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# Constraints faced by the extension personnel in implementation of the Agricultural Technology Management Agency programme (ATMA)

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**Abstract**
The current study was conducted to evaluate the constraints faced by the extension personnel in implementation of the Agricultural Technology Management Agency programme (ATMA). The study used the *Ex-post-facto* research design. Keeping this in view the present study was under taken to study the perception and constraints faced by extension personnel in ATMA the findings of the study revealed that more than half per cent (55.00%) of Assistant Technology Managers (ATMs) belonged to medium perceived usefulness category followed by nearly one third per cent (32.50%) of ATMs belonged high perceived usefulness category. Whereas, 42.50 per cent of Block Technology Managers (BTMs) belonged to high perceived usefulness category followed by medium perceived usefulness category (40.00%). With respect to agricultural officers (AOs) majority (67.50%) of the AOs belonged to medium perceived usefulness category and more than sixty per cent (63.75%) of Assistant Agricultural officers (AAOs) belonged to medium perceived usefulness category. The co-efficient of determination ($R^2$) was 0.605 which revealed that 60.50 per cent of the variation in perception of usefulness of ATMA by extension personnel was together explained by all the independent variables. The study also revealed that majority (84.64%) of extension personnel expressed that multiplicity of schemes and programmes hinder the systematic implementation of programme was the major constraint and lack of interest among the farming community to participate in different activities of ATMA (78.21%). Further, delay in the release of funds (76.43%). Whereas, 75.36 per cent and 73.57 per cent of extension personnel expressed that lack of coordination among different developmental departments and lack of extension functionaries to conduct the activities are major constraints faced by the extension personnel in implementation of ATMA programme.

**Keywords:** Extension personnel, ATMA, perception

## Introduction
Agricultural Extension is often viewed as comprising public, private and semi-public systems that make up a multi-institutional, multi-sectoral pluralistic system (Shepherd, 2007) [7]. The Government of India, Ministry of Agriculture and Department of Agriculture & Cooperation has drawn up a new programme, in consultation with the States, to revive extension work. Under the programme, the institutional mechanism has been devised in the form of Agricultural Technology Management Agency [ATMA] at district level under Innovations in Technology Dissemination [ITD] component of National Agricultural Technology Project [NATP]. The scheme has been conceived on the premise that applying the concept of best practice or best fit solution, different agricultural extension approaches can work well for different sets of farm conditions. The reform initiatives reflect the view that improvements in agricultural productivity require demand-driven, farmer-accountable, need-specific, purpose-specific and target-specific extension services.
Agricultural Technology Management Agency (ATMA) is a new step forward, in the history of agricultural extension in India. A part of National Agricultural Extension Reforms, ATMA opened up new dimensions on comprehensive temperament, harmony, sustainability and farmer's initiatives, for improved production, productivity and stability in production and income in farming sector.

The changing scenario of agriculture with the introduction of the reforms process warrants a remarkable demand on the extension system to revise their own approaches and methodology to carry the appropriate technologies to the farming communities. Agricultural Technology Management Agency (ATMA) is an endeavour to accelerate the process of organization and management reforms which would increase overall efficiency of the research and extension activities through introduction of decentralized planning, active participation of farmers in the planning process through group approach (Kaur *et al*., 2006) [4]. The existing extension system was largely based on agricultural activities and it was top to down in nature, whereas, ATMA activities are based on farming system approach with bottom-up planning. The main focus was on improving/reforming the existing extension system for efficient and effective dissemination of available technologies suited to local conditions and farmer's requirements. Besides, it also aimed at identifying and bridging the gap (through improving Research-Extension-Farmer linkage) between required and available technologies in the changing farming situations. Agricultural Technology Management Agency (ATMA) calls for integrated approach wherein different stakeholders come closer to plan, organize and execute the activities to take full advantage of the technologies demonstrated in the operational area (Kumar *et al*., 2011) [5]. For the programme to be successful it is highly important that those charged with the responsibilities of executing it and those who are getting real benefits out of it, have a clear understanding of the functioning of the system in its totality. A programme, when implemented at grass root level, faces a lot of social, infrastructural, political and other difficulties. The success of the whole extension process is dependent upon the extension personnel, which is the critical element in all extension activities The scientific study of technology transfer system is essential for making the future programme more effective (Barman and Kumar 2014) [1]. Keeping this in view the present study was under taken to study the constraints faced by the extension personnel in implementation of the Agricultural Technology Management Agency programme (ATMA).

