'farmers oriented activities' suggests that exposure visits and demonstrations should be given more priority in allocation of funds. In other words, the allocation of budget should be decided keeping in view the utility of these extension activities.
- 7.49 To a pointed question as to whether the knowledge & skills acquired through participation in such programmes are actually being adopted in their own farm field, a large majority (77 per cent) of the participants in demonstrations expressed in affirmative. The overall feed back on adoption of new farm knowledge is 34 per cent, varying from the minimum of about 13 per cent in Lucknow to the maximum of 61 per cent in Baghpat and 50 per cent in Sonapat with coefficient of variations of 44 per cent across districts. A substantial section of the farmers have also affirmed that they

had disseminated the learning among fellow farmers by sharing their experiences and encouraging them to adopt the same on their farms.

Adoption of New Farm Practices & Technologies

- 7.50 Dissemination of the new farm information and technologies/ practices is the first & foremost objective of any extension programme. Of the sample farmers, about 52 per cent felt having gained knowledge of new practices / technologies under ATMA programme. However, the feedback in this regard varied widely over districts from the minimum 17 per cent in Lucknow to the maximum 77 per cent in Sonapat & 71 per cent in Bareilly districts with coefficient of variations of 38 per cent across the districts. The number of farmers taking benefit of deep summer ploughing practice has appreciably increased after ATMA to about 81 per cent from 66 per cent earlier. Likewise, there was increasing use of various cultures after ATMA like Rhizobium culture which increased from about 14 to 21 per cent, use of PSM culture from about 17 to 24 per cent, blue green algae from 4 to 8 per cent and weedicides from 49 to 62 per cent, which is indicative of the benefits of this technological information being propagated to the farmers under the scheme.
- 7.51 The use of pheromone traps, light traps, bio-pesticides and intercultural operations, etc. are considered useful changes in farm technology. The use of pheromone traps is at initial stage as it is being used by only 3 per cent even after ATMA but the use of bio-pesticides has increased from 13 to 30 per cent after ATMA. The advisory services provided by the extension system on integrated pest management are reported by about 31 per cent farmers as compared to 13 per cent before ATMA. Similarly, the advice on intercultural operations has reportedly increased from 61 to 68 per cent after ATMA. Thus, the farmers' summary opinion as well as activity-wise opinion substantiates that dissemination of new technologies and practices have improved under ATMA.

Removal of Inhibitions about the existing Practices

- 7.52 As per the summary feedback of sample farmers, about 52% felt that they have gained knowledge of new practices/technologies under ATMA Programme. However, the feedback in this regard varied widely over districts from the minimum 17% in Lucknow to the maximum 77% in sonapat and 71% in Bareilly districts with coefficient of variations of 38% across districts. Thus, the farmers summary opinion as well as activities wise opinion Substantiates that dissemination of new technologies and practices have improved under ATMA.

7.53 Kisan goshties, field schools and scientists meeting were found useful to the extent of 80 to 90 per cent and even participation of farmers was also about 90 per cent in these farm knowledge dissemination activities. As per summary feed back of farmers, about 33 per cent feel that their inhibitions about the existing practices like

summer ploughing, timely sowing and watering have been removed due to participation in kisan goshties, farm schools, etc. Across the districts these clarifications were satisfying the maximum farmers (50 per cent) in Bareilly, Baghpat (47 per cent) and Sonapat (42 per cent) districts with coefficient of variations of 34 per cent.

Increase in Productivity/Production

- 7.54 The increase in productivity was reported by 18 per cent of sample farmers the maximum respondents being from Bareilly (51 per cent) and Aligarh (34 per cent) whereas it was the minimum in Saharanpur (2.4 per cent) and Maharajganj (3.5 per cent) with coefficient of variations of 69 per cent over the districts.

Farm Information through Print & Electronic Media

- 7.55 Mass media has a vital role to play in agricultural extension which is yet to be exploited to its full potential. The coverage of agricultural extension in All India Radio was 90 minutes per week in the 11 districts before ATMA implementation and has now increased to 810 minutes after three years thanks to almost four hours coverage from Allahabad and Barabanki, though it may not be directly attributed to ATMA. Doordarshan is covering farm related information for only two hours per week, which is quite inadequate. Distribution of printed brochures, leaflets, pamphlets are the main medium of dissemination of farm related information adopted by ATMA. As per statistics obtained from the authorities, 2,66,856 leaflets were distributed during the period 2005-08 in the sampled districts which is quite substantial as compared to mere 13500 in the pre ATMA stage. The number of government advertisements has also risen to 51650 which was almost nil before.
- 7.56 About 55 per cent of the respondent farmers reported availability of leaflets/pamphlets on the package of practices and about 87 per cent of them found the literature very useful with the highest response (93 per cent) in Barabanki and the lowest (48 per cent) in Saharanpur which appears to be correlated with the level of education. The correlation coefficient between level of literature use and farmers above primary level is positive 0.28 per cent as against that of negative -0.26 with percentage of illiterate farmers. Thus, a well conceived strategy needs to be put in place to utilize the medium of print & electronic media in reaching out to farmers across the country.

