

**ASSESSMENT OF PROCESS
IMPLEMENTATION OF EXTENSION
REFORMS IN ANDHRA PRADESH**

BY

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M.Sc. (Ag.)

**THESIS SUBMITTED TO THE ACHARYA N.G. RANGA
AGRICULTURAL UNIVERSITY IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF**

**DOCTOR OF PHILOSOPHY IN AGRICULTURE
(EXTENSION EDUCATION)**

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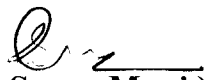
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Smt . **M. Rama Devy** has satisfactorily prosecuted the course of research and that the thesis entitled “ **ASESSMENT OF PROCESS IMPLIMENTATION OF EXTENSION REFORMS IN ANDHRA PRADESH - AGRICULTUARL TECHNOLOGY MANAGEMENT AGENCY (ATMA)** ” submitted is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination. I also certify that the thesis or part there of has not been previously submitted by her for a degree of any university.

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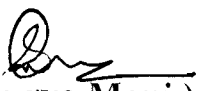

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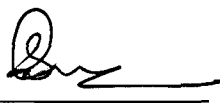
No part of the thesis has been submitted by the student for any other degree or diploma. The published part has been fully acknowledged. All assistance and help received during the course of the investigations have been duly acknowledged by the author of the thesis.


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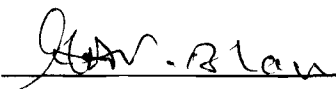
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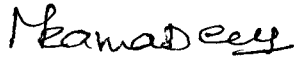
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ACKNOWLEDGEMENT

“Goodness can never be defied and good human beings can never be denied”.

Words are often too less to reveal one's deep regards. An understanding of the work like this is never the outcome of the efforts of a single person. I take this opportunity to express my profound sense of gratitude and respect to all those who helped me through out the duration of this Ph.D. thesis.

The work presented in this thesis would not have been possible without my close association with many people who were always there when I needed them the most. I take this opportunity to acknowledge them and extend my sincere gratitude for helping me and make this Ph.D. thesis a possibility.

First, I would like to submit my gratitude to the Supreme Power, the GOD, since born to till now for being with me always, for his grace and blessings who guided me to work on the right path of life.

*This work would not have been possible without the encouragement and able guidance of **Dr. M. Surya Mani**, Professor, EEI, Rajendranagar, Hyderabad ,since the first day of our Research Discussion, to all the way journey towards my research. Words are too short to represent **Dr. M.Surya Mani's** impressive personality and motivation on paper. Lot more thanks to my mentor for her belief in my abilities, her advice, her encouragement, her wisdom, her intellectual brilliance, and her endless kindness.*

*I owe my sense of gratitude to the member of advisory committee, **Dr. N.Sandhya Shenoi**, Professor, (ICM), NAARM, Rajendranagar, I am indebted to her for her meticulous guidance and pragmatic suggestions during the course of research.*

*I also express my profound gratitude to member of my advisory committee **Dr. R.Ankaiah**, Associate Director of Research, RARS, Anakapally, for his valuable guidance during course of research.*

*I am extremely thankful to **Sri M.H.V.Bhave**, Assistant Professor, Department of Statistics and Mathematics, Agricultural College, Rajendranagar for his valuable guidance during course of research.*

*I am greatly be holder beyond words to express my warmest thanks to **Dr.D.Jagannadha Raaju,Director,EEL** and to the teaching faculty of Extension Education Institute Rajendranagar for their whole hearted co-operation and encouragement.*

*I wish to express my happiness to my better half **Sri. K.Satya Srinivas** and beloved children **Manasa,Viswanath mythravarun and Geetasri** for their unbounded love,support and affection.*

*Finally, I am thankful to my beloved parents **Sri M.L. Kameswara Rao** and **Late Smt. M. Raja Raajeewari Devi** and respected in laws **Sri. K.V. Ramana Rao** and **Late Smt. K. Naagalakshmi** who inspired me to undertake this doctoral programme.*

*I wish to express my deep sense of gratitude to my grand mother **Late Smt.M. Rukminamma** for her endless moral support to me through out my career.*

I am greatly indebted to all the respondent farmers, scientists and Agriculture & line departments, Department officials, DDA, ATMA staff and JDA of Kurnool, Adilabad, Prakasam and Chittoor districts for the help they provided.

*I am thankful to authorities of **Acharya N G Ranga Agricultural University** for deputing me to higher studies..*


(M. Rama Devy)

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ABSTRACT

Name of the author	: Smt. M. RAMA DEVY
Title of the thesis	: ASSESSMENT OF PROCESS IMPLIMENTATION OF EXTENSION REFORMS IN ANDHRA PRADESH
Degree to which it is submitted	: DOCTOR OF PHILOSOPHY
Faculty	: AGRICULTURE SCIENCE
Discipline	: EXTENSION EDUCATION
Major Advisor	: Dr. M. SURYA MANI
University	: ACHARYA N.G. RANGA AGRICULTURAL UNIVERSITY
Year of submission	: 2013

Change is the name of the game today and organizations that learn to cope with evolutionary change emerge as winners. Managing change in extension organizations is a Herculean task as it involves changing the mindset of the farming community towards adoption of new technologies. Agriculture extension has a crucial role to play in the context of demands of agricultural production in a sustainable manner. Reforms in the system envisage an extension service more broad-based and holistic in content and scope, thus beyond agricultural technology transfer. Its normal task of transferring and disseminating appropriate technologies and agronomic practices would not be sufficient. Extension agencies, services and functionaries will need to exercise a more proactive and participatory role, serve as knowledge information agents, initiating and facilitating mutually meaningful and equitable knowledge based transactions among primary producers, agricultural researchers and trainers.

Extension reforms in the country under ATMA (Agricultural Technology Management Agency), envisage a more holistic and broad based approach aimed at empowerment of the farmer through bottom up planning, capacity building and convergence of development departments. The reforms envisaged have been pilot tested with effect from November, 1998 in seven states viz., Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Orissa and Punjab covering 4 districts in each state. An autonomous institution – Agricultural Technology Management Agency (ATMA) has been established in these project districts as a registered society representing various stakeholders, including farmers, in project planning and implementation under the guidance of the National Institute of Agricultural Extension Management (MANAGE), Hyderabad.

ATMA implemented throughout the state of Andhra Pradesh since a decade has taken several initiatives to promote a positive change in the farming community and has now become the keyword for extension in the country. It was launched to consolidate the earlier investments and address specific system constraints, weaknesses and gaps that remained un-addressed by previous research and extension projects. Innovations in Technology Dissemination (ITD) component, in particular was expected to test new innovations in technology dissemination with restructured institutional and

developmental arrangements resulting in delineation of future direction of the extension system and, at the same time, bridge serious Research-extension-farmer (R-E-F) linkage problems that currently constrain the flow of appropriate technology to farmers.

Major processes involved in extension reforms were new institutional arrangements, convergence of line departments, encouraging multi agency extension strategies, farming system approach, group approach to extension and sustainability of extension services.

Reforms in India were pilot tested in 28 districts of 7 states under Innovations in Technology Dissemination (ITD) component of World Bank funded National Agricultural Technology Project (NATP) during the period from November, 1998 to April, 2005. This successful experiment served as a basis to launch the scheme “*Support to State Extension Programmes for Extension Reforms*” in its first phase since 2005-06. The Scheme was later up-scaled to 252 districts during the 10th Plan subsequently extended to 12th plan.

The effectiveness of any programme depends on the way of its implementation. Hence the present study was conducted with the objective to assess the extent of process implementation of Reforms i.e. Agricultural Technology Management Agency (ATMA) in Andhra Pradesh.

The study was conducted in four districts of Andhra Pradesh state namely Adilabad, Kurnool, Chittoor and Prakasam in which the extension reforms (ATMA) were pilot tested (1998-2005) and are being in operation.

An Ex Post Facto research design with random sampling procedure was adopted and was employed during the course of investigation. Four blocks from each district were randomly selected thus making a total of sixteen blocks. In consultation with officers of department of agriculture 60 farmers from each district who were the members of different bodies such as Farmer Advisory Committee (FAC), Governing board, Commodity Interest groups (CIGs), Farmer Interest Groups (FIGs) and other groups through which ATMA activities were being carried out were randomly selected for the study thus making a total of 240 farmers. Extension functionaries (80) who were involved in ATMA activities were randomly selected from the four districts. The data was collected with a well structured interview schedule through personnel interviews and focused group discussions. The collected data was analyzed by using appropriate statistical tools such as frequency, percentage, mean, standard deviation and correlation.

The results indicated that the farmers belonged to middle aged group, with Intermediate education, having 6 to 10 acres of land with medium extension contacts, social participation and economic motivation. Extension functionaries belonged to 36-58 years age with an educational qualification of post graduation and above with service experience of 11-20years.

Farmers and extension functionaries had favourable attitude towards extension reforms. The crop and enterprise intensification and diversification was at medium level. The study results indicated that convergence and linkage mechanisms were at medium level where as coordination was poor. The convergence was observed at planning stage only and at implementation stage short duration convergence was observed while organizing study tours, exhibitions and FSI meetings. The factors contributed to poor coordination were over workload of individual departments, assignment of non departmental works and partiality in allotment of budget to departments other than agriculture department.

The study results indicated that the group led extension and capacity building were at medium level as such no new groups were formed and few groups were active in the districts.

Women participation was at medium level. Representation of women was observed in the committees and were participating in the meetings and short duration training programmes only.

Decentralised decision making and farmer to farmer extension was at medium level. Bottom up planning was at low level. This was due to the reason that needs assessment and prioritization was not done by FACs, as the meetings were not organized properly as per schedule in most of the BTTs. As the members were changed after a particular period of 5 years. Capacity building on processes of reforms was not done to this new group. At officers level also the awareness about processes of reforms was poor.

. Decentralized decision making in process implementation of extension reforms was positively correlated with the age ,education, land possession and extension contacts and social participation.

Capacity building was found non significant with profile characters age, education, land possession, extension contacts, social participation, risk orientation and economic motivation.

It was found that group led extension in process implementation of extension reforms was correlated with age, education, land possession, extension contacts and economic motivation. Among the profile characters age, education, land possession, economic motivation, extension contacts and risk orientation were found correlated at 1per cent level of probability with the convergence in process implementation of extension reforms.

It was found that linkage mechanisms were found positively correlated with age, education, land possession, economic motivation extension contacts and social participation. Coordination was found positively correlated with the profile characters age, education, land possession, economic motivation, extension contacts and risk orientation in process implementation of extension reforms. It was found that the attitude was positively correlated with age, education, land possession, extension contacts, risk orientation and economic motivation.

The constraints elucidated by the farmers in order of priority were that lack of information about programmes in advance, unavailability of internet and communication facilities at FIAC and irregularity in organization of meetings. Suggestions given by the farmers were timely information about ATMA programmes followed by conducting of ATMA meetings regularly ,approval of action plans to be done at the district level itself and action plans to be prepared with the convergence of farmers members.

The constraints enlisted by the extension functionaries in order of priority were assignment of non agricultural works to the officers, shortage of departmental staff, difficulty in formation of FIGs/CIGs at village level Suggestions given by the majority of extension functionaries were early approval of action plans and release of funds followed by separate staff i.e. PD and supporting staff for ATMA and encouragement for formation of district level CIGs.

The results of the study will help the policy makers to direct efforts towards capacity building and creating awareness about processes of reforms among stakeholders which will help to make them to move towards higher continuum of attitude towards reforms.

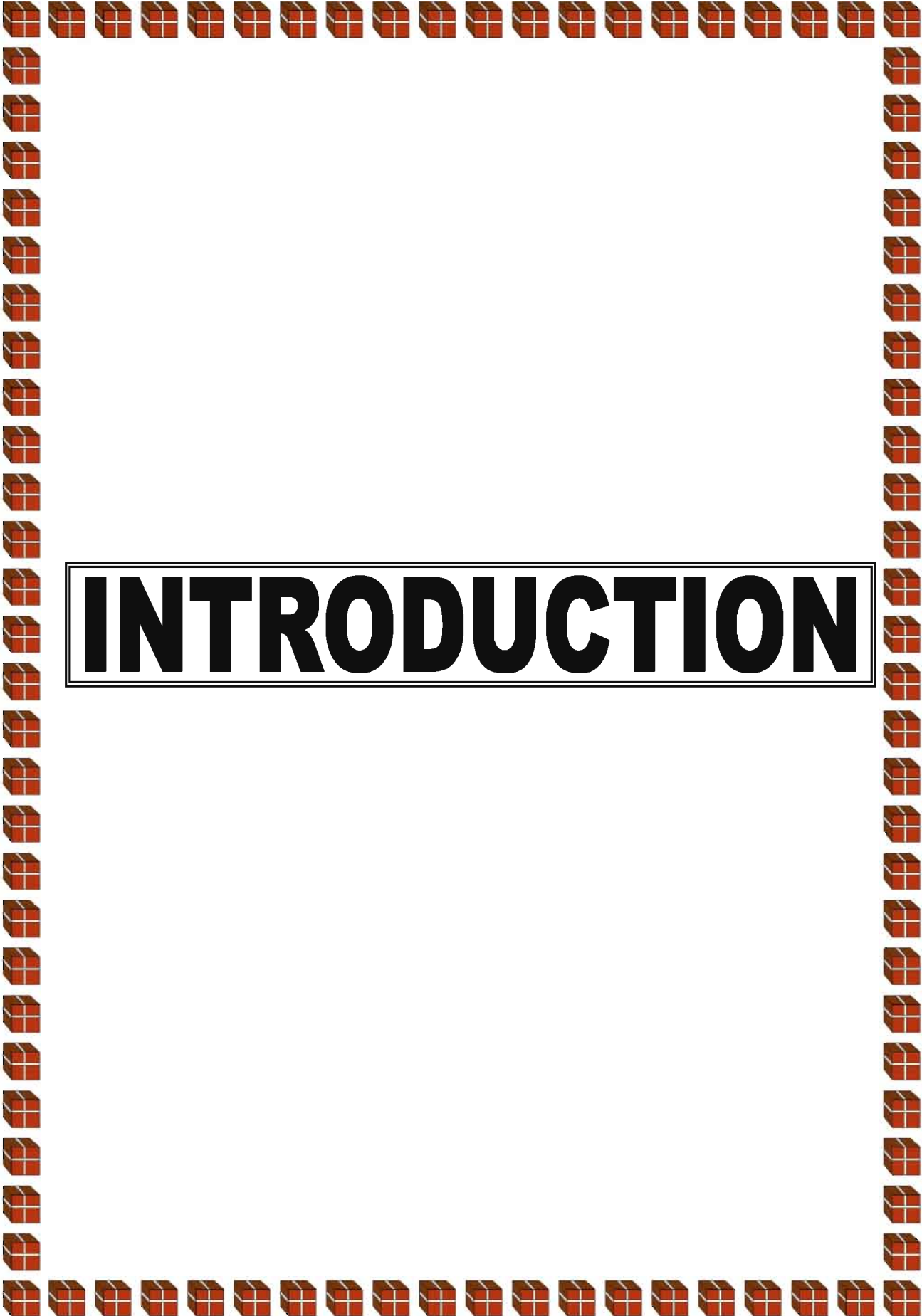
The study revealed that crop and enterprise intensification and diversification were at medium level. In order to improve the situation the policy makers should concentrate on analyzing the successful examples of new enterprises plenty of which were identified by the scientists for each agro climatic zone so that these can be replicated in the similar situations at a faster rate.

The constraints enlisted and suggestions given by the stakeholders in the present study will not only serve as an indicator of prevailing condition but will help the policy makers and administrators to modify the present guide lines for successful implementation of the programmes.

LIST OF SYMBOLS AND ABBREVIATIONS

%	: : Per cent
AMC	: ATMA Management Committee
AP	: Andhra Pradesh
APC	ATMA Project Committee
ATMA	: Agricultural Technology Management Agency
ATS	: Agricultural Technology System
BAP	: Block Action Plan
BTT	: Block Technology Team
CIGs	: Commodity Interest Groups
DAC	: Department of Agriculture and Cooperation
<i>et. al</i>	and others
F	: Frequency
FAC	: Farmer Advisory Committee
FF	: Farmer Friend
FFS	: Farmers Field School
Fig	: Figure
FIAC	: Farmer Information Advisory Center
FIGs	: Farmer Interest Groups
FSI meetings	: Farmer Scientist Interactionmeetings
GB	: Governing Board
GoI	: Government of India
HRD	: Human Resource Development
ICAR	: Indian Council of Agricultural Research
ITD	: Innovations in Technology Dissemination
KVK	: Krishi Vignan Kendra
MoA	: Ministry of Agriculture

N	:	Total number of respondents
NARPs	:	National Agricultural Research Projects
NATP	:	National Agricultural Technology Project
NGOs	:	Non Government Organisations
NSSO	:	National Sample Survey Organisation
PD	:	Project Director
PIC	:	Project Implementation Cell
PRA	:	Participatory Rural Appraisal
RKVY	:	Rakshtria Krishi Vikas Yojana
SAMETI	:	State Agricultural Management and Extension Training Institute
SAU	:	State Agricultural University
SD	:	Standard Deviation
SHG	:	Self Help Group
SREP	:	Strategic Research Extension Plan
T&V	:	Training and Visit
ZREAC meetings	:	Zonal Research Extension and Advisory Council meetings



INTRODUCTION

CHAPTER I

INTRODUCTION

Ensuring Food security and providing gainful employment to the labour force, has been the essential premise for the socio economic development of the people. Agriculture continues to be the predominant source of livelihood for almost 60% of the population - both at the National level and at the State level. With the 11th Five Year Plan's target of achieving 4% growth in Agriculture during the Plan period and with the objective of shifting a sizable excess labour force from the agriculture sector to other non-farm rural sectors- especially to rural industry through skill development, the obvious choice would be improvement of productivity in the agriculture sector.

Public sector extension is a State responsibility, that has undergone several transformations since Independence. Initially the focus was on community development with the policy frame work of food security there has been a steady progression towards technology transfer. The most significant development was the introduction of the training and visit (T&V) extension management system, in the mid seventies, T&V extension was well suited to the rapid dissemination of broad based crop management practices for the high yielding wheat and rice varieties released since the mid-sixties. Given this focus on disseminating Green Revolution technology for major cereal crops, extension activities have been largely carried out by State Department of Agriculture, other line departments like Animal Husbandry, Horticulture and Fisheries have primarily focussed on the provision of subsidised inputs and services to farmers, with little attention and few resources being allocated to extension.

By the early 1990's, with the completion of the third National Agricultural Extension Project (NAEP) the important contributions that the T&V extension approach had made to agricultural development were duly recognised and also realised that it needed to be overhauled in meeting the needs of farmers in 21st century. It was recognised that extension should begin to broad-base its programmes by utilising farming systems approach. For example attention should be paid to the needs of farmers in rain fed areas and to diversify extension programmes into livestock, horticulture and other high value commodities that are capable of increasing farm income. A realisation also dawned that issues like financial sustainability, lack of farmers participation in programme planning and the weak links with research are serious constraints faced by the current extension system.

While the call for demand-driven agricultural extension has existed for several decades now, new modes of reaching out to farmers could have significant impact in India, as they might better reflect the local information needs of farmers. The diverse nature of the Indian subcontinent, with its wide variety of agro climatic regions and broad range of socioeconomic conditions in the rural population, calls for agricultural extension approaches that are context and situation-specific. With more than 81 percent of Indian farmers cultivating an area of 2 hectares or less (India, Directorate of Economics and Statistics 2009; NSSO 2006) there is an increasing need for stronger intermediaries that can facilitate information access for diverse small holding farmers. Further progress in poverty and hunger reduction crucially depends on the increased productivity and profitability of these farmers, which in turn depends on the successful delivery of agricultural extension. Several emerging challenges confront Indian farmers,

these include limited land and water availability, which is further exacerbated by degradation of natural resources, climate changes, changes in demand and consumption patterns, moving towards high-value agriculture, increasing population pressure and liberalization of trade.

In India, the role of agricultural extension in improving agricultural growth is today being recognized with increasing investment. India's 10th and 11th five-year plans emphasize agricultural extension as a key to increasing agricultural growth by reducing the yield gap in farmer fields and therefore stress the need to strengthen agricultural extension in India (Planning Commission 2001, 2005, 2006).

The content of the information provided by agricultural extension approaches, and the information farmers actually need, may not be aligned. There is therefore a need to re examine the current agricultural extension approaches in India to understand where information gaps exist and determine why farmers are not accessing information through the large, well-established public-sector extension system in addition to emerging private and third-sector actors.

Farmers require a diverse range of information to support their farm enterprises. Information is needed not only on best practices and technologies for crop production, which the traditional public- sector extension system provided during the Green Revolution, but also information about post harvest aspects including processing, marketing, storage, and handling. According to Van den Ban (1998) farmers require information related to the following aspects :

- Most appropriate technological options
- Management of technologies, including optimal use of inputs
- Changing farming system options (mixed farming and diversification, animal husbandry, fisheries)
- Sourcing reputable input suppliers
- Collective action with other farmers
- Consumer and market demands for products
- Quality specifications for produce
- Time to buy inputs and sell produce
- Off-farm income-generation options
- Implications of changing policies (input subsidies, trade liberalization)
- Access to credit and loans
- Sustainable natural resource management and coping with climate change

A holistic approach to agricultural extension today goes beyond technology transfer for major crop and livestock production systems. It also includes goals for human capital development, in terms of enhancing the management and technical skills of farm households relating to production and postharvest handling of high-value crops, livestock and fisheries, sustainable natural resource management, family health and nutrition, and leadership and organizational skills, in addition to social capital development, that is, organizing producer groups (Swanson 2006). The major aim of agricultural extension is to facilitate problem solving, creating links to markets and other players in the agricultural value chain, and providing access to information, skills, and technologies.

The conceptual framework described here focuses specifically on the role of agricultural extension approaches in engaging and facilitating farmer's access to information. This is one of several functions extension is now expected to address in the provision of a diverse set of services.