## Materials and Methods

For the study 80 AOs (Agricultural officers) and 80 AAOs (Assistant Agricultural officers) from agriculture department were selected by simple random sampling, Block Technology Managers (BTMs) in position available at the time of investigation and 80 Assistant Technology Managers (ATMs) were formed the population of the study. Thus, the total sample size constituted 280 extension personnel. The study was an “Expost-facto” research, carried out in Dharwad, Gadag, Belagavi, Haveri, Vijaypur, Bagalkot and Uttar Kannada districts of northern Karnataka. In order to ensure homogeneity in the sample, it was planned in advance to consider only those extension personnel working at District, Taluka and RSK level who are primarily responsible for field extension work. Responses of perception of extension personnel was recorded on a five point continuum *viz*., strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2, 1, respectively. The total perception score for individual respondent was calculated by summing up the number of sub items as perceived by the individual extension personnel. Data were collected by interviewing respondents with the help of a structured interview schedule developed for the purpose. Constraints imply the problems or difficulties faced by respondents in implementing the ATMA. The problems encountered by the respondents in implementation of ATMA were collected by close end questions which were selected based on the extensive review of literature and consulting expert in the field. Further, the respondents were asked to give their opinion by answer ‘Yes’ or ‘No’. The frequency of constraints as indicated by the extension personnel was the basis for ranking of the constraints. The data collected from respondents was scored, tabulated and analyzed using suitable statistical tools.

## Results and Discussion

It could be observed from Table 1 that more than half per cent (55.00%) of ATMs belonged to medium perceived usefulness category followed by nearly one third per cent (32.50%) of ATMs belonged high perceived usefulness category. Only 12.50 per cent of ATMs belonged to low perceived usefulness category.

The data presented in Table 2 indicated that 42.50 per cent of BTMs belonged to high perceived usefulness category followed by medium perceived usefulness category (40.00%) and low perceived usefulness category (17.50%).The findings of earlier study on attitude of farmers and extension officers towards Agricultural Technology Management Agency conducted by Ramadevy *et al*. (2013) [6] also reported that three-fourths (75.00%) of the extension functionaries had favourable attitude towards extension reforms

The data presented in Table 3 indicates that more than sixty per cent (63.75%) of AAOs belonged to medium perceived usefulness category. while, 23.75 per cent of them belonged to low perceived usefulness category and 12.50 per cent of them belonged to high perceived usefulness category.

Table 4 indicates that majority (67.50%) of the AOs belonged to medium perceived usefulness category. Considerable per cent *i.e.* 18.75 per cent of them belonged to low perceived usefulness category. Only 13.75 per cent of them belonged to medium perceived usefulness category.

Multiple regression analysis was carried out to determine the extent of contribution made by the independent variables and to identify those variables which contribute significantly towards the variation in perception of usefulness of ATMA by extension personnel. The results of multiple regression analysis are presented in Table 5.

A careful observation of the data presented in Table 5 revealed that the 'F' value (14.056) obtained from the multiple regression analysis was found to be statistically significant at one per cent level indicating that all the independent variables put together exerted significant influence on the in perception of usefulness of ATMA by extension personnel.

The co-efficient of determination ($R^2$) was 0.605 which revealed that 60.50 per cent of the variation in perception of usefulness of ATMA by extension personnel was together explained by all the independent variables. Of the eleven independent variables, education, training received organizational commitment and job performance contributed significantly towards influencing the perception of usefulness of ATMA by extension personnel.