Increase in Visits of Department Officials

- 7.57 The visits of government officials in the category 'very frequently' has been a revelation for the ATMA scheme as there is a significant increase in farmers reporting this after 3 years of ATMA compared to their before ATMA response. The 'occasional', 'on request' and especially the 'never responses have decreased over

the period. The above change has occurred across all the sampled districts of the two states but the 'very frequent' visits have more than doubled after ATMA in Sonapat, Barabanki, Lucknow and Jalaun. The 'frequent visits' are reported by less than 10 per cent even after three years of ATMA in Allahabad and Bareilly. Before ATMA, the 'on request' and 'never' visits were reported more than 50 per cent in five out of eleven (11) sampled districts and 44 per cent overall but after ATMA these responses are negligible in the eleven districts. Hence, it could be conclusively said that ATMA has definitely increased the frequency of visits to farmer's field by the government extension officials.

Availability of Technical Advice

- 7.58 The level of awareness of the farmers on the new varieties of seeds, use of certified seeds, application of fertilizers, micronutrients, various cultures and farming practices has increased after the project implementation. Availability of technical advice to farmers on new practices and technologies has impacted their higher/rational use under ATMA. The farmers using less than 25 per cent certified seeds are only 33 per cent after ATMA as against about 51 per cent before ATMA. The farmers using more than 50 per cent of certified seeds were about 16 per cent after ATMA as compared to just less than 1 per cent before ATMA. The percentage of farmers not using certified seeds at all are about 18 per cent after ATMA which was as high as 35 per cent before ATMA. This may be termed as a significant achievement which could be attributable to ATMA.

Increase in Facilities

- 7.59 Soil testing facility is being availed by about 46 per cent of the respondent farmers after ATMA as compared to 32 per cent before. Availability of reports in time has also improved from 50 to 59 per cent. The need for checking water quality was felt by 3 per cent farmers only, especially in Sirsa (15 per cent) and Baghpat (11 per cent). Farmers need to be sensitized on the benefits of the checking of water quality under the new arrangements. Thus, the availability and use of soil testing, water testing, testing of micronutrients facilities have improved though slightly, but the delivery of reports has improved much more which itself may induce more farmers to use them.
- 7.60 The post harvest facilities like grading, packing, processing, cold storage were reported as non-available by about 77 per cent of farmers even after ATMA. The analysis indicates almost negligible change in availability of post harvest facilities due to ATMA.

Use of Vermi-compost

- 7.61 The use of vermi-compost, mainly for paddy and wheat crops, has increased to 23.5 per cent after ATMA from 7.5 per cent before ATMA, which is a good symptom.

Among the sample districts, Saharanpur is using maximum vermi-compost at 60 per cent (earlier 55 per cent) after ATMA. This is a significant impact within a period of two years. As regards reduction in expenditure, such a claim has not been endorsed by an overwhelming majority of the respondents. The costs and returns ultimately affect the propagation and uses of technology. Attention will, therefore, be required to be paid on ways of economizing the costs in reaching the technology to farmers.

ADVICE IN MARKETING/VALUE ADDITION

- 7.62 The farmers' responded increase in availability of advice in general for marketing and value addition from about 2 per cent before ATMA to 8 & 15 per cent respectively after ATMA. On specific questions like marketing channels adopted and adequacy of price, it is observed that even after ATMA, the majority (about 66 per cent) of farmers are selling their produce through private dealers, followed by mandis (64 per cent) and Government agencies (40 per cent). We have not gone into the reasons for adopting a particular channel but only 32 per cent were satisfied about the price they are getting. In fact, there may be a debate whether this activity is in the scope of extension or not.

SECTOR SPECIFIC SERVICES AND FACILITIES

Animal Husbandry/Dairy

- 7.63 Supply of quality feed and semen was reported by just 10 and 5 per cent of farmers respectively after ATMA, which means that these two important inputs are largely in private domain. Even the number of health camps does not indicate substantial increase. Supply of quality semen is a vital input to improve the conception rate which is the basis of all dairy economics. Advice in value addition was reported by only 5 per cent after ATMA. Thus, it is indicative of the fact that something substantial in dairy extension is yet to be realized through ATMA.