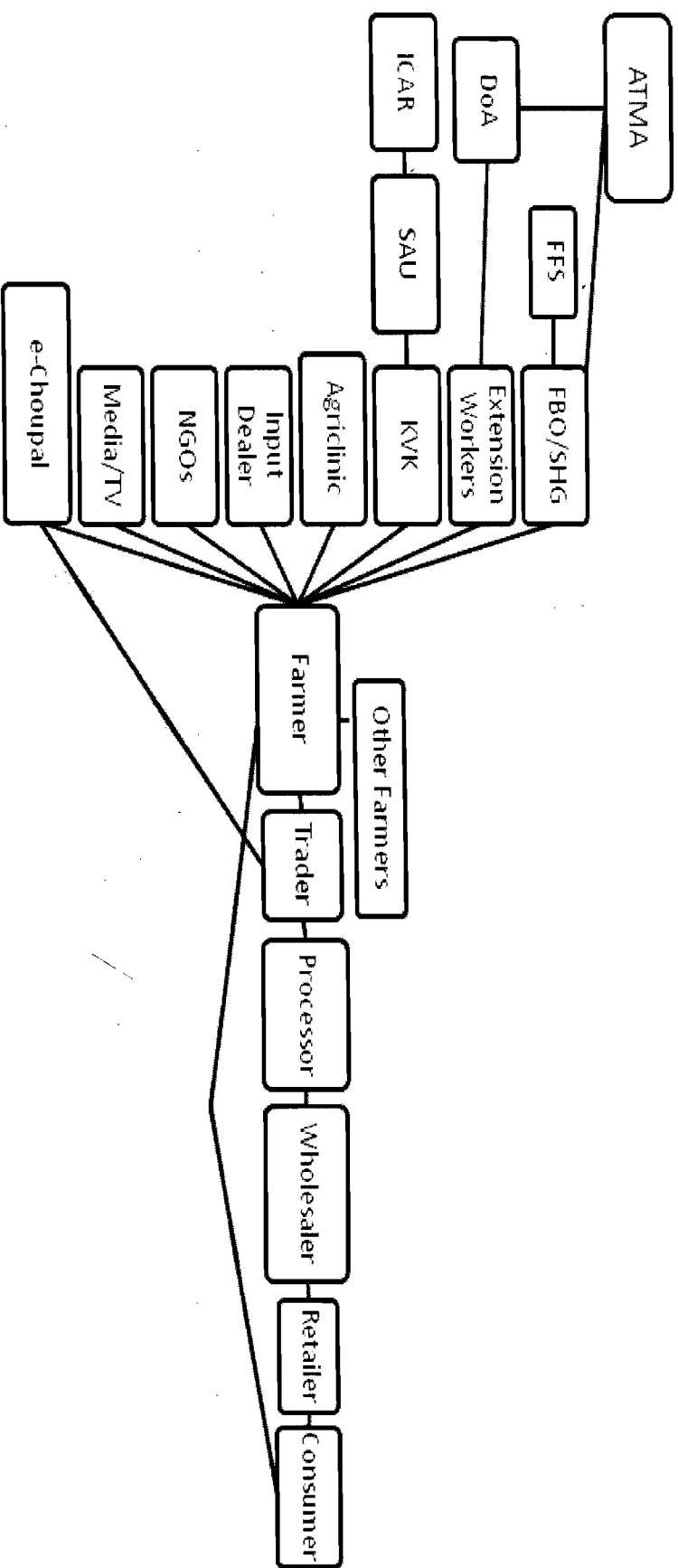


Figure.1.1 Information exchange of some agricultural extension approaches in India

Limitations of the present Agricultural Technology System (ATS):

- 1.The existing research and extension system is largely top-down in nature.
- 2.The present feedback system is very weak.
- 3.Farmers have not only technological but also other needs namely inputs, credit, marketing, social facilitation for group action etc. which public sector alone is not able to meet all these needs in an effective manner.

Need for Reforms:

Agricultural extension has a crucial role to play in the context of growing demands of agricultural production in a sustainable manner. Reforms in the system envisage an extension service more broad-based and holistic in content and scope, thus beyond agricultural technology transfer.

In order to address the key constraints faced by extension system in the country with respect to reducing capacity of public extension services, its lack of decentralized and demand driven focus, the innovations in Technology Dissemination component of the National Agricultural Technology Project (NATP) was in seven states in the country namely Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Orissa, Maharashtra and Punjab through four project districts in each state. This component aimed at pilot testing new institutional arrangements for technology dissemination at district level and below in order to move towards an integrated extension delivery. The project process involved adopting bottom up planning procedures for setting the research and extension agency in order to make the technology dissemination farmer driven and farmer accountable. The extension delivery was oriented towards group approach catering to the location specific requirement of the farmers. Gender concerns have been given adequate emphasis under the project.

To be organized the above reform initiatives under ITD-NATP an Agricultural Technology Management Agency (ATMA) has been established in each district as an autonomous institution providing flexible working environment involving all the stakeholders in project planning and implementation. The ATMA is a unique district level institution, which caters to activities in agriculture and allied departments adopting a farming system approach. It can receive funds directly (Government of India/States, Membership fees, beneficiaries contribution etc). Local research and extension priorities are set through Strategic Research and Extension Plans (SREPs) which were developed by using participatory methodologies such as Participatory Rural Appraisal (PRA). ATMA is supported by a Governing Body (GB) and a Management Committee (MC). The programmes and procedures concerning district wise Research-Extension activities are determined by ATMAGB, and implemented by its Management Committee (MC) in order to manage programme implementation at block level and below, ATMA has established a Farm Information and Advisory Centre (FIAC) at each block in the district. In effect the FIACs act as extension planning and operational arm of ATMA . These are supported by two groups, one a group of technical officers at block derived from different functional areas termed as Block Technology Team (BTT), whereas, the others is a Farmers Advisory Committee (FAC) which is a body exclusively of farmers. While BTT develops the Block Action Plan (BAPs) in light of the SREP and is responsible for its implementation, the FAC plays a more proactive role by scrutinizing, improving and approving BAPs, before these were referred to the ATMA GB for its final approval.

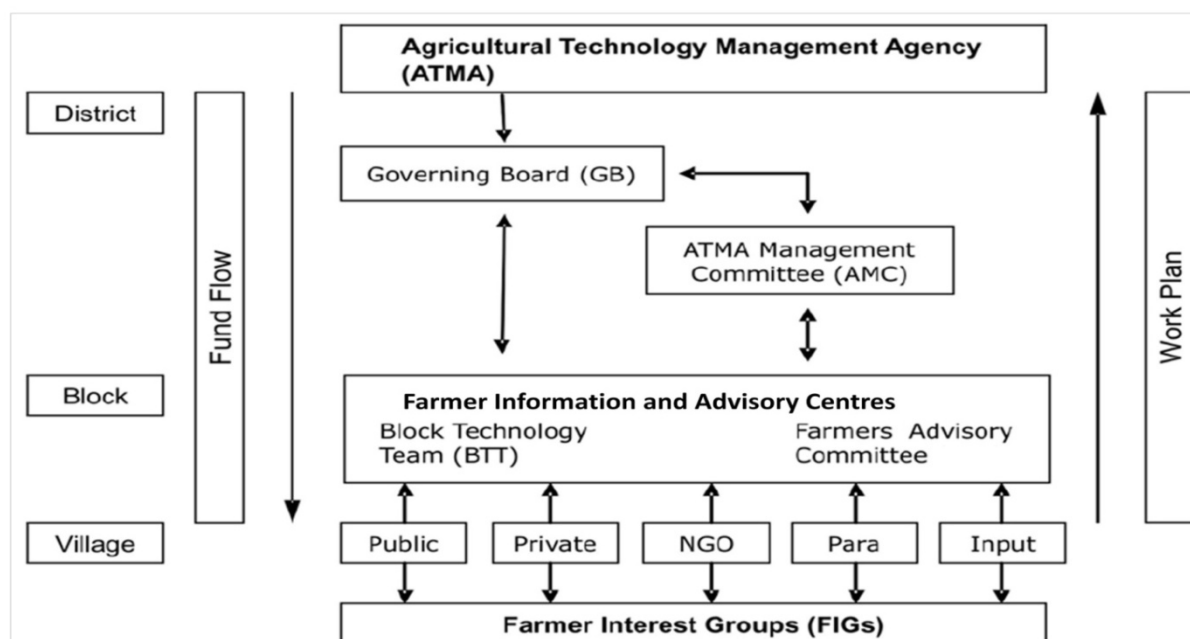


Fig:1.2.Organizational structure of the Agricultural Technology Management Agency up to 2010

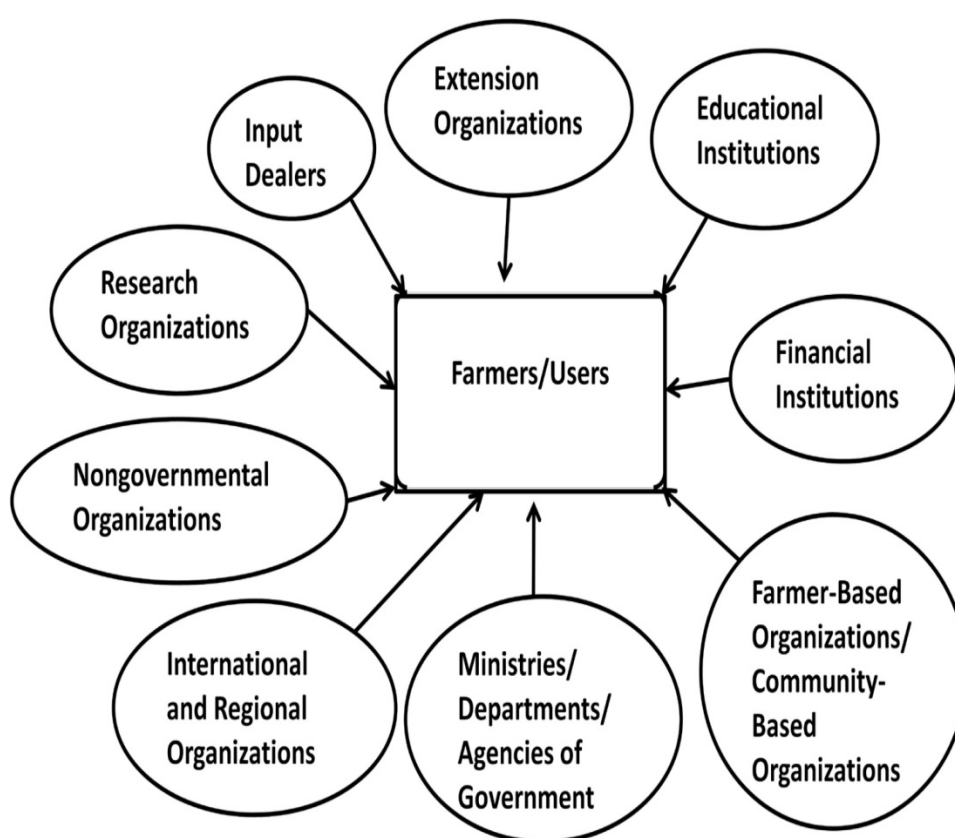


Fig: 1.3. Research Extension development

Commodity oriented Farmer Interest Groups (FIGs/CIGs) are promoted at block/village level to make the technology generation/dissemination farmer driven and farmer accountable. These village level FIGs are ultimately federated at block/district level and represented in FACs and GB. In order to address the extension needs of these groups, ATMA has established close linkages with various players operating at cutting edge level viz. Public, private, NGOs, Para extension workers, input dealers etc. In order to provide needed HRD support in innovative areas of extension delivery a State Agricultural Management and Extension Training Institute (SAMETI) has been established either by strengthening one of the existing apex training institutes in the state or by creating a new SAMETI in a State Agricultural University (SAU). Project activities at state level are closely monitored by an Inter Departmental Working Group (IDWG) functioning under Chairmanship of APC or Secretary (Agriculture) of the State. A Project Implementation Cell (PIC) created at the State Headquarter level provides support to the IDWG.

In June 2010, revised guidelines for ATMA were released to address some of the constraints identified since implementation began in 2005, especially the lack of qualified personnel at all levels, the absence of formal mechanisms to support extension delivery below the block level, inadequate infrastructure support to SAMETIs, and the lack of convergence with other Central and State schemes (Gupta 2010b). Further personnel will therefore be added at the district and block level exclusively for ATMA, and a farmer friend (FF), a progressive farmer for two villages, will work to support extension at the village level. Other schemes, such as the agri clinics and RKVY of National Agricultural Development Project will work with and through the ATMA structure. The guidelines themselves also admit that ATMA has changed focus with national-level implementation, and the reforms including bottom-up planning, a multiagency extension strategy, gender mainstreaming, and coverage of allied sectors and convergence have been neglected (India, Department of Agriculture and Cooperation 2010). In the new guidelines, the FF will fill the block-village gap and will also act to disseminate information to farmers, mobilize farmer groups, and access information for farmers. This approach seems similar to the T&V contact farmer approach which was also selected by extension workers. During T&V, it was noted that larger-scale and richer farmers tended to be selected as the contact farmers, which reduced the capacity of the system to reach small holder farmers (Anderson, Feder, and Ganguly 2006). This will be an important consideration when the FF is selected in the ATMA model, as this person will be the focal point for the implementation of village extension activities. The new revision also pushes the use of farm schools for farmer-to-farmer extension at three to five focal points in every block, with guidelines to give 50 percent learning representation to small and marginal farmers. Effective monitoring and evaluation of these components of ATMA will encourage effective representation of the farming community. Nevertheless, the inherent weaknesses of the public-sector extension system were not addressed in ATMA.

Agriculture Technology Management Agency (ATMA):-Present status

Government of India have introduced the Extension Reforms scheme (ATMA) in all the development districts covering all states and Union territories of India from 1st June, 2005 in phased manner. As a part of this scheme, now the entire state of Andhra Pradesh except Hyderabad Urban district is covered under ATMA with 90:10 Central and State share.

The objective of the scheme “Support to State Extension Programmes for Extension Reforms” is to make extension system farmer-driven and farmer accountable by way of new institutional arrangements for technology dissemination. The objective is proposed to be achieved by promoting, *inter-alia*, the following key reforms:

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

The major processes involved in Extension reforms (ATMA) were as follows

- Bottom up planning
- Decentralized and flexible decision making
- Decentralized and flexible implementation system
- Farmers empowerment
- Farmer to farmer extension
- Extension through women farmers
- Research-Extension-Farmer linkages
- Group approach to extension
- Farming systems approach
- Multi – agency extension system including Public Private Partnership (PPP)
- Sustainability of extension services

1.1 . Need for the study

ATMA was implemented throughout the state of Andhra Pradesh since a decade had taken several initiatives to promote a positive change in the farming community and has now become the key word for extension in the country. It was launched to consolidate the earlier investments and address specific system constraints, weaknesses and gaps that remained un-addressed by previous research and

extension projects. Innovations in Technology Dissemination (ITD) component, in particular was expected to test new innovations in technology dissemination with restructured institutional and developmental arrangements resulting in delineation of future direction of the extension system and at the same time, bridge serious Research-Extension-Farmer (R-E-F) linkage problems that currently constrain the flow of appropriate technology to farmers.

During the pilot testing period, sufficient resources were provided to the Indian Institute of Management, Lucknow for thorough and regular monitoring and evaluation, which uncovered empirical evidence of the impacts of ATMA (IIM Lucknow 2004a, 2004b; Tyagi and Verma 2004). The study revealed an increase in diversification of crops and a 14 percent increase in yields in ATMA pilot districts. Farm income increased by 24 percent in the pilot districts, which was larger than the 5 percent income increase in the other districts. Nevertheless, the impact of the pilot study was not uniform across states and depended on the state government's commitment to the program (Sulaiman 2003b). Additionally, the capacity and motivation of the project director were seen to greatly influence the dynamism of ATMA activities. A number of authors have drawn attention to deficiencies in the impact analysis, which may have overestimated the benefits of ATMA due to selection bias, poor pairing of districts for comparison, restricted sample data indicators, and less statistical control for non project effects (Anderson 2007; Birner and Anderson 2007). Furthermore, the study did not address endogeneity problems or identify the mechanisms or institutions that brought about ATMA benefits. Income gains with reference to landholding size were not considered, so the impact on small and marginal farmers has not been evaluated. Human capital development was evaluated based on the number of training courses and groups organized, but quality of training and group makeup was not considered (Raabe 2008). ATMA represents an institutional reform, but performance of institutions and processes was not considered (Birner and Anderson 2007; Raabe 2008).

Reforms in agricultural extension system envisages an extension system more broad based and holistic in content and scope beyond transfer of technology. ATMA was pilot tested under ITD component of NATP in seven states in the country namely Andhra Pradesh, Bihar, Himachal Pradesh, Jarkhand, Orissa, Maharashtra and Punjab through four projects in each state. Based on the success of ATMA pilot project it was scaled up across the country. Though ATMA represents an institutional reform which was implemented in project mode the success depends on the implementation process only. A few research studies were conducted on monitoring & evaluation of project activities, impact and assessment studies on ATMA activities and have not concentrated on implementation processes. Hence the present study was taken up to throw light on ground reality of implementation status of processes with the general objective to assess the extent of the process implementation of reforms through ATMA in Andhra Pradesh. The objectives of the study were given below

Objectives of the study

1. To study the profile characters of sample respondents.
2. To measure attitude of farmers and extension functionaries towards extension reforms.
3. To find out the extent of crop diversification and intensification by the farmers.
4. To find out the extent of convergence and linkage mechanisms in implementation of activities in gap filling mode.
5. To study the functioning of group led extension and the extent of decentralised decision making.

6. To find out the relationship between the profile of respondents and extent of process implementation of reforms through ATMA.
7. To unearth constraints and suggestions for effective functioning of ATMA

1.2 Scope and importance of the study

The study on process implementation of extension reforms was first of its kind. The study mainly contemplates to find out the implementation status of processes in extension reforms such as bottom up planning, decentralised flexible decision making and implementation system, farmer to farmer extension through Farmers Field School, women participation, convergence, linkage mechanisms and FSBE. The study also analyses in depth attitude of stake holders towards extension reforms. The findings of the study will throw light on status of extension reforms and also the lacuna in the project implementation. The study also aimed to reveal the relationship between selected independent variables and the process implementation. It may be hoped that the findings of the study would help the planners, administrators and stakeholders of ATMA to take steps for rectifying the pitfalls in future for strengthening the project implementation.

1.3 . Presentation of the study with limitations

The entire study was presented in five chapters . The first chapter of the dissertation opens with the Introduction followed by need of the study along with the objectives scope and limitations of the study. The second chapter viz. Review of Literature deals with the review of selected, important and related studies in the field of present investigation. The third chapter viz., Materials and Methods describes the methodology developed for the study location of the study area, sampling procedure followed, quantification of variables selected for the study and statistical tests employed. The fourth chapter deals with the Results and discussions of results elaborately. The final concluding chapter summarises the study along with brief implications of the findings and suggestions for future research followed by literature cited and Appendices.

The present investigation did not suffer due to any unusual limitations other than common ones like funds, time and physical facilities available to student researcher. In spite of these limitations every efforts were made by the researcher to keep this study as objective as possible by deliberately following all the norms of scientific research, well structured interview schedule, pretesting and measurement. Most of the data were collected based on the verbal responses of the respondents. Hence the study may not be free from usual memory bias on the part of the respondents.

1.4 . Research hypothesis

Taking into consideration of objectives set forth, this study has been undertaken hypothetically that the findings would throw light more on understanding of the process implementation of extension reforms . However, the related hypotheses in particular were furnished at the end of chapter related to Materials and Methods.

REVIEW OF LITERATURE

CHAPTER -II

REVIEW OF LITERATURE

The main function of the review of literature was to make the research worker up-to-date with the undergoing research in the particular aspect of investigation. The literature search means to study publications or the study of books relevant to the topic of investigation. Literature helps to acquire general background knowledge in the given field of investigation. It provides valuable information related to the objectives of the proposed research.

Research in any field invariably requires a sound theoretical understanding of the problem under study. Among various extension approaches used in India, ATMA model is a relatively new and emerging extension approach. The present study is concerned with **“Assessment of process implementation of Extension Reforms in Andhra Pradesh-Agricultural Technology Management Agency (ATMA)”**. Hence, there is a dearth of literature with respect to performance of ATMA in general and process implementation of extension reforms in particular. However, an attempt was made in this chapter to review all the available literature and for its appropriate presentation in this chapter under the following heads:

2.1 Profile characters of farmers and extension functionaries

2.2 Attitude of extension functionaries/ farmers towards extension reforms

2.3 Crop and enterprise intensification & crop and enterprise diversification promoted through extension reforms

2.4 Convergence of programmes in extension reforms

2.5 Association of attitude and convergence of programmes with the profile of respondents and process implementation of extension reforms

2.6 Constraints and suggestions

2.7 Hypothesis of the study

2.1 Profile characters of farmers and extension functionaries

2.1.1 Age

Ramakrishna (1999) indicated that a large number of (65.83%) trainees were under middle age group followed by young (19.17%) and older age(15.00%) groups in his study on the impact of TANWA.

Murthy (2000) in his study on Janamabhoomi programme in chittoor district identified that majority (55.83%) of beneficiaries of janmabhoomi programme were middle aged.

Madhavalatha (2002) reported that (36%) of FTC trained farmers belonged to middle age followed by equal percentage (31.6%) of young and old age in case of trained farmers. Among untrained farmers (43.33 per cent) belonged to middle age followed by old (30%) and young age (26.67%) farmers respectively in her study on knowledge and adoption of integrated pest management practices in cotton.

Ravichandra Prasad (2002) reported that majority of the beneficiaries (60.71%) were middle aged followed by young age (35.71%) and old age (3.58%) categories respectively.

Narasaraju (2004) reported that majority (51.67%) of respondents belonged to middle age group followed by young age (33.33%)and old age groups (15.00%)

Obaiah (2004) revealed that more than half (52.14%) were middle aged while 26.43 percent were young aged and 21.43 percent were old aged in Farmers Field School.

Ravisankar (2005) analysed the impact of agricultural weather forecasting in A.P and concluded that majority of respondents were old age group (53.33%) followed by middle age group (25.0%) and young age (21.67%)

Mohan (2009) studied the participatory management of tank irrigation and its sustainability in A.P and inferred that majority (60.56%) of the farmers were of middle age group followed by old age (23.33% and young age (16.11%) group.

Santhi Nirmala et al. (2011) in study on level of awareness about rythu chaitnaya yatra programme and its effect on the farmers in Andhra Pradesh reported that majority of the participant farmers of RCY were middle aged (56.60%) followed by young age (23.30%)

Srinivaasulu (2011) revealed that majority of the FFS farmers belonged to middle age (70%) followed by Young (36.66%) and old age (2.3%).

Ram Jiyawan et al.(2012) in a study on farmers attitude and constraints in privatization of Agricultural Extension Services concluded that majority of the selected farmers were middle aged (65%) followed by Young age (19%) .

2.1.2 Education

Veerendranath (2000) revealed that majority of castor growers (30%) were illiterate, 18.89 per cent of them belonged to can read only category, 17.22 per cent of them had primary level of education, 16.11 per cent of them belonged to can read and write category, 9.44 per cent were middle school of education, 6.67 per cent were under intermediate category and the rest 1.67 were graduates and post graduates.