The Table 6 revealed that majority (84.64%) of extension personnel expressed that multiplicity of schemes and programmes hinder the systematic implementation of programme was the major constraint because it might be due to both state and central government yearly introducing the new schemes/programme to the department of agriculture and other developmental departments for the development of farmers but in departments limited number of extension

personnel are there to carry out the these schemes and it will become the more work burden to the extension personnel to carry out the both new and old schemes so government as to take care of regular recruitment of the extension personnel for the all line development departments and reduce the more number of schemes to the few. Too many schemes / targets / works in regular departments as well as in ATMA results no (less) time for review therefore poor coordination exists between the stakeholders in planning, organizing and execution of the activities in ATMA. (Bortamuly & Khuhly, 2013) [2] in their study they reported that inadequate financial support under the ATMA scheme was the major constraint.

Lack of interest among the farming community to participate in different activities of ATMA (78.21%) it might be due to the fact that most of activities carried out in the ATMA programme are not need based of the farmers, not seasonal based, more duplication of activities from the different schemes and no proper planning in fixing of the targets according to the needs of the specific farming situation of the district. Delay in release of funds (76.43%) to carry out the activities of ATMA the probable reasons might be due to in department according to plan they do not release funds to carry out the activities they will take the more time to release of budget it will directly affect on the planned activities and more hierarchy structure in the departments affect the early approval of the plan and release of funds. The same finding are in lined with the study conducted by (Dhiraj and Premlata 2014) [3] they revealed that Non-cooperation from block level administration, shortage of Agricultural Technology Management Agency(ATMA) staffs, lack of awareness about Strategic Research and Extension Plan(SREP) among farmers and lack of marketing support were the most important constraints in implementation of SREP

Whereas, 75.36 per cent and 73.57 per cent of extension personnel expressed that lack of coordination among different developmental departments and lack of extension functionaries to conduct the activities it might be due to the fact that in ATMA main core component is the convergence of the line departments but all the line departments are not available in the same time they are busy with their department activities and also in Karnataka separate GB and TIC committees are not there these are also under the control of same agriculture department heads and there is no regular recruitment of extension personnel to the departments the number of extension personnel also less to carry out the activities. Too many vacancies results lack of village level extension field staff to plan, organize and execute the on-going research and extension programmes in agriculture and allied departments.

Further, the other major constraints faced by extension personnel are lack of role clarity and participation of different stakeholders (70.00%) in ATMA programme different stake holders are involved in the implementation of the ATMA their roles are clearly defined in the ATMA guidelines also SEMETI will provide training on the ATMA activities but due to the lack of participation, less experience and less number of trainings they do not know clearly about their roles in the ATMA even though their roles clearly defined in the ATMA guide lines the other reason may be more work burden and lack of interest among the higher officials. Inadequate attention of higher officials on field level implementation (66.43%) the reasons may be more work burden on the higher officials, no separate staff for the ATMA programme, more paper work and more number schemes in departments. Lack of facilities for the mobility of the extension functionaries (50.71%) in ATMA there is no facility for the transportation of extension personnel for effective monitoring and evaluation of ATMA activities in the district. Political interference in implementing schemes/programmes (50.36%) in selection of farmers for the different ATMA activities political leaders impose pressure on the extension personnel to select their relative or their well-known farmers for the programme and it will affect the uniform distribution of the different schemes to the farmers. More paper correspondence work than the field work (50. 00%) in government department more hierarchy structure is there if any sanction or approval of the plan it takes more time and they ask the more documents.