Horticulture

- 7.64 The supply of seed and planting material was reported from government agencies by about 3 per cent farmers before ATMA which increased to just 8 per cent after ATMA indicating very feeble impact of ATMA on this score. The maximum supply was in Sonapat (37 per cent) and Aligarh (14 per cent). Advice / assistance in marketing and post harvest management are reported by about 3 per cent after ATMA which means that marketing of the produce is and has been the concern of farmers themselves. Therefore, the government extension may focus on supply of seed and saplings while marketing and post harvest management have to be facilitated by government extension in public-private partnership mode.

Fisheries

- 7.65 The supply of fingerlings was reported by 4.9 per cent farmers in post ATMA as against 1.3 per cent in pre ATMA situation. The response of farmers is very low, about 2 per cent for assistance in construction of new ponds or renovation, supply of fish feed, supply of fishing nets and assistance in marketing. It indicates that the actual facilities for fisheries have not been provided though training programmes etc. have well been undertaken.

ECONOMIC IMPACT OF ATMA IN THE STUDY AREA

Impact on Cropping Pattern

- 7.66 Overall GCA of sample farmers has increased in UP by 1.05 per cent and decreased in Haryana by 9 per cent which indicates that the change in cropping pattern is entirely due to intra shifting of acreage among the crops. Crop-wise changes revealed that the acreage has shifted from barley, paddy, bajra, and sugarcane crops to the crops of wheat, R & M, cotton, pulses, vegetables, fodder and horticulture.
- 7.67 Change in fodder area has been the maximum in Saharanpur (150 per cent) followed by 22 per cent in Baghpat, 15 per cent in Allahabad and 38 per cent in UP as a whole. The change was just 2 per cent in Haryana. The districts which have recorded prominent changes in cropping pattern are Sonapat, Baghpat and Saharanpur which are in the vicinity of major consumption centres like Delhi and Dehradun. Therefore, the shift may be partly due to increase in yield of area gaining crops and partly due to other reasons like better procurement price being in close proximity to main urban consumption centres. The yield increase can be largely attributed to ATMA.

Impact on Yield

- 7.68 Yield increase has been recorded in wheat by about 14 per cent, rapeseed and mustard by 19 per cent, paddy by 10 per cent, maize & bajra by 10 per cent and 18 per cent and pulses especially the Arhar has increased its yield by 5 per cent. Sugarcane has recorded decrease of about 6 per cent in yield. The yield increase may be largely attributed to improved extension efforts under ATMA.
- 7.69 At state level, increase in yield is relatively higher in Haryana in case of wheat, paddy, maize and bajra whereas UP has recorded higher increase in R & M. At district level, the higher increase in yield of wheat crop is Baghpat, Sonapat, and Maharajganj; in R & M is Sonapat & Bareilly; paddy in Baghpat and Sirsa, and maize in Saharanpur and Sonapat. These are the districts which have experienced maximum changes in cropping pattern too. The above discussion on changes in yield

has positively influenced changes in area under individual crops which allows us to conclude that the ATMA has played a significant role through yield in changing the cropping pattern.

Impact on Horticulture

- 7.70 The area under all fruit crops has increased by about 36 per cent. In Haryana; banana & floriculture have come up from negligible base in Sonapat district and citrus fruits in Sirsa. In Uttar Pradesh, banana, citrus and floriculture have increased their area more than the traditional mango crop.
- 7.71 Among the districts of UP, guava has increased in Jalaun, citrus in Allahabad while Saharanpur has registered a sizable increase in area under banana, citrus and floriculture. It is difficult to attribute the total change to extension as the changes appear more in the districts neighbouring big cities e.g. Sonapat and Baghpat being in close proximity to Delhi while Saharanpur being nearer to Dehradun as well as Chandigarh.
- 7.72 The other interesting observation is the increasing size of gardens from 2.75 acre in 2005-06 to 3.66 acres in 2007-08. The increase was much higher from 4.67 acres to 10.52 acres in Haryana as compared to increase from 2.60 acres to 3.08 acres in UP. The increase was mainly in Sonapat and Saharanpur where a few big banana gardens have come up. On discreet inquiry, it was found that some non-farmers were purchasing land to establish gardens.

Impact on Price Awareness

- 7.73 Over 65 per cent of the farmers were aware about the minimum support/state administered price (MSP) of sugarcane. The role of ATMA through government departments in creating price awareness was reported by 37 per cent only and a majority of farmers (53 per cent) came to know about MSP through their fellow farmers and the remaining 10 per cent from procurement agencies.

Reduction in Cost of Production

- 7.74 Of the total sample, about 15 per cent have reported some savings in their cost of production (COP) which was about 16 per cent in UP as compared to 12 per cent in Haryana. Among the districts, the maximum farmers in Aligarh (31 per cent) reported saving in COP followed by about 23 per cent in Baghpat & Bareilly and 20 per cent in Sonapat & Allahabad. The extent of savings in the total COP was upto 10 per cent to an overwhelming majority of farmers and savings in the range of 10 to 25 per cent to about 5 per cent of farmers.