Madhavalatha (2002) reported that (35%) of FTC trained farmers were educated up to high school level followed by middle school (28.33%), college and above (25%) and primary school (6.67%) education respectively.

Ravichandra Prasad (2002) reported that 35.12 per cent of beneficiaries were educated up to primary level followed by middle school level (16.07 %) ,high school level (12.50%),functionally literate (12.5%),illiterate (12.5%) and college level (10.71%).

Siva Subrahmanyam (2003) indicated that majority of respondents (35.0%) had primary school education followed by middle school (18.33%), higher secondary school (15.005) and secondary school (12.5%) education. While 10.00 per cent can read and write and 9.17 per cent can read only .

Nagabhushanam (2003) in his study on analysis of profile characteristics of watershed farmers observed that majority (44.44%) of farmers had higher education status followed by medium (41.67%) and low education (13.89%).

Natarajan (2004) revealed that majority of FFS farmers belonged to middle school level (34.44%) followed by high school level (28.89%), higher secondary school level (18.89%) and primary school level (16.67%), while 1.11 per cent illiterates.

Obaiah (2004) indicated that among trained farmers (37.86%) had education upto primary school level, followed by high school level (20.17%), middle school level (17.14%) While (14.29%) were illiterates followed by functionally literate (7.14%) and college education (2.86%).

Ramesh Babu and Venkataramaiah (2004) specified that majority (27.06%) of the beneficiaries of Indo-Dutch Network Operational Research Project on drainage and water Management for salinity control belonged to primary schooling followed by middle schooling (21.18%), collegiate education (18.82%), illiterate (17.65%), high school (10.59%) and functionally literate (04.70%).

Vanetha (2005) specified that majority (33.33%) of the respondents had high school education followed by middle school (20.00%), illiterate (16.67%), primary school (13.33%), higher secondary (08.33%) and graduate education (08.33%) from her study conducted on awareness level of the farm women about development programmes.

Rajeev *et. al.* (2006) from their study conducted on adoption level of CSR hybrids by the sericulturists of Kolar district of Karnataka revealed that half (50.00%) of the respondents had low level of education followed by medium (37.50%) and high (12.50%) level of education.

Thangaraja *et al.* (2008) carried out studies on socio economic characteristics of dry land farmers in Dindigul district of Tamil Nadu and inferred from their study that nearly half (44.45%) of the dry land farmers had high level of education, one fourth (25.55%) had medium level of education followed by cultivators with low level of education.

Ravi Nayak (2010) in a study on the Agricultural Technology Management Agency in Prakasam dt of AP reported that majority of the rice farmers in ATMA programme were having high school education (25.84%) followed by middle school education (20.00%) and primary school education (19.16%)

Santhi Nirmala *et al.* (2011) in study on level of awareness about *rytu chaitnya yatra* programme and its effect on the farmers in Andhra Pradesh reported that majority

of the participant farmers were having middle school education (35.00%) followed high school (25.03%).

Srinivaasulu (2011) revealed that majority of the FFS farmers belonged to high school education (38.33%) followed by Intermediate education (22.22%), primary school (20.55%), graduate education (10.00%) and illiterate (8.8%)

Ram Jiyawan et al.(2012) in a study on farmers attitude and constraints in privatization of Agricultural Extension Services concluded that majority of the selected farmers were having high school education followed by primary school (38%) education.

2.1.3 Farm size

Nadre (2000) stated that 50.00 percent of respondents had land up to 4.0 ha followed by 4.1 to 10.0 ha category with 32.7 per cent and 11.5 percent respondents were found in the category o above 10.00 ha

Baswarajaiah (2001) observed that 43.33 percent of respondents were small farmers followed by marginal(30.0%), medium farmers(25.83%) and negligible percent(0.84) of big farmers

Gattu (2001) reported that half of the respondents (49.01%) were found to be medium farmers followed by small farmers (35.99%) and large farmers (15%).

Sivanandan (2002) stated that majority of the respondents were small farmers followed by marginal(26%) and big farmers(18%)

Reddy (2003) revealed that majority of the rice growers were in the medium category (53.06%) followed by small (29.79%) and big farmers (17.14%)

Obaiah (2004) indicated that half (48.87%) of the trained farmers belonged to medium land holding category and followed by 20 per cent with large holdings, 16.43% small holdings and 15.0 percent had marginal holdings

Natarajan (2004) revealed that majority of the FFS farmers belonged to small (63.33%) followed by big (21.11%) and marginal (15.56%) farmers.

Ravisankar (2005) inferred that majority (40.00%) of the respondents had small farm holdings of less than 5 acres followed by large (35.56%) and medium (24.44%) land holdings.

Thangaraja et al. (2008) from their study inferred that nearly one third each of the dry land farmers belonged to bigger (35.55%) and medium (34.45%) land holding groups while 30.00 per cent fell under low group.

Santhi Nirmala et al. (2011) in study on level of awareness about *rytu chaitnaya yatra* programme and its effect on the farmers in Andhra Pradesh reported that majority of the participant farmers of RCY were having small farm size (58.30%) followed by big farmers (23.30%)

Srinivaasulu (2011) revealed that majority (61.66%) FFS respondents were small farmers followed by big (22.22%) and marginal (16.11%).

Ram Jiyawan et al. (2012) in a study on farmers attitude and constraints in privatization of Agricultural Extension Services concluded that majority of the selected farmers were marginal having land holdings up to 1 ha (54%) followed by small farmers (31%) having land holdings up to 1.1 -2.0 ha.

2.1.4 Extension contact

Murthy (2000) identified that majority (64.17%) of beneficiaries of Janmabhoomi programme had medium extension contact.

Ravisankar (2000) revealed that 46.67 per cent of respondents had high level of extension contact followed by medium (30%) and low (23.33%) levels.

Rajaratnam (2000) observed that from his study conducted on Impact of sunflower on-farm extension demonstrations (OFEDs) in Kurnool district of Andhra Pradesh, less than three fourth of the respondents (72.37%) belonged to medium mass media exposure followed by high (15.79%) and low (15.79%) categories. He inferred that the majority (82.90%) of the respondents belonged to medium extension contact followed by high (14.47%) and low (02.63%) categories from his study conducted on Impact of sunflower on-farm extension demonstrations (OFEDs) in Kurnool district of Andhra Pradesh.

Madhavalata (2002) reported that 43.33 percent of respondents had high extension contact followed by low (30.00%) and medium (26.67%) levels in case of trained farmers. She also reported that 40.00 percent of respondents had high level of mass media exposure followed by equal percentage of respondents (30.00%) had medium and low level in case of trained farmers

Padmavathi and Reddy (2002) inferred that majority (66.00%) of the respondents had medium mass media exposure followed by equal per cent with (17%) low and high (16.67%) mass media exposure of Mitra Kisans in National Watershed Development Project for rainfed areas. Also analyzed that the majority (66.67%) of the respondents had medium extension contact followed by low extension contact (21.11%) and high extension contact (12.22%) from their study on personal and socio-economic characteristics of Mitra Kisans in National Watershed Development Project for rainfed areas.

Ravichandra Prasad (2002) indicated that majority of the beneficiaries (80.36%) had medium extension contact followed by high (14.28%) and low (5.36%) extension contact. He also indicated that 73.22 per cent of the beneficiaries had medium mass media exposure followed by high (16.07 %) and low (10.71 %) mass media exposure respectively.

Siva Subrahmanyam (2003) reported that majority of the respondents (60.84%) had medium level of extension agency contact followed by low level of contact with extension agency (30.83%) only 8.33 per cent of the respondents had high extension agency contact.

Nagabhushanam (2003) reported from his study on analysis of profile characteristics of watershed farmers that the majority (42.22%) of farmers had medium mass media status followed by high (35.52%) and low (32.22%) mass media exposure.

Obaiah (2004) indicated that 55.72 per cent of the trained farmers had medium extension contact followed by 22.14 per cent each had low and high extension contact. He also reported that 58.87 per cent of respondents had medium level of mass media exposure followed by equal percentage of medium (20.71%) and low (20.72%) levels in case of trained farmers.

Gopinath (2005) revealed from his study conducted on knowledge and adoption of bengalgram farmers in Kurnool district of Andhra Pradesh that the majority (46.00%) of the farmers had medium extension contact, followed by those with low (32.67%) and high (21.33%) extension contact. He also reported that the majority (68.00%) of the bengal gram farmers were having medium mass media exposure followed by high (17.33%) and low (14.67%) mass media exposure.

Premavathi (2005) reported that 38.67 per cent of the farm women had medium extension agency contact followed by low (38.00%) and high (23.33%) from her study on profile of farm women in imparting knowledge and skills to farm women.

Ravisankar (2005) from his study inferred that nearly half (51.67%) of the respondents had medium level of extension contacts followed by high (34.44%) and 13.89 per cent low level of extension contacts.

Rajeev *et. al.* (2006) concluded that majority (53.33%) of respondents had medium extension contact followed by high (25.00%) and low (21.67%) level of extension contact on adoption level of CSR hybrids by the sericulturists of Kolar district of Karnataka.

Thangaraja *et al.* (2008) from their study inferred that majority (36.70%) of the dry land farmers had high level of extension contacts followed by medium (32.20%) and 31.20 per cent low level of extension contacts.

Abhishek Gowda (2009) observed that majority (65.83%) of the sugarcane growers had medium extension participation followed by low (20.00%) and high (14.17%) from his study on entrepreneurial behaviour of sugarcane growers in Mandya district of Karnataka.

Ravi Nayak (2010) in a study on the Agricultural Technology Management Agency in Prakasam dt of AP reported that majority of the rice farmers in ATMA programme had high extension contacts (45.84%) followed by medium extension contacts (32.50%)

Santhi Nirmala *et al.* (2011) in a study on level of awareness about *rytu chaitnaya yatra* programme and its effect on the farmers in Andhra Pradesh reported that majority of the participant farmers of RCY were having medium extension contacts (68.70%) followed by low extension contacts (78.30%)

Srinivaasulu (2011) revealed that majority 59.44 percent of FFS farmers had medium level of mass media exposure followed by 22.77 per cent low and 17.77 high mass media exposure. He also observed that 63.88 per cent of FFS farmers had medium level of extension contact followed by 21.11 percent low and 15.00 per cent high extension contacts.

2.1.5 Risk orientation

Singh et al (1999) indicated that majority of farmers had low (63.00%) risk preference followed by medium (22.00%), low (15.00%) risk preference towards dry farming technologies

Usha Devi (2000) concluded that majority (68.84%) of the trained farm women had medium risk taking ability followed by low (15.94%) and high (15.22%) risk taking ability in her study entitled “A critical study on impact of ANTWA project in Prakasam district”.

Veerendranath (2000) reported that majority of small farmers had low risk orientation ,medium farmers had medium and large farmers had high risk orientation respectively.

Padmavathi and Reddy (2002) specified that majority (63.33%) of the respondents had medium risk orientation, followed by low (20.00%) and high (16.67%) risk orientation of Mitra Kisans in National Watershed Development Project for rain fed areas.

Subrahmanyam (2002) inferred that 75.00 per cent of the trained farmers had medium risk orientation while 13.34 percent had low and 11.66 percent had high levels of risk preference.

Madhavalata (2002) reported that 45.00 per cent of respondents had medium level of risk orientation followed by low (31.67%) and high (23.33%) levels in case of trained farmers.

Siva Subrahmanyam (2003) concluded that majority (60.84%) of the coconut farmers had medium level of risk orientation followed by low (24.17%) and high (15.00%) levels of risk orientation .

Sridevi (2003) reported that majority of the respondents (73.34%) had medium risk orientation followed by high risk orientation (16.66%) and low risk orientation (10.00%) in her study on the media exposure and consumption by farmers of adopted village Machavaram in Guntur district.

Ramesh Babu and Venkataramaiah (2004) reported that the majority (70.59%) of the beneficiaries had medium level of risk taking ability followed by low (14.12%) and high (15.29%) risk taking ability from their study on profile of the beneficiaries of Indo-Dutch Network Operational Research Project on drainage and water management for salinity control.

Asokhan *et. al.* (2008) observed that majority (47.67%) of the respondents had medium level of risk orientation followed by (36.67%) high and (15.63%) low levels of risk orientation from their study on rural women self-help group members –a profile analysis.

Ravi Nayak (2010) in a study on the Agricultural Technology Management Agency in Prakasam dt of AP reported that majority of the rice farmers in ATMA programme had medium risk orientation(59.16%) followed by low (20.84%) and high (20.00%) levels.

Srinivasulu (2011) revealed that majority 56.11 percent of FFS farmers had medium level of risk orientation followed by 22.77 percent high and 21.11 percent low risk orientation

2.1.6 Decision making

Chatterjee (2000) inferred that majority (68.33%) of the respondents had medium level of decision making ability followed by low (18.33%) and high (13.33%) levels of decision making.

Devi(2000) found that majority (49.28%) of the respondents had medium level of decision making ability followed by high (28.26%) and low (22.46%)levels of decision making.

Obaiah (2004) reported that majority (57.14%) of the respondents were having medium level of decision making ability followed by high and low decision making ability with equal percentage (12.43%)

Nisha Aravind (2006) in her study on effectiveness of FFS approach in rice ecosystem for IPM observed that farmer regained the competence to make rational decisions concerning the management of crops.

Lenin *et al* (2009) revealed in the study of decision making by farmers in ATMA that a majority of (50 %) of ATMA staff of Ahmednagar district of Maharashtra

expressed that the farmers had a very high level of participation in decision making at various level of implementation of the scheme, whereas a majority (32.00 %) in Dahod district expressed that farmers had very low level of participation in decision making.

Sreenivasulu (2011) reported that 51.11 percent of FFS farmers belonged to medium decision making category about cotton IPM practices followed by 27.77 percent high and 21.11 percent low decision making category

2.1.7 Social Participation

Narasaraaju (2004) reported that greater than 1/3 of the respondents (35%) were members of farmers organizations, members of Gram panchayat (23.34%), followed by Primary Agriculture Cooperative Societies (13.33%), religious institutions (9.17%), youth club and milk society (3.33%). He also reported that participation is high in Grampanchayat with a mean score of 2.20 followed by farmers organisations (1.83), Primary Agriculture Cooperative Societies (1.63), religious institutions and milk society (1.17).

Mishra (2005) reported that the overall participation of stakeholders was 52 per cent at three stages of Institution Village Linkage Programme (IVLP) in Raipur block and maximum at the stage of execution of interventions (58 %) followed by management stage (51 %) and planning stage (46 %).

2.1.7 Grouped extension

Srinivasan (1996) while reporting about the working of two NGOs assisted women groups of IFAD project, noticed that belonging to a group gave the woman a lot of confidence. These women were able to take charge of their lives and solve their problems only through united action.

Usha Devi (2000) revealed that majority (54.35%) of the respondents were in medium training received category followed by high (45.65%) from her study on impact of ANTWA project in Prakasam district of Andhra Pradesh.

Himaja (2001) in her study on the Entrepreneurial behaviour of self help group women of Swarnjayanthi Gram Swarozgaryojana in Nellore district of Andhra Pradesh indicated that majority (65.00%) of the respondents had medium level of training received followed by low (20.00%) and high (15.00%) levels of training received.

Bhagyalakshmi (2002) observed that the self help group members had medium group orientation (46.25%) followed by high (39.58%) and low (22.08%) orientation.

Nagabhushanam (2003) inferred that majority (42.78%) of respondents had not undergone any training, whereas (22.22%) of respondents had undergone medium level of training followed by high (20.56%) and low (14.44%) level of training.

Sivasubramanian (2003) observed that the majority (62.50%) of the coconut farmers had participated few training programmes while 33.33 per cent had medium and 04.17 per cent had high levels of participation in training programmes.

Suneetha (2004) revealed that majority (65.00%) of the respondents had not undergone any training where as, 35.00 per cent of them received training from her study on preferences knowledge and opinion of young rural women about self-employment in Visakhapatnam district of Andhra Pradesh.

Singh and Swanson (2006) reported that the medicinal and aromatic plants cultivation under ATMA in Patna district which started with growing Vinca Rosa by five Farmers Interest Groups in 2000 had spread to a network of 50 FIGs who were pursuing medicinal and aromatic plants cultivation.

Riar and Rajinder (2007) in a study on impact of farmers interest groups on the awareness of members about the programmes and activities of different development departments reported that the farmers interest groups played a significant role in creating awareness about the programmes and activities of different organizations concerned with agricultural development. The group members who are aware about the programmes and activities of different components of the extension system can further enlighten the non members ,even if they are not personally interested in a particular programme.

Gupta (2008) stated that ATMA scheme inspired the women of Kupwara district to form in vegetable growers group, who had grown off season marketable vegetables under the guidance of BTT and sold through their co-operative society. He also reported that the women of FIGs had developed value added products.

Goswami (2010) reported in a study on impact of different trainings conducted under ATMA programme in three blocks of Madhya Pradesh that ATMA promoted seed growers society by four youth farmers groups for soyabean seed production

Srinivasulu (2011) revealed that majority 53.33 per cent of FFS farmers had medium level of group orientation followed by 27.20 per cent high and 19.44 percent low group orientation.

Ponnuswamy et.al (2012) in an article Market linkages for women farmers reported that the Poultry Association Commodity Interest Groups of farmers were linked and networked by ATMA with a buy back arrangement of maize at fixed price in Chittoor district of Andhra Pradesh. Poultry farmers association provided 2MT of poultry manure free of cost to the networked farmers and quality maize seed was supplied through ATMA maize area in Chittoor district expanded from 60 ha to 1,150 ha . Farmers Interet Group promoted by ATMA, Patna entered into contract for production of Basmati rice with M/s Aditya Agro-clinic and Agro Business center, Mungeer a basmathi rice exporter. In the same lines promotion of production of snow pea under ATMA through buy back arrangement with M/s Pamer Agro ventures (P) Ltd by supplying seed and other inputs and agronomical practices to FIG exported the snow pea and realised highly remunerative prices.

2.1.8 Capacity building

Gupta (2008) stated that women farmer of Sholapoor village in Budgam district started preparations of value added products of fruits and vegetables through capacity building programme under ATMA.

Goswami (2010) reported that ATMA trainings in three blocks of Madhya Pradesh focussed on popularisation of farm mechanisation, vegetable production, organic cultivation and seed production She also reported that the trainings helped the farmers to increase the knowledge level of farmers about cost effective methods.

2.1.9 Women participation

Khandelwal *et al* (2007) reported that the maximum involvement of women was in the execution stage (69.9 percent) followed by involvement in planning stage (55.3 percent) in the conservation of natural resources programme in Udaipur district of Rajasthan.

Goswami (2010) reported that ATMA addressed the complaints of women by training at different places and developing enterprenuership among women i.e. the beneficiaries of Baajna block started small scale industry of cloth printing

2.1.10 Linkage mechanisms

Swanson (2006) proposed a new national extension strategy consisting of elements like shifting to high value crops or enterprises, becoming market driven, building social capital and moving to a decentralized extension structure. It was suggested that the strategy for agricultural development must be based on improving the real incomes and the quality of life of farming community.

Rathore *et al* (2008) in their study of analysis of research-extension-farmer linkage in arid zone of India found that majority of scientists (77.77 %) were engaged in REF linkage work for last 5-15 years. It was also reported that large proportion of scientists (92.85 %) were having liaison with state department of agriculture and the research institutes functioning in the zone. It was revealed that 70 percent of extension personnel were rendering technical help to farmers during field visits and through campaign.

Reddy *et.al.* (2006) reported that when the Project Directors were from University, the Research-Extension-Farmer linkages were better when compared to other options of having Project Directors from line departments.

Birner *et al* (2009) in their study of developing framework for analyzing pluralistic agricultural advisory services defined agricultural extension or agricultural advisory services, as the entire set of organizations that support people engaged in agricultural production and facilitate their efforts to solve problems; link to market and other players in the agricultural value chain and obtain information, skill and technologies to improve their livelihood.

Report of AP State Govt on ATMA activities (2009) given that due to linkage mechanisms promotion of use of treated effluent water of paper mills for irrigation purpose , Soya based food industries were developed in Adilabad district,solar drying and powdering of vegetables was taken up in Rangareddy district.

Ponnuswamy *et.al* (2012) in an article Market linkages for women farmers reported that the Poultry Association Commodity Interest Groups of farmers were linked and networked by ATMA with a buy back arrangement of maize at fixed price in Chittoor district of Andhra Pradesh. Farmers Interet Group promoted by ATMA ,Patna entered into contract for production of Basmati rice with M/s Aditya Agro-clinic and Agro Business center, Mungeer a basmathi rice exporter. In the same lines promotion of

production of snow pea under ATMA through buy back arrangement with M/s Pamer Agro ventures (P) Ltd by supplying seed and other inputs and agronomical practices to FIG exported the snow pea and realised highly remunerative prices.

2.1.11 Coordination

World Bank (2005) evaluated ATMA as highly satisfactory, with regard to rationalization and reorientation of public extension services, the ATMA and SREP proved to be a remarkably effective institutional and process mechanism for ensuring decentralization, inter-departmental coordination and demand/user focus by bringing together the district administration, line departments, local farmer representatives and NGOs.

Gupta (2008) observed that Agro Eco Situation teams of ATMA helped the farmers in improving their knowledge about new varieties, pest control measures domestic/international marketing facilities for agricultural commodities, diversified farming in hilly areas of Jammu & Kashmir State.

Ankaiaha Kumar et.al (2009) reported that poor coordination existed between the stake holders in planning ,organizing and execution of ATMA activities in the Chittoor district due to too many scheme/targets/works in regular departments .

Since inception of the scheme in 2005-06 to January 2011, Over 1,40,97,347 farmers including 34,54,312 farm women (24.50%) have participated in farmer oriented activities like exposure visits, trainings, demonstrations & kisan melas, more than 64,343 Commodity based Farmer Interest Groups (CIGs) have so far been mobilized under the scheme and over 20,602 Farm Schools have been set-up on the fields of outstanding farmers(Ministry of Agri., 2011).

2.1.12 Economic motivation

Veerendranath (2000) stated that majority(38.33%) of them had medium economic motivation and the rest of them 32.78% and 28.89%had high and low economic orientation respectively.

Santhi Nirmala et al. (2011) in study on level of awareness about Rytu Chaitnaya Yatra programme and its effect on the farmers in Andhra Pradesh reported that majority of the participant farmers of RCY were having medium economic motivation (68.30%) followed by low economic motivation (18.30%)

2.2 Attitude of extension functionaries/ farmers towards extension reforms

Meti and Sunderswamy (1998) stated that majority of the farmers had favourable attitude towards improved farm impliments.