**Table 1:** Distribution of ATMs according to their perception of usefulness towards ATMA n=80

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (Mean – 0.425 SD) | 10 | 12.50 |
| 2 | Medium (Mean ± 0.425 SD) | 44 | 55.00 |
| 3 | High (Mean + 0.425 SD) | 26 | 32.50 |
| Mean:174.86 | | S.D: 13.09 | |

**Table 2:** Distribution of BTMs according to their perception of usefulness towards ATMA n=40

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (Mean – 0.425 SD) | 7 | 17.50 |
| 2 | Medium (Mean ± 0.425 SD) | 16 | 40.00 |
| 3 | High (Mean + 0.425 SD) | 17 | 42.50 |
| Mean: 176.65 | | S.D: 10.00 | |

**Table 3:** Distribution of AAOs according to their perception of usefulness towards ATMA n=80

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (Mean – 0.425 SD) | 19 | 23.75 |
| 2 | Medium (Mean ± 0.425 SD) | 51 | 63.75 |
| 3 | High (Mean + 0.425 SD) | 10 | 12.50 |
| Mean: 168.75 | | S.D: 16.99 | |

**Table 4:** Distribution of AOs according to their perception of usefulness towards ATMA n=80

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (Mean – 0.425 SD) | 15 | 18.75 |
| 2 | Medium (Mean ± 0.425 SD) | 54 | 67.50 |
| 3 | High (Mean + 0.425 SD) | 11 | 13.75 |
| Mean: 171.84 | | S.D: 15.01 | |

**Table 5:** Multiple regression analysis of the independent variables with perception of usefulness of ATMA by extension personnel n=280

| Sl. No | Independent variable | Regression coefficients (b) | S.E. | 't' value |
|---|---|---|---|---|
| 1 | Age | 0.112 | 0.145 | 0.772 |
| 2 | Education | 1.114 | 0.404 | 2.756** |
| 3 | Total experience | 0.093 | 0.152 | 0.611 |
| 4 | Training received | 2.471 | 0.870 | 2.838** |
| 5 | Organizational climate | 0.487 | 0.267 | 1.82 |
| 6 | Organizational commitment | 0.398 | 0.168 | 2.361** |
| 7 | Job involvement | 0.339 | 0.154 | 2.201 |
| 8 | Job Satisfaction | 0.286 | 0.257 | 1.11 |
| 9 | Job stress | 0.200 | 0.125 | 1.605 |
| 10 | Self confidence | 0.479 | 0.347 | 1.380 |
| 11 | Job Performance | 0.285 | 0.123 | 2.317* |

$R^2$=0.605 F=14.046 **

*= significant at the 0.05 level

** = significant at the 0.01 level

**Table 6:** Constraints faced by extension personnel in implementation of ATMA n=280

| Sl. No | Constraints | f | % |
|---|---|---|---|
| 1 | Multiplicity of schemes and programmes hinder the systematic implementation of programme | 237 | 84.64 |
| 2 | Lack of interest among farming community in participating different activities | 219 | 78.21 |
| 3 | Delay in release of funds | 214 | 76.43 |
| 4 | Lack of coordination among different developmental departments | 211 | 75.36 |
| 5 | Lack of extension functionaries to conduct the activities | 206 | 73.57 |
| 6 | Lack of role clarity and participation of different stakeholders | 196 | 70.00 |
| 7 | Inadequate attention of higher officials on field level implementation | 186 | 66.43 |
| 8 | Lack of facilities for the mobility of the extension functionaries. | 142 | 50.71 |
| 9 | Political interference in implementing schemes/programmes. | 141 | 50.36 |
| 10 | More paper correspondence work than field work | 140 | 50.00 |

## Conclusion

The involvement of farmers in ATMA committees was found to be less. Hence the administrators must give more concentration on the formation and strengthening of base level institutions such as FIGs / CIGs. Encourage the farmers to participate in Block Action Plans preparation and incorporating the need based programmes suggested by the members of the FAC. So, suitable participatory approaches should be adopted to involve more number of farmers in ATMA activities at all levels. There is a necessity to reduce introducing number of programmes in the same department and also recruitment of vacant posts as early as possible to reduce the workload of the extension personnel's. The government has to take care of necessary measures for early approval and release of the funds.

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