Production Increase Attributed by farmers to ATMA

7.75 About 25 per cent of the sample farmers admitted some increase in agricultural production due to ATMA. The extent of increase in Rs. per acre of area was reported upto Rs.1000 by about 79 per cent, between 1000 to Rs.2000 by 9 per cent, Rs. 2000 to Rs. 5000 by 10 per cent and only 2 per cent have reported increase above Rs. 5000. In Haryana, the farmers who have reported increase of Rs. 2000 & above are about 30 per cent as compared to 6 per cent in UP. At district level, the increase was reported by the maximum 36 per cent farmers in Sonapat and 27 per cent in Baghpat. These two districts have also shown relatively much higher changes in their cropping pattern. Thus, the changes in cropping pattern, reduction in cost and technical advice in better use of inputs have resulted in increased income, which augurs well with the reforms in extension.

Impact on Dairy

7.76 The milch animals of sample farmers have increased to 12.5 per cent during 2005-06 to 2007-08 with about 12 per cent in Haryana and 11 per cent in UP. At district level, the maximum increase is revealed in Baghpat at 32 per cent, about 18 per cent in Bareilly, Barabanki and Sonapat and 15 per cent in Saharanpur. Baghpat and Sonapat may be supplying fresh milk to Delhi while Barabanki and Bareilly may be feeding Lucknow. In recent years, the development of private supply chain coupled with extension support from ATMA may have given boost to dairy development in the adjoining area.

7.77 However, the increase in annual milk production animal is just 3 per cent which indicates that the extension support is yet to make an impact on yield. At district level the maximum increases is in Sonapat at 18per cent followed by Maharajganj (15 per cent) and 8 per cent in Baghpat & Lucknow. The annual average net income as per the broad feed back of sample farmers has increased from Rs. 4045 to Rs. 4967 i.e. about 23 per cent. The income increase in UP is more than double of Haryana which was mainly due to realization of much better prices in a span of two years.

Impact on Meet Producing Activities

7.78 The poultry birds reared in 2007-08 after ATMA have almost doubled in the districts of Saharanpur, Maharajganj and Aligarh. The number of units increased from 8 to 41, however, more of smaller units have come up instead of big units. The number of sheep has been reduced in the two years period from 12199 to 144. It was mainly in Sirsa which may have some grazing land in the district and adjoining Rajasthan area. Similarly, goat-rearing is no more a commercial activity as the average unit size is less than five goats which may be kept in backyard by the low income people for their own milk/meat requirement.

Impact on Bee-keeping

- 7.79 Of the total sample, beehive units were found in 3 districts of UP and one district of Haryana without much change in the number of units and the income per unit. It means that the ATMA programme has not made any headway in this activity though it is linked with horticultural crops.

Impact on fish farming

- 7.80 The number of fish ponds increased from 154 to 224 after start of ATMA, though production is not higher in 2007-08 as compared to 2005-06. The value of fish production has increased by almost two times which is mainly due to price effect. It indicates that ATMA has not made any significant impact especially on fish yield.

Impact on setting new enterprises

- 7.81 A total of 93 new enterprises were reported with the maximum 38 in Baghpat followed by 17 in Sonapat and 13 in Aligarh. All these districts being in the vicinity of Delhi, it is difficult to pre-judge whether impact could be attributed to ATMA or is it a result of locational advantage. Profitability was also reported in more of enterprises in Sonapat and Baghpat while all the enterprises in Saharanpur or Allahabad, some what away from the consumption centre of Delhi have reported their non-sustainability which indicates that the locational advantage may be a deciding factor to set up an enterprise.

Increase in overall Income

- 7.82 The increase in income from all sources is reported by 27.4 per cent of the sample farmers while the increase in agricultural production was reported by 25 per cent farmers. It indicates that agriculture was the main source of increase in income. At state level, the increase in income is slightly higher (31 per cent) in Haryana as compared to 26 per cent in UP. Across the districts, the maximum (54 per cent) number of farmers reported increase in Sonapat district followed by Baghpat and Bareilly both at 49 per cent and Saharanpur at 25 per cent. Thus, the increase in income at district level is in consonance with other impacts like adoption of allied activities, prominent changes in cropping pattern and increases in yield.
- 7.83 A large majority (81.8 per cent) of farmers reported slight increase (up to 10 per cent) in income due to ATMA interventions followed by 17.5 per cent, 0.5 per cent and 0.1 per cent who reported income increases to the tunes of 11-25 per cent, 26-50 per cent and more than 50 per cent, respectively. Thus, it could be concluded that ATMA interventions have started showing impact in terms of income increase. It is worth mentioning here that any scheme to show impact at income and other long-term indicators needs time.