Kumar et.al. (1999) inferred that majority of the farmers were neutral or undecided in their attitude towards the agro-forestry programme.

Prasad and Sundaraswamy (2000) found that 36.67 per cent of the respondents belonged to less favourable category followed by 34.33 per cent belonged to more favourable category A significant percentage of respondents (29.00%) belonged to favourable category.

Ramamurthy (2000) indicated that majority of beneficiaries (72.50%) had favourable attitude followed by 11.67 per cent with more favourable attitude and 15.83 per cent with less favourable attitude towards Janmabhoomi programme.

Kappala (2002) observed that majority of the farmers (52.00%) had favourable attitude towards sustainable agriculture, followed by more favourable attitude (27.50 percent) and less favourable attitude (20.50%).

Reddy et al .(2001) indicated that most of the farmers (37.50%) had negative attitude followed by positive (31.63%) and neutral (30.83%) attitude towards dry land agricultural technology.

Lakshmana (2003) concluded that majority of respondents (65.66%) had favourable attitude and 3.33 per cent had highly unfavourable attitude towards ITKs and their blending with modern technologies.

Obaiah (2004) observed that majority of the trained farmers had moderately favourable attitude (55.72%) followed by 31 per cent each less and more favourable attitude towards IPM in rice.

Krishnamurthy et al. (2005) revealed that 43 per cent farmers had more favourable attitude followed by less favourable attitude (29%) and favourable attitude (28%) towards IPM practices in rice.

Patel et.al. (2007) indicated that majority of the farmers had medium favourable attitude towards IPM strategy followed by 30 per cent low and 15 per cent high favourable attitude towards IPM strategy

Nasib Singh and Singh (2008) in a study on Attitude of Extension Personnel towards ATMA model reported that majority(81.66%) of the extension personnel had a favourable attitude towards new institutional arrangements. About 60-70% of respondents showed favourable attitude regarding broad-based extension delivery in line with farming systems approach, convergence of line departments, group approach to extension, mobilizing farm women and multi agency extension approach. Unfavourable attitude 48% towards the dimension that of responsible towards selection of Project Director from line departments having additional charge and 44%as neutral attitude towards the dimension sustainability of extension services through beneficiaries' contributions.

Sumit Chandra (2010) reported in a study on impact of different trainings conducted under ATMA programme in three blocks of Madhya Pradesh that the new approach had created attitude among the farmers that Government approach is to take whole community together, which showed shift in approach of extension department from client farmer to group focussed approach.

Srinivasulu (2011) revealed that majority of FFS farmers (58.33%) had moderately favourable attitude followed by 23.33 percent high and 17.77 percent less favourable attitude.

Ram Jiyawan et al.(2012) in a study on farmers attitude and constraints in privatization of Agricultural Extension Services concluded that majority of the selected farmers had favourable attitude towards PAES (67%) followed by most favourable attitude (20%) and least favourable attitude (13%).

2.3 Crop and enterprise intensification & Crop and enterprise diversification promoted through extension reforms

2.3.1 Crop and enterprise intensification

Indian Institute of Management, Lucknow (2004) evaluated the performance of ATMA and found that in project districts during 1999 to 2003 area under horticulture increased from 12 to 16 percent, area under oilseed increased from 3 to 11 per cent, area under herbs, medicinal and aromatic crops increased from 1 to 5 per cent and area under cereals (wheat and rice) declined from 55 to 47 percent. The success of ITD-Component of NATP was the basis for launching extension reforms in 252 districts covering all the states during Tenth Five-Year Plan.

Anderson, Feder and Ganguly (2006) in their study of shortcomings of extension system in India revealed that due to large number of schemes and programmes coming from center and state, extension staff also tend to perform public duties not related to extension such as election or census duties. Further, monitoring and evaluation of staff is top-down with no role of farmers, so there is lack of accountability to farmers and a lack of incentives for staff.

Swanson (2006) proposed a new national extension strategy consisting of elements like shifting to high value crops or enterprises, becoming market driven, building social capital and moving to a decentralized extension structure. It was suggested that the strategy for agricultural development must be based on improving the real incomes and the quality of life of farming community.

Singh (2006) studied impact assessment of U.P. Diversified Agriculture Support Project (UPDASP) and reported that cropping intensity had increased from 169 to 200. Area under non-food grains had increased by 27 per cent. However, decline in the area under cereals had been compensated by increase in the yield. The area under horticulture had increased by 22 per cent.

Gupta (2008) stated that in an interview with a farmer of Pazalpora village, Bijbhara in district Anantanag introduction of new high yielding rice variety through AES team of ATMA and also helped in controlling location specific problem on pomogranate in Dandi village, Bhadewah in district Doda.

Report of AP State Govt on ATMA activities (2009) given that under crop intensification with the introduction of new grape varieties (Sharad and Sona Sharad) in Adilabad, Jowar crop by cultivation of Hurda Jowar, introduction of American sweet corn, medicinal plant Aswagandha in Kurnool had increased the crop area.

Ponnuswamy et.al (2012) in an article Market linkages for women farmers reported that quality maize seed, poultry manure supplied through ATMA maize area in chittoor district expanded from 60 ha to 1,150 ha. Farmers Interet Groups promoted by ATMA, Patna entered into contract for production of Basmati rice with M/s Aditya Agro-clinic and Agro Business center, Mungeer a basmati rice exporter. In the same lines promotion of Snow pea under ATMA

Sumit Chandra (2010) reported that due to interventions of ATMA in three blocks of Madhya Pradesh new varieties of wheat, soyabean, onion, garlic,

intercropping in cotton with chillies / lady's finger and short height crops like onion, garlic etc in papaya and grapevine orchards were promoted.

2.3.2 Crop Diversification

Singh and Swanson (2006) reported that the medicinal and aromatic plants cultivation under ATMA in Patna district which started with growing Vinca Rosa by five Farmers Interest Groups in 2000 had spread to a network of 50 FIGs who were pursuing medicinal and aromatic plants cultivation.

Singh (2006) studied impact assessment of U.P. Diversified Agriculture Support Project (UPDASP) and reported that 17 percent of sample farmers had shifted their area from food grain crops to vegetables and other cash crops

Report of AP State Govt on ATMA activities (2009) given that under crop diversification ATMA had promoted replacing of dry land crops such as Ground nut with castor in Kadapa district and with cluster bean in Chittoor district and preceding crops of green gram, black gram and soya bean in Kurnool district.

Ponnuswamy et.al (2012) in an article Market linkages for women farmers reported that quality maize seed, poultry manure supplied through ATMA maize area in Chittoor district expanded from 60 ha to 1,150 ha with an average income of Rs22,000/ha resulting into crop diversification.

2.4 Convergence of programmes in extension reforms

Lenin et. al. (2009) in his study on decision making by the farmers in Agricultural Technology Management Agency reported that the farmer was not a member of the committee which prepared SREP/BAP, farmers did not monitor the progress of the activities in the field and farmers did not evaluate the performance of an activity.

2.5 Association of Attitude and Convergence of programmes with the profile of respondents and process implementation of extension reforms

1. Attitude

Attitude Vs Age

Ramprasad (2004) concluded that age had positively significant relationship with attitude level of farmers.

Sreenivasulu (2011) indicated that age had negatively significant relationship with attitude of farmers

Attitude Vs Education

Chandra et al (2000) inferred that there was no significant association between education and attitude of farmers towards watershed development practices.

Prasad and Sundaraswamy (2000) indicated that there was a positively significant association between education and attitude of farmers towards dryland agricultural technologies.

Ramamurthy(2000) reported that there was a negatively significant relationship between education and attitude of farmers.

Obaiah (2004) reported that there was positive and significant relationship between education and attitude of FFS farmers towards IPM in rice.

Sreenivasulu (2011) indicated that education had positively significant relationship with attitude of farmers towards cotton ICM

Attitude Vs Farm size

Chandra et al (2000) inferred that there was negatively significant association between land holding and attitude of farmers towards watershed development practices.

Ramamurthy (2000) reported that there was a positive significant relationship between farm size and attitude of farmers.

Achyuta Raju (2002) concluded that farm size had positively significant relationship with attitude of farmers towards sustainable agricultural practices.

Ramprasad (2004) stated that farm size had positively significant relationship with attitude of farmers.

Sreenivaasulu (2011) indicated that farm size had positively significant relationship with attitude of farmers towards cotton ICM

Attitude Vs Extension contact

Chandra et al (2000) inferred that there was positively significant association between extension participation and attitude of farmers towards watershed development practices.

Prasad and Sundaraswamy (2000) indicated that there was positively significant association between extension participation and attitude of farmers towards dryland agricultural technologies.

Ramamurthy(2000) reported that there was a negatively significant relationship between extension participation and attitude of farmers.

Obaiah (2004) reported that there was a non significant relationship between extension contact and attitude of FFS farmers towards IPM in rice.

Sreenivaasulu (2011) indicated that extension contact had positively significant relationship with attitude of farmers towards cotton ICM

Attitude Vs Risk orientation

Chandra et al (2000) inferred that risk orientation had positively significant relationship with attitude of farmers towards watershed development practices.

Prasad and Sundaraswamy (2000) indicated that there was positively significant association between risk orientation and attitude of farmers towards dry land agricultural technologies.

Achyuta Raju (2002) concluded that risk orientation had positively significant relationship with attitude of farmers towards sustainable agricultural practices

Sreenivaasulu (2011) indicated that risk orientation had positively significant relationship with attitude of farmers towards cotton ICM

2.6 Constraints and suggestions

2.6.1 Constraints

Sulaiman and Sadamate (2000) reported that many new institutions (private and public) that had emerged during the last two decades were found to be providing

support to farmers. However, their concentration of manpower and expenditure in specific crops and regions were affecting their effective outreach to the masse.

Feder, Willet and Zijp (2001) defined poor extension performance condition which included the scale and complexity of agricultural production, dependence on the broader policy environment, weak linkages between extension and research system, difficulty in attributing impact, weak accountability, weak political commitment and support and difficulties with fiscal sustainability.

Reddy *et al.* (2004) reported that lack of coordination among line department, lack of awareness among farmers about SREP, heavy workload on BTT, lack of clear guidelines for implementation, and frequent transfers and changes of personnel of ATMA and BTT were the major constraints in effective implementation of SREP.

World Bank (2006) reported that although India had achieved food security, 20 percent of the population still suffered from malnutrition and there was a growing realization that hunger was a money problem and not a food problem.

Anderson, Feder and Ganguly (2006) in their study of shortcomings of extension system in India revealed that due to large number of schemes and programmes coming from center and state, extension staff also tend to perform public duties not related to extension such as election or census duties. Further, monitoring and evaluation of staff is top-down with no role of farmers, so there is lack of accountability to farmers and a lack of incentives for staff.

Working Group on Agricultural Extension (2007) pointed out that various components of public sector extension system suffered from duplication of programs without convergence. While ATMA is pushed as platform through which the multiple agencies can converge, the implementation difficulties are proving too great for effective integration, with shortage of both fund and personnel.

Ravi Nayak (2009) in a study on the Agricultural Technology Management Agency in Prakasam dt of AP reported that majority of the rice farmers in ATMA programme expressed that in case of seeds, lack of knowledge about improved seed (45.83%), was the major problem. With regard to fertilizers, high cost of fertilizers (66.66%) was the major problem. With reference to the pesticides and equipments, high cost of its parts and fuel of sprayers (67.50%) was the major problem. Regarding irrigation and equipments was high cost of its parts and fuel of oil engine (50.00%), In

case of extension contact, major problems expressed by the ATMA farmers were Non-availability of A.O/A.E.O (24.16%) and Lack of agricultural training programmes (20.00%).

Goswami (2010) reported in a study on impact of different trainings conducted under ATMA programme in three blocks of Madhya Pradesh that the major constraint expressed by the farmers was sometimes the techniques and varieties suggested by the scientists were old and low yielders.

Ankaiaha Kumar et.al (2011) in an article on constraints faced by stakeholders in implementation of Agricultural Technology Management Agency programme reported that the major constraints expressed by the extension functionaries were too many schemes/targets/works in regular departments as well as in ATMA resulted in no time for review (80.00%) therefore poor coordination exists between stakeholders in planning, organising and execution of ATMA activities in the district followed by too many vacancies (70.83%), No advance guidelines or communication in advance from Project Director of ATMA for preparation of block action plans and favouritism in budget allocation to their own departments first by block level technology team officers next to other developmental departments requirements (60.83%), no planning in fixing targets according to the specific farming situation needs of the district, lack of transport facilities at BTT level (58.33%), delayed release of budget (51.66%), poor prioritisation of activities from project directors office and less demonstrations on farming systems research at block/village level, no trainings were organised to stakeholders in connection with improved/latest technologies in agriculture and allied sectors, no exposure visits were organised to stakeholders to successful ATMA districts and poor farmers accountability (32.50%).

Thus, according to the review mentioned above, the major bottlenecks in implementation of agricultural development programmes were non availability of quality inputs seed, pesticides, fertilizer etc, weak linkage between different line departments at block level, lack of transport facilities to remote areas, lack of training to farmers, lack of financial resources etc.

2.6.2 Suggestions

Riar and Rajinder (2007) in a study on impact of farmers interest groups on the awareness of members about the programmes and activities of different development departments suggested the ATMA management to pay attention on a

sizeable number of group members who remained unaware even after their association with farmer interest groups.

Gupta (2008) suggested to promote market led extension and also diversified farming in hilly areas which leads to broad-based extension system.

Ravi Nayak (2010) in a study on the Agricultural Technology Management Agency in Prakasam dt of AP reported that majority of the rice farmers in ATMA programme suggested that supply of quality inputs like seed, fertilizer and pesticides (87.50%) as the first suggestion followed by improvement of irrigation facilities (66.66%), provision of credit facilities in proper time (64.16), provision of good marketing facilities to sell the produce for reasonable prices (60.00%), provision of inputs and equipments on subsidy basis (51.66%), timely technical guidance (43.33%), provision of loan at lower interest (38.33%), provision of more agricultural training programmes (25.00%) and regular visit of A.O's as inspectors need to be increased to check up the adulteration of fertilizers and pesticides (20.83%).

Goswami (2010) reported in a study on impact of different trainings conducted under ATMA programme in three blocks of Madhya Pradesh that the communication capabilities of Para extension workers/ Jankaras to be improved.

Ankaiaha Kumar et.al (2011) in an article on constraints faced by stakeholders in implementation of Agricultural Technology Management Agency programme reported that the major suggestions given by the extension functionaries were create separate chairman position to ATMA programme (81.66%), Project Director preferably from Group I officer cadre (76.66%), bridge the technical gaps through training to fulfil the prime objective of diversify into high value crops and livestock enterprises in the district (74.16%), plan early before season starts (65.00%), filling up of vacancy positions (65.00%), BTT team in charge only with ADA cadre (61.66%), Too many programmes under different schemes/project (59.16%), transport facilities (59.16%), in charge for appropriate position (52.50%) and simplifying the excess bureaucracy (38.33%),

This review indicates that after the failure of T&V system due to financial unsustainably, agricultural extension moved towards a demand driven, farmer oriented, multi-agency and group approach with involvement of all concerned stakeholders which

provides extension services including public, private sector and NGOs. Further, the extent of participation of beneficiaries in planning and implementation of agricultural development programmes was found to be low to medium. In this scenario, ATMA emerged as a successful extension model when tested on a pilot basis. Although, it was observed that many of the studies indicated a fair success of ATMA model in India, problems are still there regarding its proper implementation. Some of these are lack of awareness about SREP among farmers, heavy workload on agriculture department staff at block level, lack of transport facilities to visit remote villages, frequent changes and transfer of staff etc. Hence, it is essential to find out the effectiveness of the Strategic Research and Extension Plan which forms the backbone of ATMA, in terms of the facilitating and hindering factors.

2.7 Hypothesis of the study

General hypothesis : There will be positive and significant relationship between profile characters and process implementation of extension reforms.

Null hypothesis : There will be no positive and significant relationship between profile characters and process implementation of extension reforms.



MATERIALS AND METHODS

CHAPTER - III

MATERIALS AND METHODS

This chapter deals with the methodology adopted for the present study. It includes the research design, locale of the study, sampling procedures, empirical measurement of the variables, procedure followed in development of Attitude scale. The materials and methods used in this study have been described under the following heads.

3.1. Locale of the study.

3.2. Selection of respondents for the study.

3.3. Selection of the variables for the study and their empirical measurement

3.4. Methods and tools used in data collection.

3.5. Statistical procedures used in analysis of data.

3.1.1 Locale of the study

The state of Andhra Pradesh was selected for the study. Among the 24 districts in AP four districts namely Adilabad, Kurnool, Chittoor and Prakasam districts were purposively selected in which the extension reforms (ATMA) were pilot tested (1998-2005) and are being in operation.

3.1.2 Sampling procedure

An Ex Post Facto research design with random sampling procedure was adopted and employed during the course of investigation. It is a systematic empirical enquiry in which the scientist doesn't have any direct control of independent variables because their manifestations have already occurred or because they inherently are not manipulable (Kerlinger,1983). Inferences about relations among variables are made, without direct intervention from concomitant variation of independent and dependent variables.

3.1.3 Selection of Blocks / Mandals

Four blocks from each district were randomly selected thus making a total of sixteen blocks. The details of selected blocks were given district wise here under.

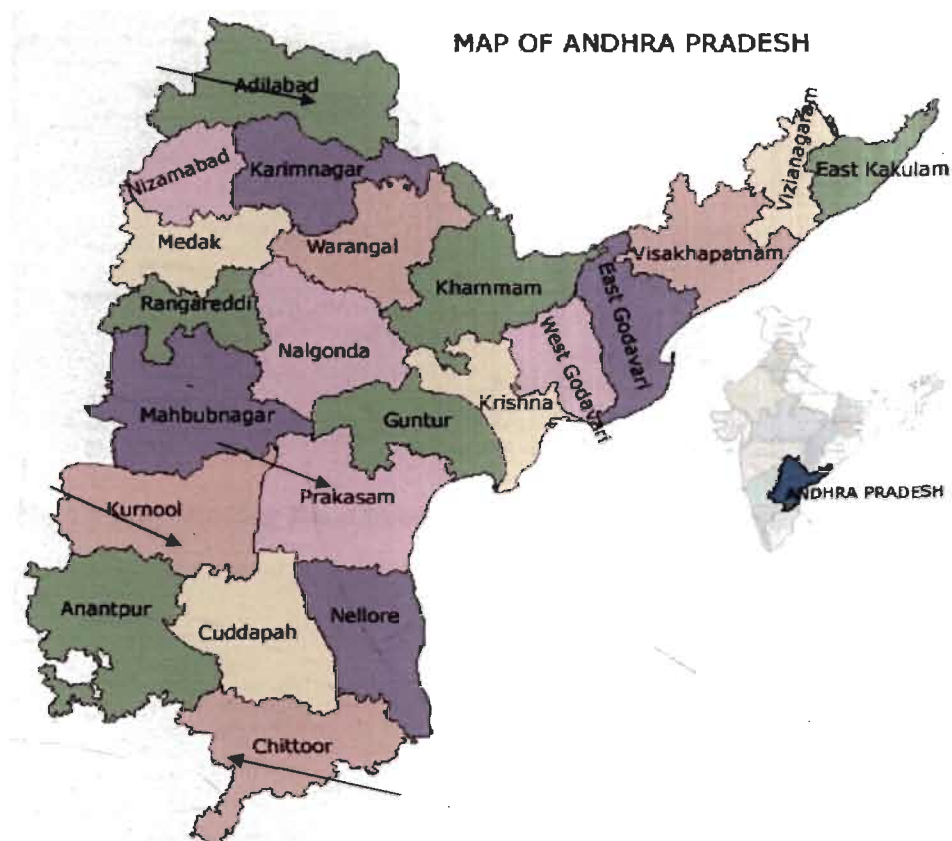


Fig.3.1 Map showing the selected districts in Andhra Pradesh

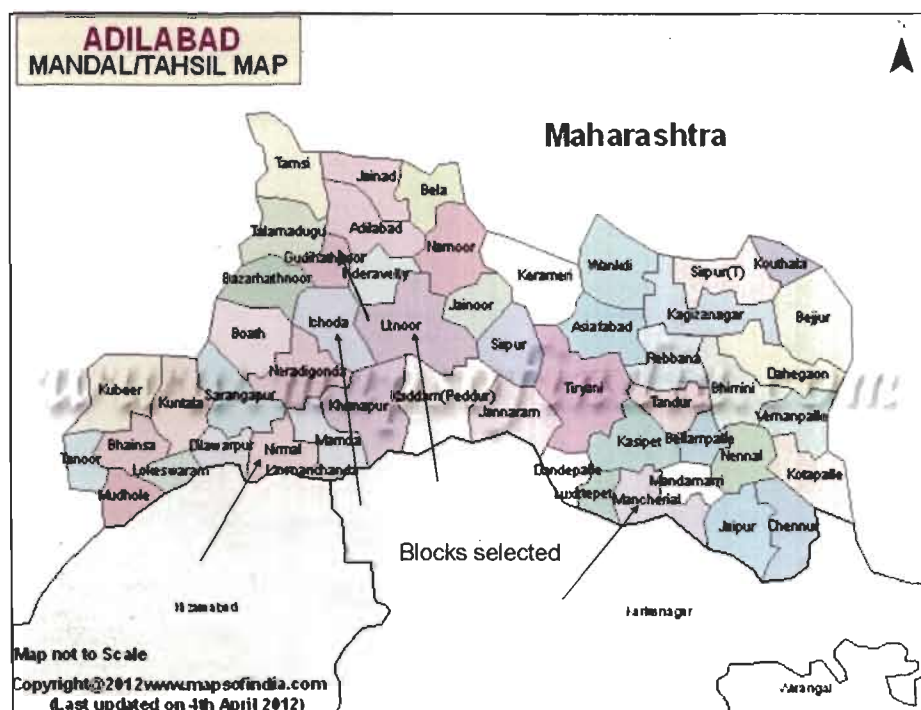


Fig.3.2 Map showing the selected blocks in Adilabad District

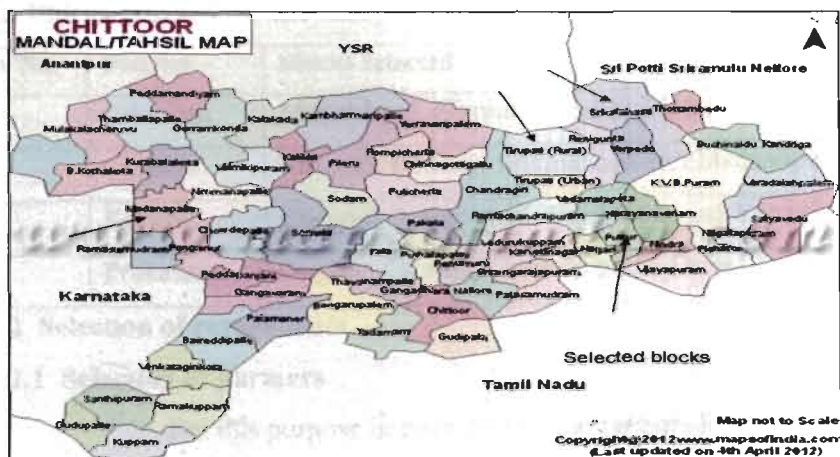


Fig.3.3 Map showing the selected blocks in Chittoor District

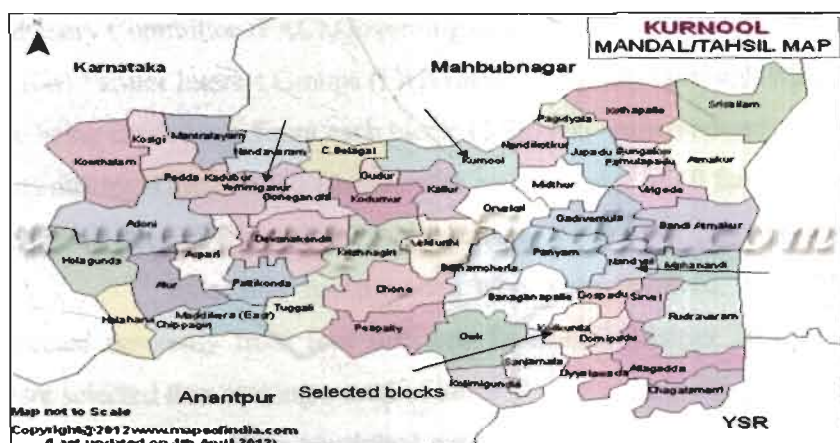


Fig.3.4 Map showing the selected blocks in Kurnool District

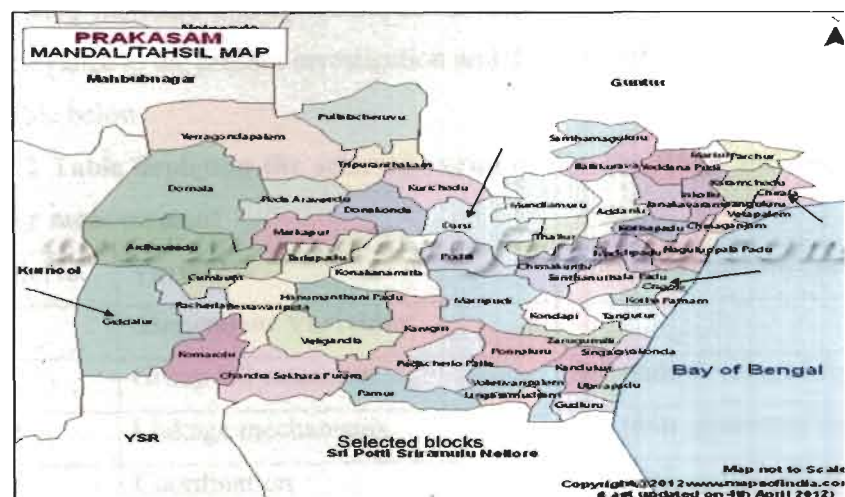


Fig.3.5 Map showing the selected blocks in Prakasam District

3.1 Blocks selected for the study

Sl. No.	District	Blocks selected
1	Adilabad	Manchiryal, Nirmal, Ichod and Utnoor
2	Chittoor	Tirupati, Puttoor, Srikalahasti and Madanapalli
3	Kurnool	Kurnool, Nandyal, Kovelakuntla and Yammiganuru
4	Prakasam	Ongole, Chirala, Giddaluru and Darsi

3.2 Selection of respondents

3.2.1 Selection of Farmers

For this purpose in each district the farmers lists of ATMA members and beneficiaries were obtained from the department of agriculture. From these lists 60 farmers from each district who were the members of different bodies such as Farmer Advisory Committee (FAC),Governing board(GB), Commodity Interest groups (CIGs),Farmer Interest Groups (FIGs) and other groups through which ATMA activities are being carried out. From each block 15 farmers were randomly selected for the study thus making a total of 240 farmers with a sample size of 60 farmers from each district.

3.2.2 Selection of Extension Functionaries

Extension functionaries who were involved in ATMA activities were selected randomly from four districts. From each district 20 extension functionaries were selected thus making a total of 80.

3.3 Variables and their empirical measurement

The variables for the study had been selected based on the review of related literature and by consultation with experts. The selected variables which had relevance to the present investigation and their empirical measurement were given in the table below.

3.2 Table depicting the selected variables for the study and the instruments used for measurement

Sl. No.	Variables	Empirical measurement
	Dependent Variables	
1	Group led extension	Schedule developed for the study
2	Linkage mechanisms	Schedule developed for the study
3	Coordination	Schedule developed for the study
4	Bottom up planning	Schedule developed for the study
5	Farmer to farmer extension (Farmer Field school)	Schedule developed for the study

Sl. No.	Variables	Empirical measurement
6	Decision making	Index developed by Venkatramaiaha (1991) with suitable modifications
7	Capacity building	Schedule developed for the study
8	Women participation	Schedule developed for the study
9	Attitude	Scale developed for the study
10	Convergence	Schedule developed for the study
11	Crop and enterprise intensification	Schedule developed for the study
12	Crop and enterprise diversification	Schedule developed for the study
	Independent variables	
13	Profile of respondents	SES developed by Venkatramaiaha (1990) with suitable modifications
14	Extension contacts	Schedule developed for the study
15	Social participation	SES developed by Venkatramaiaha (1990) with suitable modifications
16	Risk orientation	Scale developed by Supe (1969) with suitable modifications
17	Economic motivation	Scale developed by Supe (1969) with suitable modifications

3.3.1 Dependent variables

3.3.1.1 Group led extension

Group led extension was operationalised as providing extension services through Farmer Interest Groups (FIGs) and Self Help Groups (SHGs) in terms of formation of groups promoting group activities and spread of information through groups.

A schedule was developed for the study, ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. The spread of information on various activities was measured by grouping as 5-10 with a score of 1, 10-15 members with a score of 2 and 15 and above members a score of 3 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 83 and minimum score was 37. Based on total

score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
High level of grouped extension	Above Mean+ SD
Medium level of group led extension	Between Mean±SD
Low level of group led extension	Below Mean - SD

3.3.1.2 Linkage mechanisms

Linkage mechanisms was operationalised as research extension farmer linkage based activities such as farmer scientist interaction meetings at local level, organization of field days, kisan ghostis addressing of FSB needs and promoting public private partnership in ATMA activities.

A schedule was developed for the study ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 16 and minimum score was 8.

Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
Strong linkage mechanisms	Above Mean+ SD
Moderate linkage mechanisms	Between Mean± SD
Weak linkage mechanisms	Below Mean - SD

3.3.1.3 Coordination

For the purpose of this study the concept of coordination between departments has been operationalised as a mutual working relationship developed between stake holders of ATMA so as to bring about harmonious and joint action to carry out the activities of planning organising and execution of extension reforms.

A schedule was developed for the study. The scoring pattern followed was ‘yes’ or ‘no’ type of questions were posed and a score of two was given for positive response and score of 1 was given for negative response. The maximum score obtained was 12 and minimum score was 6.

A total score of respondent was obtained by summing up the scores of individual items. Based on the total score of respondents duly following the usual procedure of mean and standard deviation they were categorized as given below.

Category	Score Range
Strong coordination	Above Mean+ SD
Moderate coordination	Between Mean $\pm$ SD
Poor coordination	Below Mean - SD

3.3.1.4 Farmer to farmer extension

One of the most important extension approaches for farmer to farmer extension was farm school. It was operationalised as the transfer of technologies to farmers through farmer's field schools.

Farm school procedures were obtained through 'yes' or 'no' type questions. The scoring pattern followed was a score of two was given for positive response and score of 1 was given for negative response. The maximum score obtained was 12 and minimum score was 6.

The total score of respondent was obtained by summing up the scores of individual items. Based on the total score of respondents, duly following the usual procedure of mean and standard deviation they were categorized as given below.

Category	Score Range
High level of farmer to farmer extension	Above Mean+ SD
Medium level of farmer to farmer extension	Between Mean $\pm$ SD
Low level of farmer to farmer extension	Below Mean - SD

3.3.1.5 Bottom up planning

It was operationalised as involving farmers groups/input agencies/NGOs and all the line departments in the planning process. The information was obtained through focussed group discussions.

3.3.1.6 Decision making

Decision making is the degree to which an individual justifies his selection of the most efficient means from /among the available alternatives on the basis of scientific criteria for achieving maximum economic profits.

For the present study it has been operationalised as the flexibility in decision making in farm operations and also in planning, implementing of the programmes related to ATMA along with farm oriented activities.

A schedule was developed for the study. To measure decisions making a set of activities were listed against which how they were taking decisions was measured with the options either independently, jointly with family members and after consulting with others.

The scoring procedure followed was for decision making independently, jointly with family members and after consulting with others with the scores of 1, 2 and 3 were assigned. In planning and implementation of action plans in consultation with co members, officers and individually with scores of 3, 2 and 1. A total score of respondents was obtained by summing up the scores of individual items. Based on the total score of respondents, mean and standard deviation they were grouped as follows.

Category	Score Range
High level of decision making	Above Mean+ SD
Medium level of decision making	Between Mean± SD
Low level of decision making	Below Mean - SD

In addition to these the decentralised decision making process in ATMA were also captured through focussed group discussions.

3.3.2.7 Women participation:

The variable was operationalized as mobilising farm women into groups, capacity building and their participation in ATMA activities.

A schedule was developed for the study, ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 26 and minimum score was 13. Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
High level of participation	Above Mean+ SD
Medium level of participation	Between Mean± SD
Low level of participation	Below Mean - SD

3.3.1.8 Capacity building

It was operationalised as an improvement in competencies of extension workers/farmers through participation in field days, demonstrations, group discussions, exposure visits, and study tours, inter district and intra district tours and undergoing training programmes.

A schedule was developed for the study, ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained for participation in programmes was 14 and minimum score was 7. For trainings the maximum score was 16 and minimum score was 8. Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
High level of capacity building	Above Mean+ SD
Medium level of capacity building	Between Mean± SD
Low level of capacity building	Below Mean - SD

3.3.1.9 Attitude

In social research, attitude of a person or a group towards any psychological object is of paramount importance. The success or failure of many a social reforms or technology would mainly depend upon the peoples attitude towards it. The difference in attitude has been the cause of quite a large number of disorganising factors disturbing the behavioural complex of the people towards a particular social phenomenon.

For the present study attitude was operationalised as the degree of positive or negative effect associated with the farmers and extension functionaries towards extension reforms.

Construction and standardisation of Attitude scale

Methodology: For the present study Likert (1932) and Edwards Summated Rating Scale was followed in the construction of attitude scale. In the final scale, 28 statements consisting of both positive and negative were included.

Reasons for using Likert’s Summated Rating Scale:

1. This scale has a higher reliability coefficient than other scales..It had shown that more satisfactory reliability coefficients could be obtained when each item in a Thurnstone type of scale was assigned five alternative choices and the points were checked in all the items to obtain a total score. Hall (1934) indicated that the Likert type scale with even fewer statements will give high reliability coefficients.
2. One can get more information regarding the selected items when this scale is used than Turnstone scale. It is simpler and easier than equal appearing interval scale. Likert (1932) and Hall (1934) have made such claims.

3. It saves time and labour for its construction because there is no need to rank the items as in the case of Thurston’s scale. This was supported by Rundquist and Slette (1936) no judges are required to rank the items as in the case of Thurstones scale
4. The internal consistency and reliability of Likert scale could be quickly used by using the scale with a new group. Non-discriminating items could be eliminated and scores could easily be calculated from the remaining items. New items could also be added and tested with ease.

Collection of statements: Statements covering all aspects of process implementation of extension reforms were collected with the help of available literature, consultation with the experts in the area of extension reforms. As such a tentative list of 90 statements, representing the attitude towards extension reforms was collected.

Editing the statements: The statements were then edited according to the criterion given by Edwards (1957). Out of 90 statements , 50 statements which satisfied the criterion were selected.

Selection of items: The draft scale of 50 statements was then administered to a group of 30 respondents. The respondents were then asked to indicate their degree of agreement or disagreement with each statement on a five point continuum, ranging from strongly agree to strongly disagree. The scores for the positive and negative statements were assigned as given below.

Response	Positive Statements	Negative statements
Strongly Agree	5	1
Agree	4	2
Undecided	3	3
Disagree	2	4
Strongly Disagree	1	5

Calculation of ‘t’ value

For each farmer’s response, the total score was obtained by summing the scores for the individual items. The subjects were then arranged in an array of descending order based on the total score obtained by them. The top 25 per cent of the subjects with highest score (high group) and 25 per cent of the subjects with lowest score (low group) were used as criterion groups.

To evaluate individual statement, the critical ratio i.e. t value which is a measurement.of the extent to which a given statement differentiates between the high

and low group of respondents for each statement was calculated by using the formula suggested by Edwards (1957)

Selection of attitude statements for final scale

After computing the “t” value for all the items (Appendix-iii) 28 statements comprising of 14 positive and 14 negative statements with highest t value equal to or greater than 1.75 were finally selected and were included in the attitude scale.

Validity

Validity of a scale is the property that ensures that the obtained scale measures the variables it is supposed to measure. The validity of the scale was tested using Content Validity.

The present scale was examined for the content validity by determining how well the content of the scale represented the subject matter under study. As all the possible items covering the universe of content were selected by discussing with experts and from all the available literature on the subject, the scale satisfied the content validity.

Reliability: A scale was reliable only when it gives consistently the same results when applied to the same sample. The reliability of the scale was found out by using Test and Re-test method. The scale was administered to the fresh group of 30 respondents (excluding sample area). After a period of 15 days the scale was again administered to the same respondents and thus two sets of scores were obtained. The correlation coefficient for both the sets was worked out. The correlation coefficient was found to be 0.88 which was significant at 0.01 level of probability indicating that the constructed attitude scale was highly suitable for administration.

Administration of attitude scale

The final attitude scale constructed by following all required norms and it was administered to the respondents of the sample area. Each statement was read out to the

respondents by the investigator and the response to each statement in terms of their own degree of agreement or disagreement was noted down in the proper column with tick mark. Based on the responses, total score of respondent was obtained by summing up the scores of individual attitude statements. The maximum score and minimum scores of respondents was 140 and 28.

The respondents were grouped into three categories based on scores obtained by each of them duly following the usual procedure of mean and standard deviation as given below.

Category	Score Range
Highly favorable attitude	Above Mean+ SD
Favorable attitude	Between Mean± SD
Unfavorable attitude	Below Mean – SD

3.3.1.10 Convergence

Convergence was operationalised as all partners of line departments coming together to work on programmes and operations in gap filling mode by formulating Strategic Research Extension Plan (SREP), Annual work plans and addressing the prioritised problems.

To measure the convergence, schedule was developed for the study, ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 30 and minimum score was 15 Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below

Category	Score Range
Strong	Above Mean+ SD
Moderate	Between Mean ±SD
Weak	Below Mean – SD

3.3.1.11 Crop and Enterprise intensification

This variable had been operationalised as the improved technologies adopted in existing crops or enterprises or new varieties of crops introduced into the system. A schedule was developed for the study ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 12 and minimum score was 6 Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
High level of crop & enterprise intensification	Above Mean+ SD
Medium level of crop & enterprise intensification	Between Mean+ SD
Low level of crop & enterprise intensification	Below Mean – SD

3.3.1.12 Crop and Enterprise diversification

Crop and enterprise diversification was operationalised as the new enterprises or cropping systems undertaken by the farmers along with farming. A schedule was developed for the study, ‘yes’ or ‘no’ type questions were posed to the respondents. The scoring procedure followed was per each positive response score of 2 was given and negative response a score of 1 was given. Total score of each respondent was obtained by summing up the scores of the individual items. The maximum score obtained was 10 and minimum score was 5 Based on total score duly following the usual procedure of mean and standard deviation the respondents were grouped into three categories as given below.

Category	Score Range
High level of crop & enterprise diversification	Above Mean+ SD
Medium level of crop & enterprise diversification	Between Mean+ SD
Low level of crop & enterprise diversification	Below Mean- SD

3.3.2 Independent variables

3.3.2.1 Age

Age of the respondents was operationalised as the number of completed years at the time of enquiry. For computing the respondents age the norms of maximum

admissible age (35years) for the members of youth club as young age and the super anuating age (58 years) for retirement as old age as per the guidelines of government. The respondents were later grouped as follows.

Category	Score Range
Young age	Below 35 years
Middle age	35-58 years
Old age	Above 58 years

These categories were expressed in terms of frequencies and percentages at the time of presentation of results.

3.3.2.2 Education

Education refers to the formal educational level of the respondents. Educational qualification of a respondent was operationalised as the extent of formal education an individual possessed. The minimum and maximum score was 1 and 6 respectively.

The scoring was done on the basis of Socio-Economic Status (SES) scale developed by Venkatramaiaha (1990) with suitable modifications. The respondents were categorized as given below.

Sl.no.	Educational category	Score
1.	Illiterate / no schooling	1
2.	Functionally literate	2
3.	Primary school	3
4.	High school	4
5.	Intermediate	5
6.	Graduation	6

These categories were expressed in terms of frequencies and percentages at the time of presentation of results.

3.3.2.3 Farm size

Farm size was operationalised as number of standard acres of land possessed by one respondent at the time of investigation. The irrigated and un irrigated dry land possessed

by the respondent was taken into consideration for computing farm size. Score of one was given to each standard acre. The categories were considered in tune with the rationale for selection of respondents in accordance with land ceiling act.

.(* As per the Section 8 ,Sub section(1) of the AP land reforms (ceiling on Agricultural holding) Act No. of 1973 the section 8 (i) B read as follows—“ ... and for the purpose of computing the specified unit in case where holding of any person includes both wetland and dry land 1 acre of wet land shall be deemed to be equal to 2.5 acres of dry land”.The respondents were classified according to the extent of land holding into four categories based on the number of acres they possessed.

Category	Land holding size
Marginal farmers	up to 2.5 acs
Small farmers	2.5-5 acs
Medium farmers	5 -10acs
Big farmers	above 10 acs

These categories were expressed in terms of frequencies and percentages at the time of presentation of results.

3.3.2.4 Extension contact

Extension contact for the present study was operationalised as the degree of respondents contact with extension agents to get information on agriculture and allied aspects, contacts within the group members , participation in extension programmes and referring to literature developed under extension reforms (ATMA) This was measured by the frequency of respondents contact with various extension agents i.e. officers and members of groups, participation in extension activities and utilisation of information materials/sources .The respondents were asked to check the sources they utilised.

A schedule was developed for the study .For extension contacts the scoring procedure followed was weekly, fortnightly, monthly and whenever need arises;for these the scores of 4, 3, 2 and 1 were assigned respectively. For the information sources the scoring procedure followed was regularly, occasionally and rarely with the scores of 3, 2 and 1. For extension participation the scoring procedure followed was regularly, occasionally and never with scores of 3, 2 and 1. Total score of respondent was obtained by summing up the individual scores of extension contacts, information sources and

extension participation. Based on the total score of respondents duly considering mean and standard deviation they were grouped as follows

Category	Score Range
High level of extension contact	Above Mean+ SD
Medium level of extension contact	Between Mean±SD
Low level of extension contact	Below Mean – SD

3.3.2.5 Social participation

The social participation was operationally defined as the extent of involvement of the respondent in any formal organization in their community. The social participation was measured in terms of the membership of the individual in the organization as well as frequency of participation in the meetings.

A schedule was developed for the study. The scoring procedure followed was for membership a score of one was given and for participation in meetings regularly, sometimes and never with scores of 3, 2 and 1. Total score of respondent was obtained by summing up the individual scores of membership and participation in meetings. Based on the total score of respondents duly considering mean and standard deviation they were grouped as follows

Category	Score Range
High level of social participation	Above Mean+ SD
Medium level of social participation	Between Mean± SD
Low level of social participation	Below Mean – SD

3.3.2.6 Risk orientation

Risk orientation was operationalised as the degree to which the respondent was oriented towards risk and uncertainty in adopting new ideas in farming. Risk orientation was measured with the help of the scale developed by Supe (1969) with suitable modifications.

The scale consists of 8 statements out of which four statements were negative. The responses for each statement were rated on three point continuum which ranged from agree, undecided and disagree with scores of 3, 2, 1 for positive items and 1, 2, 3 for negative items.

Categorization:

The possible minimum and maximum scores of each respondent were 8, 24 respectively. The final score for risk orientation was arrived at by summing up all the corresponding response scores. Then the respondents were grouped into three categories based on mean and standard deviation.

S.No	Category	Score range
1	Low risk orientation	< Mean – S.D
2	Medium risk orientation	between Mean $\pm$ S.D
3	High risk orientation	> Mean + S.D

3.3.2.7 Economic motivation

It was operationalised as the degree to which a farmer is oriented towards profit maximization in farming and the relative value placed by the farmer on economic ends. It was measured with the help of the scale developed by Supe (1969) with suitable modifications.

The scale consists of 8 statements out of which four statements were negative. The responses for each statement were rated on three point continuum which ranged from Agree, Undecided and Disagree with scores of 3, 2, 1 for positive items and 1, 2, 3 for negative items.

Categorization:

The possible minimum and maximum scores of each respondent were 8, 24 respectively. The final score for risk orientation was arrived at by summing up all the corresponding response scores. Then the respondents were grouped into three categories based on mean and standard deviation.

S.No	Category	Score range
1	Low economic motivation	< Mean – S.D
2	Medium economic motivation	between Mean $\pm$ S.D
3	High economic motivation	> Mean + S.D

3.3.2.8 Process implementation of extension reforms

It was operationalised as the implementation of procedures and delivery mechanisms based on the guidelines of ATMA. For the present purpose the different

processes were measured through the variables such as convergence, crop and enterprise intensification, diversification, capacity building, decision making, group led extension, linkage mechanisms, women participation, coordination, farmer to farmer extension and bottom up planning.

3.4 Instruments used for collection of data

A well structured interview schedule was the instrument used for data collection. Keeping in view the specific objectives, based on relevant literature, discussion with researchers, extension specialists and field extension personnel, a structured interview schedule was developed. Along with interview schedule focussed group discussions with the stake holders were organised for obtaining information pertaining to certain processes of extension reforms.

An interview schedule was designed with three parts. Part I included all the independent variables and general information, items related to all the dependent variables and constraints faced by ATMA farmers and suggestions for effective implementation. Part II included attitude statements.

3.4.1 Pre-Testing of the Schedule

Prior to administering the interview schedule to the respondents, it was pre-tested in non sample area. During pre-testing care was taken in selection of respondents for getting the required information.

Based on the experience gained in pre-testing, appropriate changes were made duly avoiding ambiguous and irrelevant items. The final format of the interview schedule was enclosed in the (Appendix-i, ii)

3.4.2 Establishment of Rapport

Establishment of rapport with respondents was a very important task in data collection of any research study. The investigator herself interacted with the respondents of ATMA which made her easy to get acquainted with them. They were convinced about the purpose and importance of the study and it was made clear that the investigation was purely academic in nature and needs factual information.

3.4.3 Method of Data Collection

After establishing good rapport, each of the selected respondent was personally interviewed with the help of structured comprehensive interview schedule (Appendix- i for farmers and Appendix- ii for extension functionaries)

3.4.4 Preparation of Report

After obtaining the data, that data was coded, analyzed, tabulated and presented in the form of report and presented in tables to make findings meaningful and easily understandable. The findings emerged out of the data were suitably interpreted and necessary conclusions and inferences were drawn.

3.5 STATISTICAL METHODS USED

Statistical method is the scientific method of judging collective natural or social phenomena from the results obtained by the analysis of enumerated or collected estimates (Siegel, 1956).

For the purpose of statistical analysis of the coded data to fulfil the set objectives, the following statistical tools were used:

1. Arithmetic mean ($\bar{X}$)
2. Standard deviation (σ)
3. Frequency and percentage
4. Pearson's correlation coefficient (r)

3.5.1 Arithmetic Mean ($\bar{X}$)

It was defined as the sum of all the observations divided by the total number of observations. It was used in categorization of respondents on both dependent and independent variables. Symbolically it was represented as $\bar{X}$.

$$\text{Arithmetic mean } (\bar{X}) = \frac{\sum xi}{n} = \frac{x_1 + x_2 + \dots + x_n}{n}$$

Where, $\bar{X}$ = Arithmetic mean

X_i = Values of i^{th} item of $\bar{X}$

$\sum x$ = sum of each individual item

$i = 1, 2, 3, \dots, n$

n = Total number of respondents

3.5.2 Standard Deviation (σ)

It is used to find out the variation in the score in the variables and for categorization of respondents. Symbolically it was represented as σ .

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{1}{n} \left[\sum x^2 - \frac{(\sum x)^2}{n} \right]}$$

Where, σ = Standard deviation

$\sum x^2$ = Sum of squares of observations

$[\sum x]^2$ = Square of grand total

n = Number of observations

3.5.3 Frequency and Percentage

Frequency was used to know the pattern of the respondents according to the objectives under study. Percentage was used for standardization by calculating the number of individuals that would be under the given category, if the total number of individuals were 240.

For calculating percentages, the frequency of a particular cell was multiplied by 100 and divided by the total number of respondents pertaining to that particular cell.

3.5.4 Pearson's Correlation Co-efficient (r)

When two variables are related in such a way that a change in one variable is accompanied by a corresponding change in other variable is called correlation coefficient.

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left[\sum x^2 - \frac{(\sum x)^2}{n} \right] \left[\sum y^2 - \frac{(\sum y)^2}{n} \right]}}$$

Where r = Correlation coefficient

$\sum x$ = sum of scores of independent variables

$\sum y$ = sum of scores of dependent variables

$\sum X^2$ = sum of the squares of scores of independent variables

$\sum y^2$ = sum of the squares of scores of dependent variables

$\sum x \sum y$ = sum of productivity of x and y

n = size of the sample

The 'r' calculated value was verified for its significance to use r table value for 5% and 1% level of significance at $(n-2)$ degree of freedom. When the 'r' calculated

value was equal or greater than the table value, the relationship between the selected variables was considered significant otherwise it was considered non-significant.

3.6. Hypotheses of the study

Null hypothesis: There will be no significant relationship between profile characters of respondents and process implementation of extension reforms.

Empirical hypothesis: There will be significant relationship between profile characters of respondents and process implementation of extension reforms.

Empirical hypothesis1: There will be significant relationship between profile characters of respondents and decentralised decision making ability. in process implementation of extension reforms

Null hypothesis 1: There will be no significant relationship between profile characters of respondents and decentralised decision making ability in process implementation of extension reforms

Empirical hypothesis 2 : There will be significant relationship between profile characters of respondents and capacity building in process implementation of extension reforms.

Null hypothesis 2: There will be no significant relationship between profile characters of respondents and capacity building in process implementation of extension reforms.

Empirical hypothesis 3: There will be significant relationship between profile characters of respondents and group led extension in process implementation of extension reforms

Null hypothesis 3: There will be no significant relationship between profile characters of respondents and group led extension in process implementation of extension reforms

Empirical hypothesis 4: There will be significant relationship between profile characters of respondents and convergence in process implementation of extension reforms.

Null hypothesis 4: There will be no significant relationship between profile characters of respondents and convergence in process implementation of extension reforms.

Empirical hypothesis 5: There will be significant relationship between profile characters of respondents and linkage mechanisms in process implementation of extension reforms.

Null hypothesis 5: There will be no significant relationship between profile characters of respondents and linkage mechanisms in process implementation of extension reforms

Empirical hypothesis 6: There will be significant relationship between profile characters of respondents and coordination in process implementation of extension reforms.

Null hypothesis 6: There will be no significant relationship between profile characters of respondents and coordination in process implementation of extension reforms

Empirical hypothesis 7 : There will be significant relationship between profile characters of respondents and attitude in process implementation of extension reforms.

Null hypothesis 7 : There will be no significant relationship between profile characters of respondents and attitude in process implementation of extension reforms

A decorative border consisting of a repeating pattern of palm trees with green fronds and brown trunks, arranged in a rectangular frame around the central text.

RESULTS AND DISCUSSION

Chapter IV

RESULTS AND DISCUSSION

In this chapter, as per the objectives of the study the factual data denoting emperical evidence through research has been analyzed by using relevant statistical tests and the findings thus arrived were presented in order to draw suitable conclusions. The findings and discussion of the study were presented under the following sub heads.

- 4.1 Selected Profile Characteristics of the sample respondents
- 4.2 Attitude of farmers and extension functionaries towards extension reforms.
- 4.3 The extent of crop diversification and intensification by the farmers
- 4.4.The extent of convergence and linkage mechanisms in implementation of activities in gap filling mode.
- 4.5 The functioning of group led extension and the extent of decentralised decision making
- 4.6.Relationship between the profile of respondents and extent of process implementation of reforms through ATMA
- 4.7.Constraints and solutions for effective functioning of ATMA
- 4.8.Innovative activities undertaken in ATMA
- 4.9.Process implementation of ATMA in the district

4.1 Selected profile characteristics of the sample respondents

4.1.1 Age

Table 4.1. Distribution of respondents according to their Age
(n= 60 for each district)

S.No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	Young age	8	13.33	3	5.00	30	50	11	18.33	52	21.67
2	Middle age	52	86.67	57	95.00	29	48.33	47	78.33	185	77.08
3	Old age	-	-	-	-	1	1.67	2	3.33	3	1.25

It could be observed from the Table 4.1 that in Chittoor district majority of the ATMA respondents were middle aged (86.67%) followed by young age (13.33%). In Adilabad district majority were middle aged (95.00%) followed by young age (5.00%) and in both of the districts none of them were old aged . In case of Kurnool district half of the respondents were young aged followed by middle aged group (48.33%) and

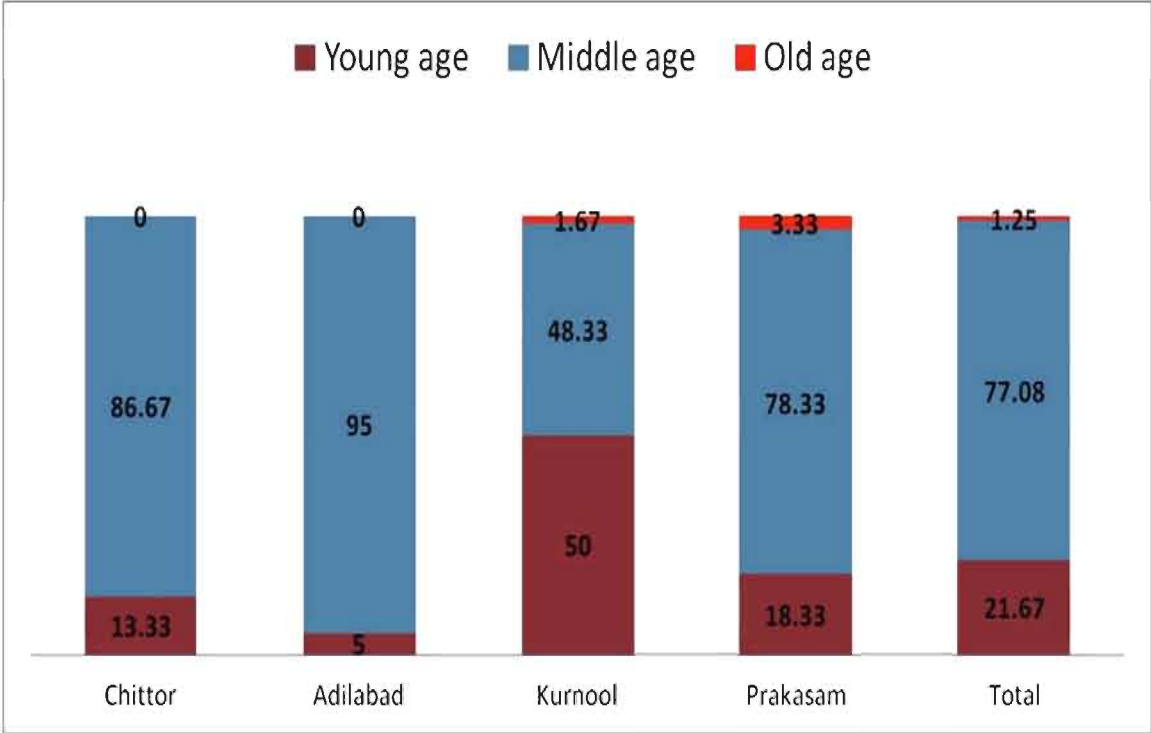


Fig.4.1 Distribution of respondents according to age

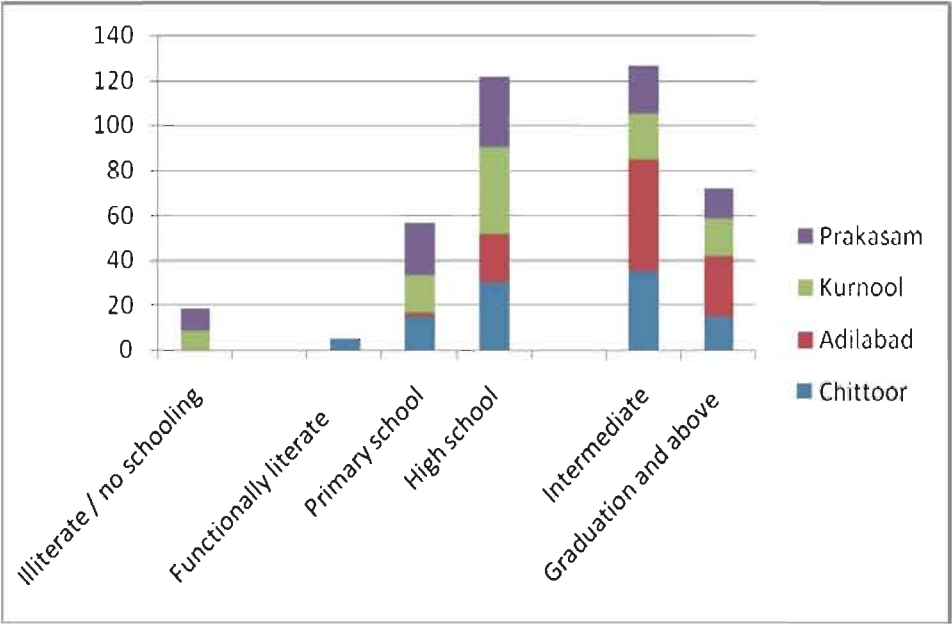


Fig.4.2 Distribution of respondents according to education

old aged group (1.67%). Where as in Prakasam district majority of the ATMA respondents were middle aged (78.33%) followed by young aged group (18.33%) old aged group (3.33%). On the whole the total sample of respondents (77.08%) belonged to middle aged group followed by young aged group (21.67%) and old aged respondents (1.25%).

The reasons for the above result might be that most of the developmental programmes attract middle aged people only. As such ATMA extension reform also concentrated middle aged groups only, as the beneficiaries have to be involved in various activities. In addition to this the young aged people were opting for more remunerative enterprises other than agriculture.

The results were in line with the findings of Murthy (2000), Madhavalatha (2002), Ravichandra Prasad (2002), Obaiah (2004) and Srinivasulu (2011) who reported that beneficiaries of the various programmes were middle aged followed by young and old aged

4.1.2 Education

Table 4.2. Distribution of respondents according to their Education

(n= 60 for each district)											
S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	F	%	f	%
1.	Illiterate / no schooling	-	-	-	-	5	8.33	6	10.00	11	4.58
2.	Functionally literate	3	5.00	-	-	-	-	-	-	3	1.25
3.	Primary school	9	15.00	1	1.67	10	16.67	19	31.67	39	16.25
4.	High school	18	30.00	13	21.67	23	38.33	14	23.33	68	28.33
5.	Intermediate	21	35.0	30	50.00	12	20.00	8	13.33	71	29.58
6.	Graduation and above	9	15.00	16	26.66	10	16.67	13	21.67	48	20.00

It was evident from the table 4.2 that majority (35.00%) of the ATMA respondents of Chittoor district had intermediate education followed by high school education (30.00%) while equal percentage of respondents (15.00 %) had primary school education and graduation and above where as 5.00 per cent belonged to functionally literate group. In Adilabad district, half of the ATMA respondents had intermediate education(50.00%) followed by graduation and above (26.66%) and high school education (21.67%).In case of Kurnool district, majority of the respondents (38.33%) belonged to high school education category followed by intermediate education (20.00%) while equal percent (16.67%) belonged to graduation and above and primary school education categories respectively. Similarly, in case of Prakasam district majority of the respondents had primary school education (31.67 %) followed by high school education (23.33%) and graduation and above education (21.67%). In the total sample of respondents majority had intermediate education (29.58%), followed by

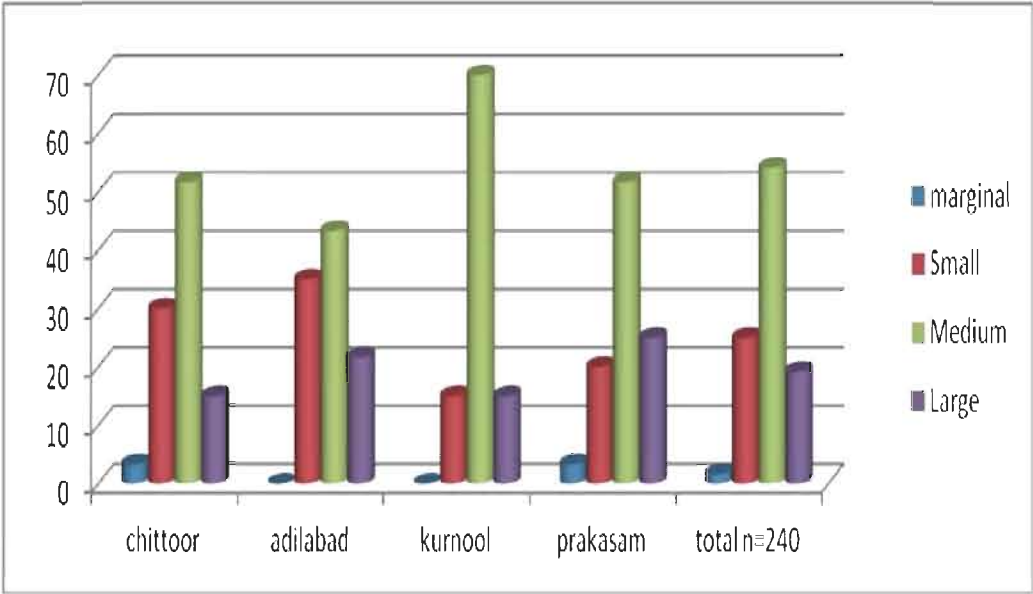


Fig.4.3 Distribution of respondents according to farm size

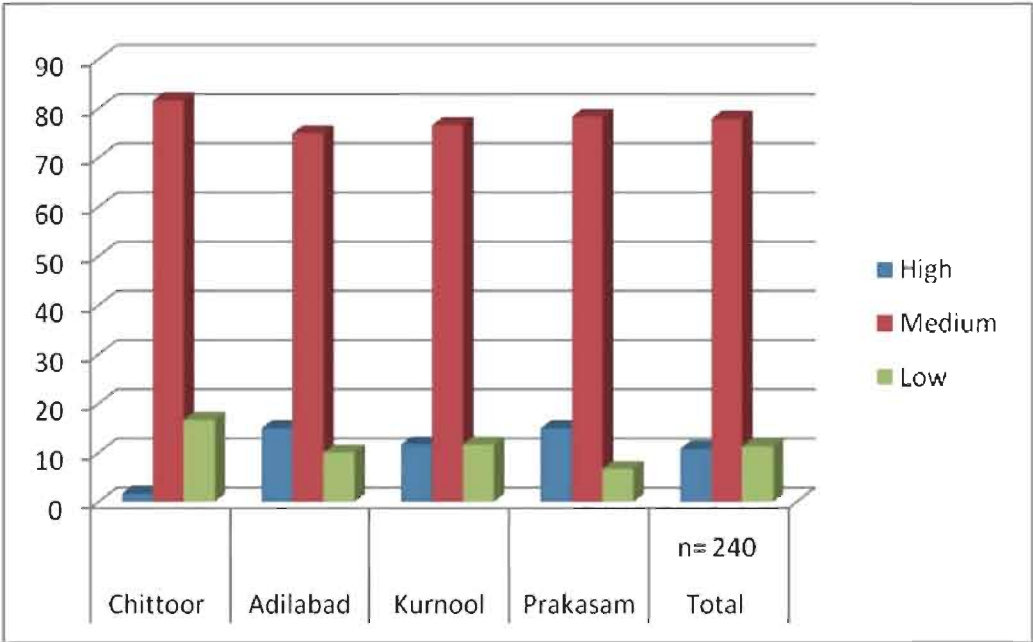


Fig.4.4 Distribution of respondents according to Extension contacts

high school education (28.33%), graduation and above education (20.00%) and primary school education (16.25%) while 4.5 per cent were illiterate, a meagre percentage (1.25%) were functionally literate .

The results showed that majority had intermediate education (29.58%), followed by high school (28.33%) education. This might be due to the fact that now a days the government is giving preference for those who had minimum high school education while selecting the beneficiaries for the programmes like Adarsha Rytus. Since majority of the respondents belonged to middle and young age groups, they might had a chance to study up to high school and intermediate education. This may be due to better opportunities available to the medium farmers compared to small farmers both in terms of financial position and time available at their disposal. In general, for the past decade the literacy levels of villagers were increased due to various literacy programmes implemented by the government. The results were in line with the findings of Madhavilatha (2002), Nagabhushanam (2003), Natarajan(2004),Vanetha(2005) and Srinivaasulu (2011) who reported that beneficiaries of the various programmes had high school education followed by Intermediate education, as most of the guidelines of the developmental programmes indicated that the beneficiaries must have minimum high school education in order to make programmes successful as the intellectual levels play major role in planning and implementing the programmes.

4.1.3 Farm size

Table 4.3. Distribution of respondents according to their Farm size

(n= 60 for each district)											
S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	F	%	f	%	f	%	f	%
1	Marginal	2	3.33	-	-	-	-	2	3.33	4	1.66
2	Small	18	30.00	21	35.00	9	15.00	12	20.00	60	25.00
3	Medium	31	51.67	26	43.33	42	70.00	31	51.67	130	54.17
4	Large	9	15.00	13	21.67	9	15.00	15	25.00	46	19.17

The results in the table 4.3 indicated that fifty one per cent of the ATMA respondents in Chittoor district were medium farmers, thirty per cent were small farmers, fifteen per cent were large farmers and only three percent were marginal farmers category. In case of Adilabad district, majority (43.33%) belonged to medium farmers category followed by small (35.00%) and large farmer categories (21.67%).In Kurnool district, majority of the respondents (70.00%) belonged to medium farmer category, followed by equal percentage (15.00%) in small and large farmer categories. Similarly in Prakasam district, majority of the farmers (51.67%) were in medium category followed by large (25.00%) and small farmers (20.00%) categories. Majority of the

respondents of total sample belonged to medium farmer category (54.17%) followed by large farmer (25.00%), small farmer (19.17%) categories, while only 1.66 per cent were under marginal farmers category.

The results showed that more than half of the respondents were medium farmers followed by large and small farmers. The factors contributing for these findings might be due to the fact that more number of medium farmers might have shown interest towards ATMA activities, as the sample represented more percentage (64%) of medium farmers. The results were in line with the findings of Nadre (2000), Gattu (2001), Reddy(2003), Obaiah(2004), who reported that beneficiaries of the various programmes possessed medium land holdings followed by large and small holdings.

4.1.4 Extension contact

**Table4.4. Distribution of respondents according to their Extension contacts
(n= 60 for each district)**

S No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	High	1	1.66	9	15.00	7	11.67	9	15.00	26	10.83
2	Medium	49	81.67	45	75.00	46	76.66	47	78.33	187	77.92
3	Low	10	16.67	6	10.00	7	11.67	4	6.67	27	11.25
	Mean	62.27		45.72		42.68		42.72			
	SD	13.15		5.91		6.78		5.88			

A perusal of the results in the table 4.4 indicated that majority of the ATMA respondents of Chittoor district had medium extension contact (81.67%) followed by low extension contact (16.67%) and very meagre percentage (1.66%) high extension contact. In case of Adilabad district 75 per cent of the respondents had medium extension contact followed by high (15.00%) and low extension contact (10.00 %).Similarly, in case of Kurnool and Prakasam districts majority had medium extension contact (76.66% and 78.33% respectively) followed by high (11.67 % and 15.00% respectively) and low extension contact (11.67% and 6.67% respectively) . Majority of ATMA respondents of total sample had medium extension contacts (77.92%) followed by low extension contacts (11.25%) and 10.83 per cent had high extension contacts.

Major training areas covered by departments:

- S.No. **Major training areas**
- Agriculture**
1.

Integrated crop management
2.

Farm mechanization
3.

Advanced production technologies of various crops

S.No.	Major training areas
4.	Value addition in commercial crops
5.	Market linkages and networking
	Horticulture
1.	Post Harvesting & Value addition
2.	Orchard management
3.	Rejuvenation of Orchards
4.	Nursery management
	Fisheries
1.	Cooperative aqua farming
2.	Water quality management
3.	Quality fish production
4.	Ornamental fisheries
	Processing of products
	Animal Husbandry
1.	fodder Improved varieties
2.	Improved dairy management practices
3.	Artificial insemination
4.	Backyard poultry
	Sericulture
1.	Organic Silk production
2.	Sericulture farmers associations
3.	Mulberry production technology
4.	Silk worm rearing

The above table lists the major training areas covered under ATMA training. In the Agriculture sector, major focus was on integrated crop management organic farming, farm mechanization, advanced production technologies of various crops and value addition of commercial crops. In the horticulture sector, major emphasis was on orchard maintenance, nursery management, value addition and post harvest management. In animal husbandry, the trainings focused on improved fodder varieties, improved dairy management practices, artificial insemination and backyard poultry. In the sericulture sector farmers were mainly trained on organic Silk production, sericulture farmers associations, mulberry production technologies and silk worm rearing. In Fisheries, emphasis was on information of cooperative aqua farming quality fish production and processing of products

The results showed that more than three fourths of the respondents had medium level of extension contacts. The reasons might be the frequent and regular contacts with officers of department of agriculture, horticulture, animal husbandry and scientists of ANGRAU for getting updated technologies due to availability of various communication sources to the farmers having medium and large holdings. The respondents were acquiring latest information and skills through utilising information sources namely printed literature, news papers, television to a large extent and through recorded cassettes and input agencies in few cases in addition to informal sources. They were also participating regularly in study tours, farmer scientist interaction meetings and demonstrations. The participation was less and occasional in other activities such as meetings/seminars, workshops, group discussions and other meetings. It could be predicted that majority of the respondents who belonged to middle age group having intermediate and above education , possessing medium land holding of 6-10 acres, would be more interested in getting new information. Majority (33.83) of the farmers participated in the within the district followed by outside the district (9.14) exposure cum training programmes. None of the farmers participated in the exposure cum training programmes at the state level. It was noted that few farmers (2.71%) have participated in interstate training. These findings indicate that the majority of the farmers participated in the training programmes organized with in the district. The farmers must be encouraged to participate in the exposure cum training programmes at state level and out side the state to widen their vision towards quicker development. These findings were in line with the findings of Murthy (2000), Rajaratnam (2000), Padmavathi and Reddy (2002), Ravichandra Prasad (2002), Siva Subrahmanyam (2003), Obaiah (2004), Gopinath (2005) who reported that majority of the respondents were having medium extension contact.

4.1.5 Social participation

Table4. 5. Distribution of respondents according to their Social participation

(n= 60 for each district)											
S.No	Category	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	High	9	15.00	5	8.33	10	16.67	17	28.33	41	17.08
2	Medium	40	66.67	48	80.00	43	71.66	36	60.00	167	69.58
3	Low	11	18.33	7	11.67	7	11.67	7	11.67	32	13.33
	Mean	62.27		17.83		15.45		15.50			
	SD	13.15		5.66		5.69		3.58			

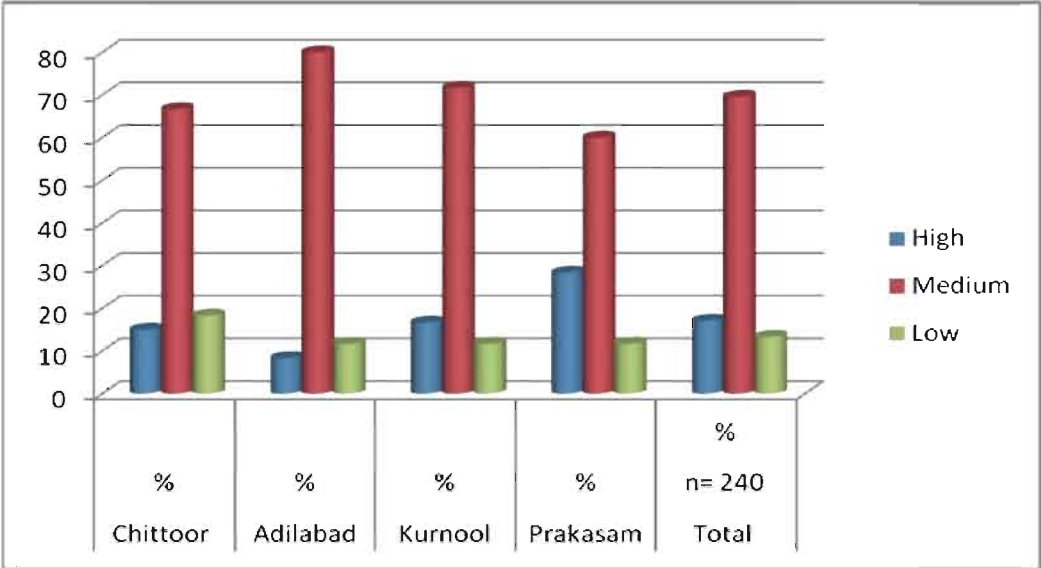


Fig.4.5 Distribution of respondents according to social participation

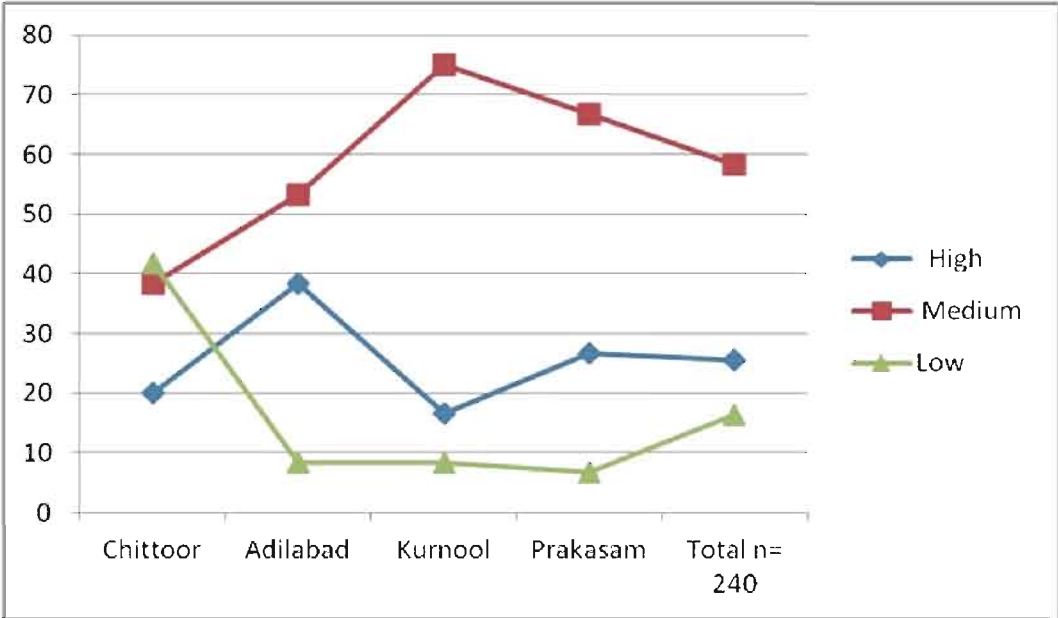


Fig.4.6 Distribution of respondents according to risk orientation

The results in the table 4.5 indicated that majority of the ATMA respondents of Chittoor district had medium social participation (66.67%) followed by low (18.33%) and high (15.00%) social participation. In case of Adilabad district 80 percent of the respondents had medium social participation followed by low (11.67%) and high (8.33%) social participation. Similarly in case of Kurnool, Prakasam districts majority of respondents (71.66% and 60.00%) had medium social participation followed by high (16.67% and 28.33% respectively) and equal percent had low social participation (11.67% and 13.33% respectively). In total 69.58 percent of sample of ATMA respondents had medium social participation followed by high (17.08%) and low (13.33%) social participation.

The results revealed that more than half of the respondents were having medium social participation followed by high social participation. The reason was that the respondents were having membership in more than one organization and were participating in the meetings of their groups and ATMA meetings regularly and in other meetings when ever time permits, contributing towards framing the resolutions. The another reason was that many of the government programmes encouraged farmers to form into groups as such ATMA programmes also encouraged the farmers to form into CIG/FIG which was represented in the sample. The other reason might be that in villages the organizations will be few in number and hence only those farmers who had extension contact and more education might have the opportunity to be members of those organizations, because, now a days maintaining of records at organization level is becoming mandatory.

4.1.6 Risk orientation

Table 4. 6. Distribution of respondents according to their Risk orientation

(n= 60 for each district)											
S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	F	%	f	%	f	%	f	%
1	High	12	20.00	23	38.33	10	16.67	16	26.67	61	25.42
2	Medium	23	38.33	32	53.33	45	75.00	40	66.67	140	58.33
3	Low	25	41.67	5	8.33	5	8.33	4	6.66	39	16.25
	Mean	19.30		19.58		15.55		16.65			
	SD	3.67		4.16		2.5		1.56			

The table 4.6 indicated that 41.67 percent of the ATMA respondents of Chittoor district had low risk orientation followed by medium risk orientation (38.33%) and high risk orientation (20%). In Adilabad district majority had medium risk orientation (53.33%) followed by high (38.33 %) and low (8.33%) risk orientation. Similarly in case of Kurnool district three fourths of the respondents had medium risk orientation

followed by high (16.67%) and low (8.33%) risk orientation. Where as, in Prakasam district majority had medium risk orientation (66.67%) followed by high (26.67%) and low risk orientation (6.66%). More than half of the total sample of ATMA respondents had medium (58.33%) risk orientation followed by high (25.42 %) and low (16.25%) risk orientation.

For any farmer who wants to reap windfall profits from new innovations, an element of risk is inevitable, as the technologies are fast becoming obsolete. Medium and big farmers to a certain extent have a bent of mind to with stand and not to succumb to the losses that occur while adopting new technologies when compared to small farmers.

The government also was launching more number of programmes for the benefit of farmers which involve some element of risk for profit maximization. The farmers with education, medium extension contact and social participation developed awareness about the facts and a bent of mind towards innovative activities. Sample respondents also adopted new crops, cropping systems, new farming methods and crop diversification that lead to more economic returns, though an element of risk was involved. These results were in confirmation with the findings of Usha Devi (2000), Padmavathi and Reddy (2002), Subrahmanyam (2002), Madhavilata (2002), Siva subrahmanyam (2003) , Sridevi (2003), Ramesh Babu and Venkataramaiah (2004) that majority were having medium risk orientation.

4.1.7 Economic motivation

Table 4.7. Distribution of respondents according to their Economic motivation
(n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	F	%	f	%	f	%	f	%
1	High	12	20.00	21	35.00	22	36.67	10	16.67	65	27.08
2	Medium	42	70.00	34	56.67	34	56.66	46	76.66	156	65.00
3	Low	6	10.00	5	8.33	4	6.67	4	6.67	19	7.92
	Mean	18.72		18.95		17.03		17.23			
	SD	3.31		4.23		1.90		2.88			

The table 4.7 projected that majority of the ATMA respondents of Chittoor district had medium economic motivation (70.00%) followed by high (20.00 %) and low (10.00%) economic motivation. In Adilabad district, more than half of the respondents had medium economic motivation (56.67%) followed by high (35.00 %) and low (8.33%) economic motivation. Similarly, in case of Kurnool district majority (56.66%) had medium economic motivation followed by high (36.67%) and low (6.67%) economic motivation. Whereas in Prakasam district, more than three fourths of

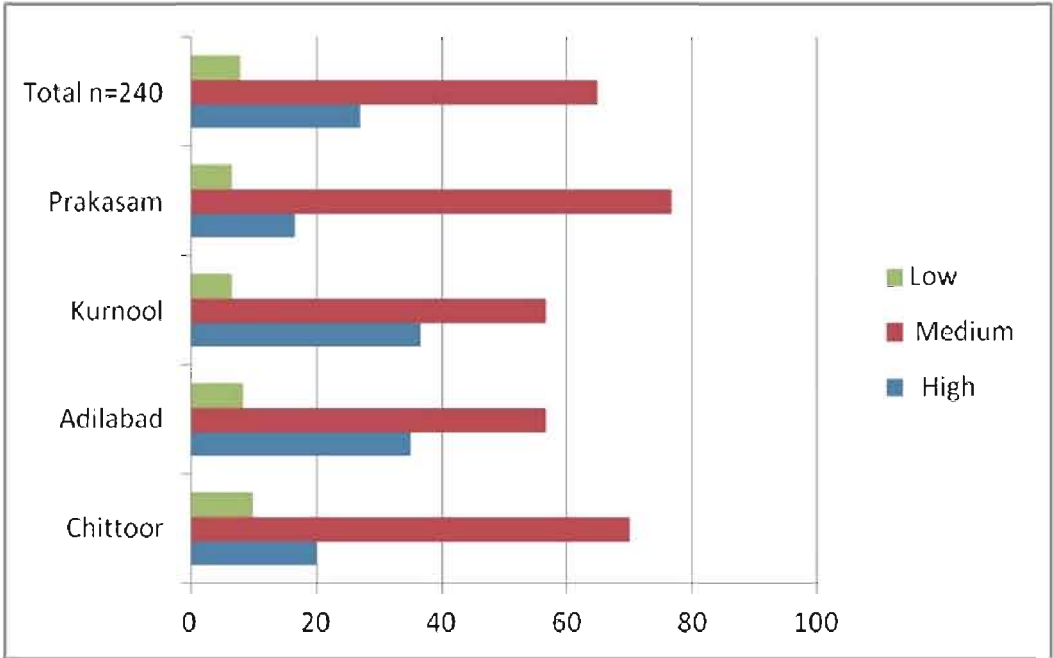


Fig.4.7 Distribution of respondents according to economic motivation

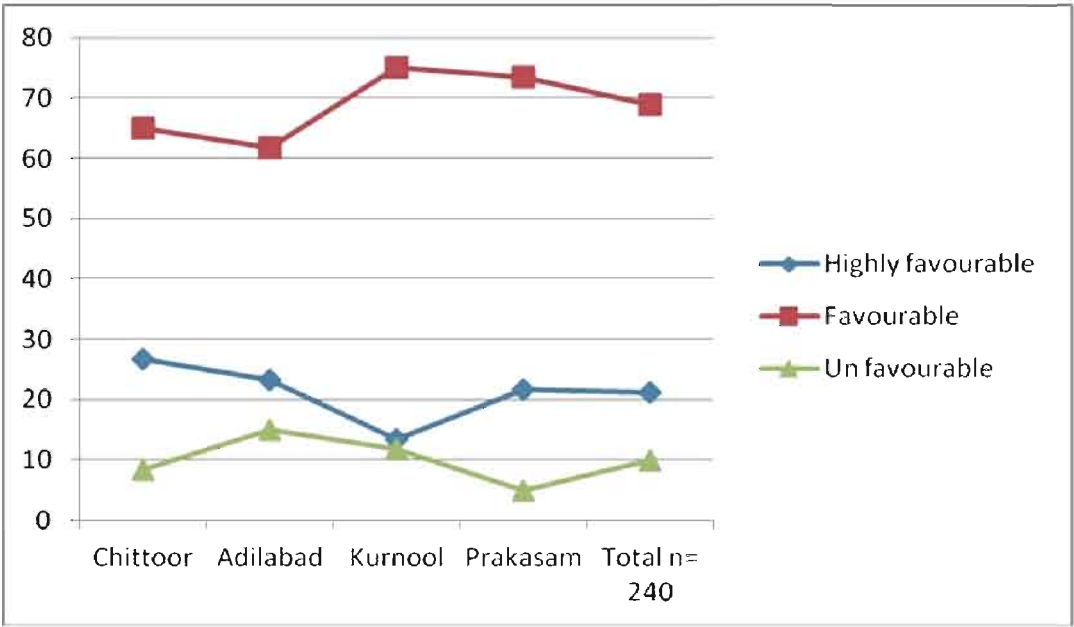


Fig.4.8 Distribution of respondents according to attitude of farmers

the respondents (76.66%) had medium economic motivation followed by high (16.67%) and low (6.66%) economic motivation. More than half (65.00%) of total sample of ATMA respondents had medium economic motivation followed by high (27.08%) economic motivation while only 7.92 per cent had low economic motivation.

The results revealed that farmers were having medium level of economic motivation, as being members of different groups, developmental programmes they got an opportunity to participate in meetings at various forums to attend demonstrations and to utilize information sources through which they recognized the importance of economic returns with less investment. These results were in confirmation with the findings of Usha Devi (2000), Padmavathi and Reddy (2002), Subrahmanyam (2002), Madhavalata (2002), Siva Subrahmanyam (2003), Sridevi (2003), Ramesh Babu and Venkataramaiah (2004) that majority were having medium economic motivation.

4.1.8 Profile characters of Extension Functionaries

Table 4.8. Distribution of respondents according to their Profile characters (n= 80)

SNo	Category	Age		Education		Experience	
		F	%	f	%	f	%
1.	Age						
	Young age	20	25.00				
	Middle age	60	75.00				
	Old age						
2.	Education						
	Graduation			34	42.50		
	Post graduation and above			46	57.50		
3.	Experience						
	<10 years					19	23.75
	11-20years					47	58.75
	> 20years					14	17.50

An insight into the table 4.8 revealed that majority of the extension functionaries of Chittoor, Adilabad, Kurnool and Prakasam districts had middle age (75.00%), Post graduation and above qualification (57.50%) and a service experience of 11-20years (58.75%).

From the results of the above table it is evident that the officers might had opportunity to upgrade their qualifications during their service based on experience and also the recruitments in the department of agriculture and line departments in the State were done based on merit and experience of the candidates.

4.2 Attitude of farmers and extension functionaries towards extension reforms.

Table4.9. Distribution of respondents according to their attitude towards extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	Highly favourable	16	26.67	14	23.33	8	13.33	13	21.67	51	21.25
2	Favourable	39	65.00	37	61.67	45	75.00	44	73.33	165	68.75
3	Un favourable	5	8.33	9	15.00	7	11.67	3	5.00	24	10.00
	Mean	85.88		84.10		81.87		84.20			
	SD	6.61		7.03		5.21		5.59			

A cursory glance of the table 4.9 indicated that more than half (65.00%) of the ATMA respondents of Chittoor district had favourable attitude followed by highly favourable attitude towards extension reforms (26.67 %) and unfavourable attitude (8.33%). In Adilabad district, majority had favourable attitude (61.67 %) towards extension reforms followed by highly favourable (23.33 %) and un favourable attitude (15.00%). Similarly in case of Kurnool district three fourths of the respondents(75.00%) had favourable attitude followed by highly favourable (13.33%) and un favourable attitude (11.67 %) towards extension reforms. Where as, in Prakasam district nearly 73.33 per cent had favourable attitude followed by highly favourable attitude (21.67 %) and a meager percentage (5.00%) with un favourable attitude towards extension reforms. Of the total sample of ATMA respondents, majority (68.75 %) had favourable attitude towards extension reforms followed by highly favourable attitude (21.25 %) and un favourable attitude (10.00%).

On the whole, the results indicated that majority of respondents were having favourable attitude towards extension reforms. The reasons for this trend were the medium level of social participation, extension contact and risk orientation of the farmers which created interest among the respondents to utilize the innovative programmes of the Government. The farmers were convinced with the benefits of new institutional arrangements, broad based extension services, multi agency extension approaches and incentives to the farmers in the form of rewards rendered through extension reforms. They were highly dissatisfied with the way of implementation of meetings, group approaches and other aspects. They were not willing to pay 10% contribution for sustainability of the programmes under extension reforms. The results were in confirmation with the findings of Ramamurthy (2000), Kappala (2002), Lakshmana (2003), Obaiah (2004), Nasib Singh and Singh RP (2008) and Srinivaasulu (2011)

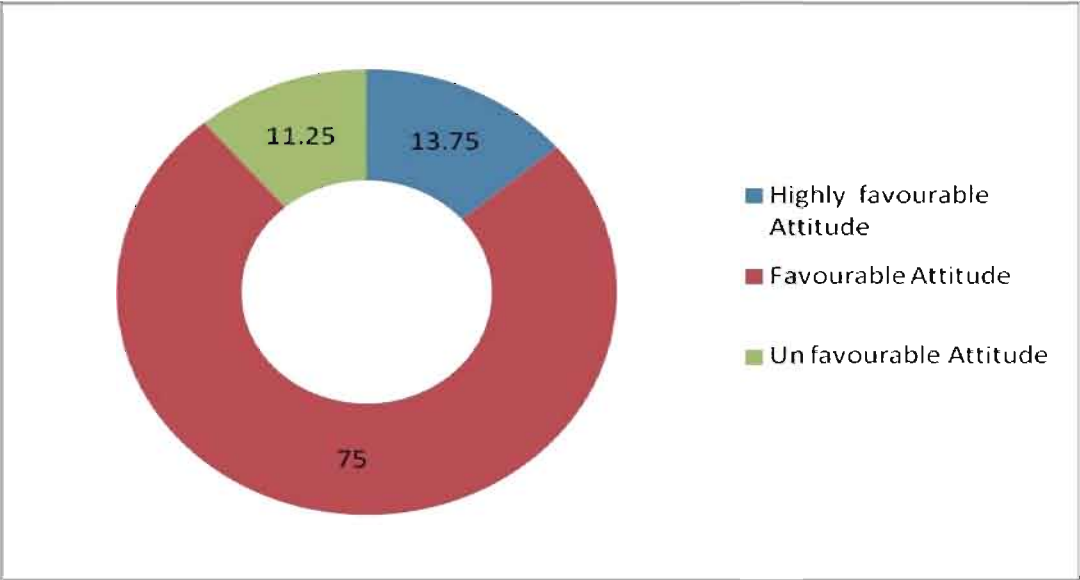


Fig.4.9 Distribution of respondents according to risk attitude of extension functionaries

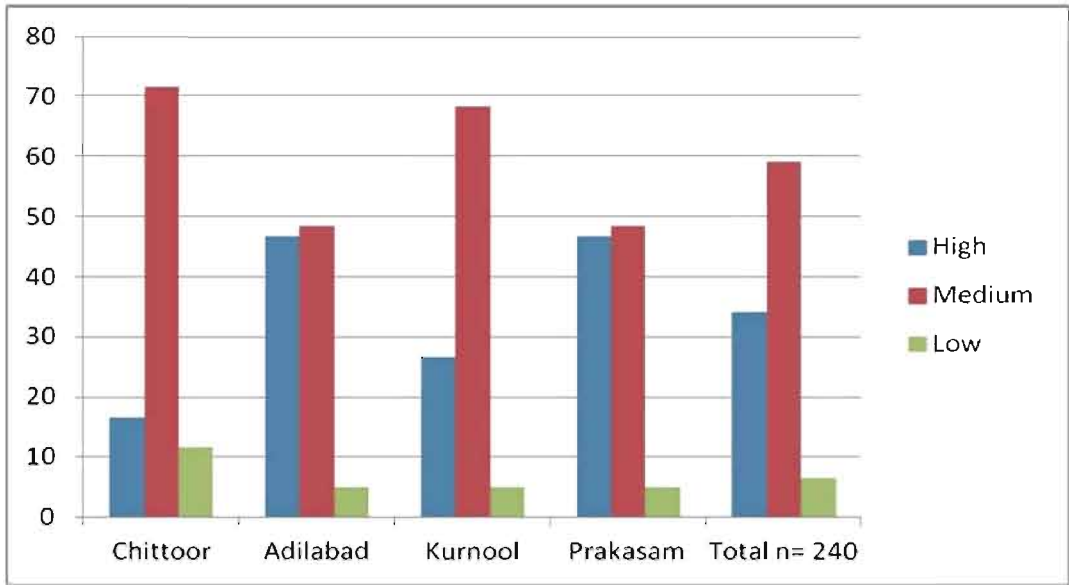


Fig.4.10 Distribution of respondents according to crop and enterprise intensification

Table 4.10. Distribution of extension functionaries according to their attitude towards extension reforms (n= 80)

S.No	Category	f	%
1	Highly favourable Attitude	11	13.75
2	Favourable Attitude	60	75.00
3	Un favourable Attitude	9	11.25
	Mean	88.25	
	SD	11.52	

An over view of the table4.10 indicated that three fourths (75.00%) of the extension functionaries of Chittoor, Adilabad, Kurnool and Prakasam districts had favourable attitude towards extension reforms followed by highly favourable (13.75%) and un favourable attitude (11.25%). The reason might be that the reforms had given opportunities for demand driven FSBE extension activities, capacity building and also handful of funds, though the burden of work was increased. The stake holders had favourable attitude towards new institutional arrangements, broad basing of extension services and research extension farmer linkages. They expressed unfavourable attitude towards group approaches as such formation of groups at village level was time consuming .They expressed that groups will become sustainable if they were formed at district level. They also expressed favourable attitude towards convergence and multi agency extension approaches to some extent. The results were in line with results of Nasib Singh and Singh RP (2008).

4.3 The extent of crop diversification and intensification by the farmers

4.3.1 Crop and enterprise intensification

Table 4.11. Distribution of respondents according to their Crop and enterprise intensification (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	F	%	f	%	f	%	f	%
1	High	10	16.67	28	46.67	16	26.67	28	46.67	82	34.17
2	Medium	43	71.67	29	48.33	41	68.33	29	48.33	142	59.16
3	Low	7	11.66	3	5.00	3	5.00	3	5.00	16	6.67
	Mean	9.18		9.47		9.43		9.47			
	SD	1.24		1.33		1.63		1.33			

It could be elucidated from the table4.11 that crop and enterprise intensification of the ATMA respondents of Chittoor district was at medium level (71.67%) followed by high level (16.67%) and low level (11.66%) of crop and enterprise intensification. In Adilabad district crop and enterprise intensification was at medium level (48.33%) followed by high level (46.67%) and a meagre percentage of low level (5.00%) of crop and enterprise intensification. Similarly in case of Kurnool, Prakasam districts the crop

and enterprise intensification was at medium level (68.33%, 48.33% respectively) followed by high level (26.67%, 46.67% respectively) and low level(5% each district)of crop and enterprise intensification. More than half (59.16%) of total sample of ATMA respondents had medium level of crop/enterprise intensification followed by high (34.17%) and low levels of (6. 67%) crop/enterprise intensification

More than half of total sample of ATMA respondents had medium level of Crop and enterprise intensification followed by high level of Crop and enterprise intensification. The factors contributing for the above results might be that the respondents had gone for only growing of high yielding varieties of existing cops such as rice, grapes, maize, jowar and redgram. They had also taken up implementation of improved production technologies which include Integrated Nutrient Management, Integrated Pest Management, direct sowing, drip irrigation, mulching techniques, farm pond technology and fodder crops at convenient locations. The respondents had gone for growing of leguminous crops like green gram, black gram and soya bean utilizing early showers of monsoon to get additional income ,in addition to improving soil fertility status. In Kurnool district enterprise intensification was taken up through preparation of organic fertilizers such as vermi compost , NADEP compost, leaf extracts and gone for organic farming. Diary enterprise was intensified by introduction of milking machines, chaff cutters, high yielding varieties of fodder crops production and feeding of Azolla to livestock. In sericulture bivoltine rearing of silk worms and introduction of disease resistant races was taken up. The results were in line with the findings of Swanson (2006), Gupta (2008), Report of AP State Govt on ATMA activities (2009), Ponnuswamy et.al (2012) and Goswami (2010).

4.3.2 Crop and enterprise diversification

Table 4.12: Distribution of respondents according to their Crop and enterprise diversification (n= 60 for each district)

S No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	F	%	f	%	f	%	f	%
1	High	12	20.00	30	50.00	14	23.33	30	50.00	86	35.83
2	Medium	32	53.33	24	40.00	35	60.00	24	40.00	116	48.33
3	Low	16	26.67	6	10.00	10	16.67	6	10.00	38	15.83
	Mean	6.50		6.55		6.77		6.55			
	SD	1.24		0.87		1.28		0.87			

It could be revealed from the table 4.12 that crop and enterprise diversification of the ATMA respondents of Chittoor district was at medium level (53.33%) followed by low and high levels of (26.67% and 20.00% respectively) crop and enterprise diversification. In Adilabad district crop and enterprise diversification was at medium

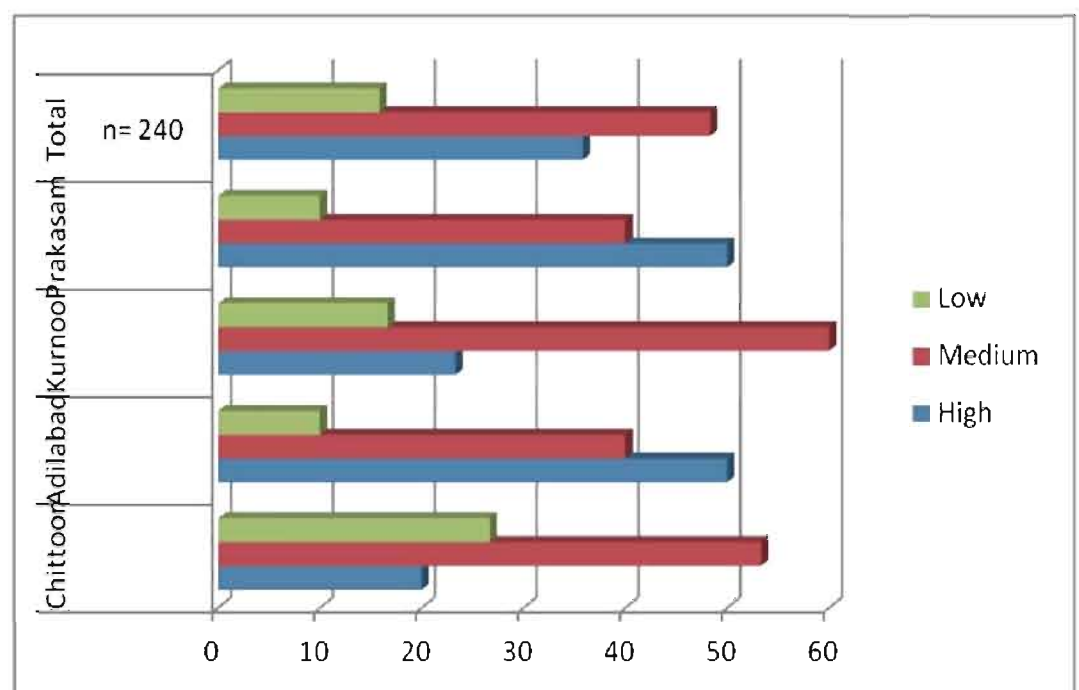


Fig.4.11 Distribution of respondents according to crop and enterprise diversification

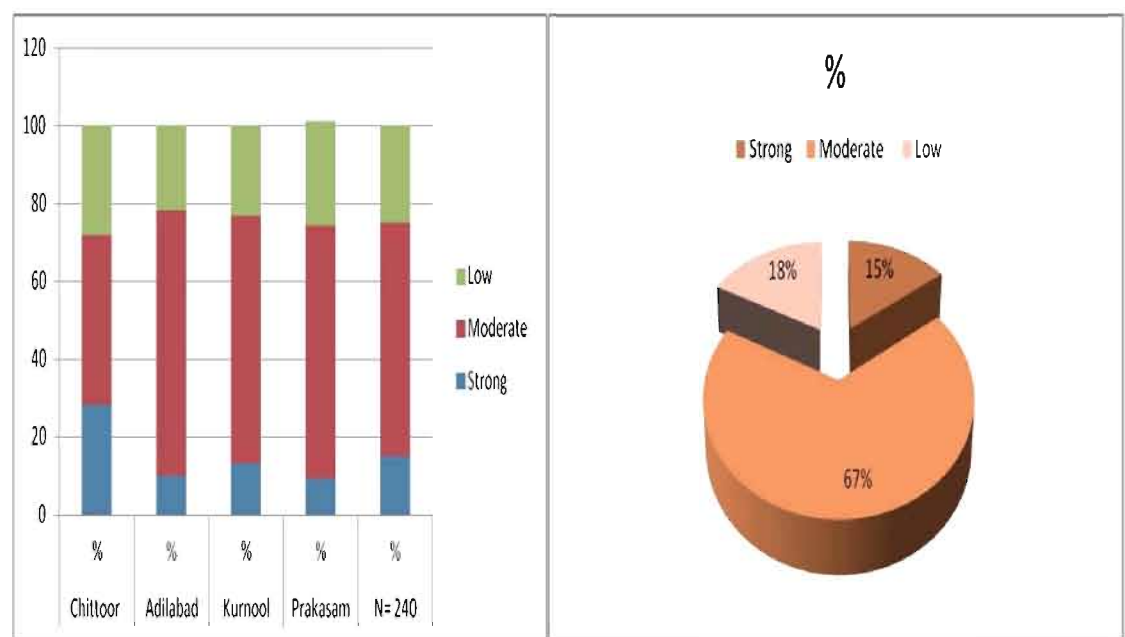


Fig.4.12 Distribution of respondents according to convergence Farmers,extension officers

level (50.00%) followed by high (40.00%) and low levels (10.00%). Similarly in case of Kurnool district the crop and enterprise diversification was at medium level (60.00 %) followed by high and low levels of crop and enterprise diversification (23.33 %, 16.67 %) respectively. In Prakasam district the crop and enterprise diversification was at high level (50.00%) followed by medium and low levels of crop and enterprise diversification (40.00% and 10.00%) respectively. Majority (48.33%) of total sample of ATMA respondents had medium level of crop and enterprise diversification followed by high (35.83%) and low (15.83%) levels of Crop and enterprise diversification

The results revealed that 48.33 per cent of total sample of ATMA respondents had medium level of crop and enterprise diversification followed by high (35.83%) and low levels (15.83%) of diversification. The crop diversification was medium to high level due to coordinated efforts of departments of Agriculture, Horticulture, Veterinary and allied sectors. The respondents had taken up mostly enterprises like dairying, use of milking machines, improved methods of silk worms production, vermin compost units, new animal feeds in all the districts. The specific enterprises taken up were value addition to mango, sericulture in Chittoor district. Establishment of compost preparation units, value addition to soya products in Adilabad. ATMA in agreement with American soybean association promoted soya based food industries (two soya oil expellers, two soya cows and two soya fast food centers) in Adilabad. Value addition to banana in Kurnool district. Market linkage (buy back mechanism) with Mother Charity Organization, Chittoor had made the resource poor farmers to diversify their dry land crops to cluster bean in 1000 acres. Under crop diversification the respondents had gone for Zero tillage maize, bengalgram, redgram, cabbage, cauliflower, potato, rainfed tomato, drumstick and medicinal plants like Aswagandha in the possible areas. Diversification triggered by the adequate market support. It only indicates the strong commercial sense of the farmers in marketing. Biodiversity and climatic factors provide a significant edge for introduction of new crops. It further re inforce the utility of SREP. exposure visits and farmer to farmer extension are the strong leads to promote large scale adoption. The results were in confirmation with the results of Singh and Swanson (2006), Singh (2006), Gupta (2008), Report of AP State Govt on ATMA activities (2009) and Ponnuswamy et.al (2012).

4.4 The extent of convergence and linkage mechanisms in implementation of activities in gap filling mode

4.4.1 Convergence

Table4.13. Distribution of respondents according to the opinion about convergence in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	Strong	17	28.33	6	10.00	8	13.33	5	9.33	36	15.00
2	Moderate	26	43.33	41	68.33	38	63.33	39	65.00	144	60.00
3	Low	17	28.33	13	21.67	14	23.33	16	26.67	60	25.00
	Mean	8.45		2.59		9.93		8.93			
	SD	2.31		10.28		2.74		1.89			

It could be inferred from the results in the table 4.13 that majority of the ATMA respondents of Chittoor district expressed that the convergence was at moderate level (43.33%) followed by equal per cent of strong and low (28.33%) convergence. In case of Adilabad district the convergence was at moderate level (68.33%) followed by low (21.6%) and strong (10.00%) convergence. Similarly in case of Kurnool and Prakasam districts majority of the farmers had moderate level of convergence (63.33%, 65.00% respectively) followed by low level of convergence (23.33%, 26.67% respectively) and strong level of convergence (1.33% and 9.33%respectively). About 60.00% of total sample of ATMA respondents expressed that that the convergence among line departments was at moderate level followed by low (25.00%) and strong (15.00%) levels of convergence.

The results indicated that convergence in extension reforms was at moderate level followed by strong and weak levels of convergence. The results were so due to the reason that the stakeholders were preparing their action plans on their own and pooling them at BAP level. The implementation of approved action plans were also done individually depending upon financial allotment. The suggestions of the members of FAC were included in the action plans only to some extent. There was convergence with local research institutes in the preparation of SREP and action plans only. The research institutions have developed very few location specific technologies except popularisation of already existing technologies through organizing demonstrations. Promotion of public private partnership was also meagre as they were allotted funds for organisation of training programmes and FLD’s. On the whole convergence was observed in planning of the programmes. Only short term convergence was observed in implementing of the programmes ranging from 1day to 5 days while organising field visits, training programmes, exposure visits and animal health camps. Poor convergence was observed in funding mechanism and implementation of activities. No public private

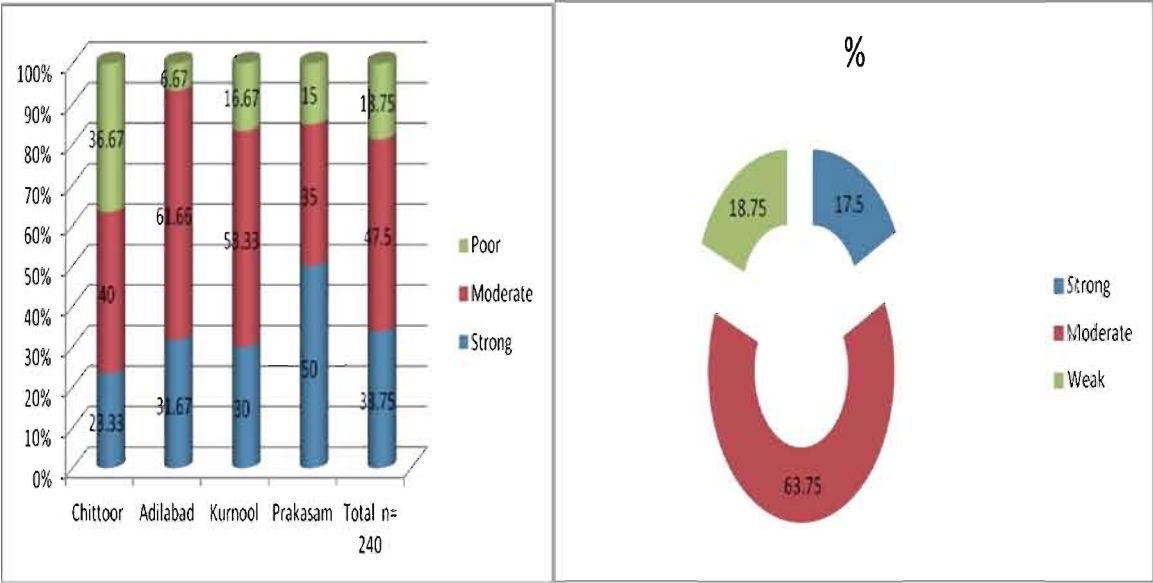


Fig.4.13 Distribution of respondents according to linkage mechanisms Farmers, extension officers

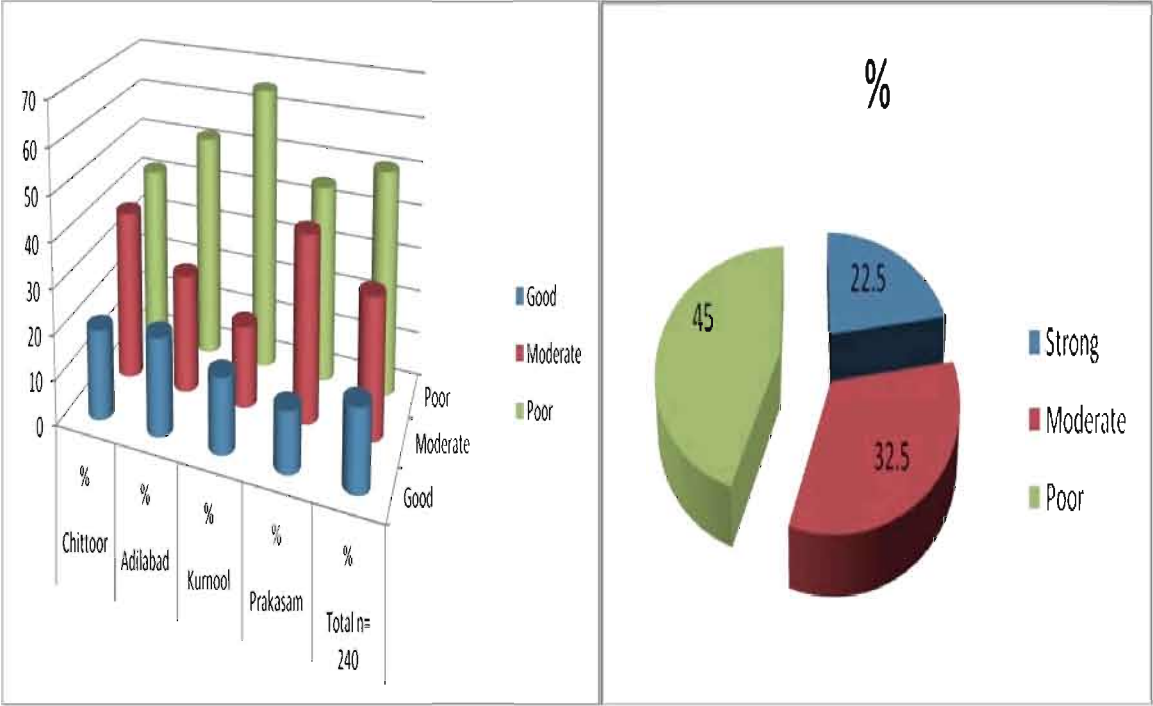


Fig.4.14 Distribution of respondents according to Coordination farmers extension officers

partnership was observed in the activities as such a few trainings were allotted to them. Out sourcing of experts, input and other areas was also not observed in all the districts due to poor coordination among stakeholders. In funding process also convergence was medium because only fifty percent of the proposed funds for the activities were allotted to other departments such as horticulture, veterinary and in some locations to sericulture. Poor convergence was observed among the marketing, fisheries and forestry department. As such convergence was medium in planning as the plans were prepared and reviewed through convening FAC, AMC meetings which were not organised regularly. Lack of participation of line department officers in ATMA meetings. Even the block action plans and fund allocation are not prepared in consensus. This area needs much attention. The results were in the line with the results of Lenin et al. (2009)

Table 4.14. Distribution of Extension functionaries according to their opinion about convergence in extension reforms (n= 80 for each district)

S.no	Category	f	%
1	Strong	12	15.00
2	Moderate	54	67.50
3	Low	14	17.50
	Mean	23.47	
	SD	5.24	

The table 4.14 revealed that in view of extension functionaries the convergence in activities of extension reforms was at moderate level (67.50%) followed by low level of convergence (17.50%) and strong level of convergence (15.00%). The reasons might be that most of the extension functionaries of line departments expressed that there was convergence in planning part only but the convergence was very low in funding and implementation stages due to meagre and untimely allotment of funds for the plans proposed by line departments. Another reason contributing towards the expressed result was for departments, other than agriculture limited amount of funds were granted only towards organisation of trainings and exposure visits, meagre amounts were allotted for organising demonstrations.

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- Prakasam 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. 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-Chittor has initiated convergence with DWACRA (of DRDA), Community Marketing (of DPIP) and water shed programme (of DPAP). ATMA-Prakasham has initiated convergence with Andhra Pradesh Livestock Development Agency and Integrated Rural Development Project. Such convergences have resulted into positive impacts in field.

In Kurnool district ATMA Convergence with KVK is excellent activities like on farm trials for dissemination of agricultural technologies and new varieties have been implemented by KVK, Banganapalli in the farmers fields.In convergence with Krishi Vigyan Kendra, Kurnool promoting activities like Neem seed pounding, organic farming and cultivation of medicinal plants.

4.4.2 Linkage mechanisms

Table 4. 15. Distribution of respondents according to their opinion about linkage mechanisms in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	Strong	14	23.33	19	31.67	18	30.00	30	50.00	81	33.75
2	Moderate	24	40.00	37	61.66	32	53.33	21	35.00	114	47.50
3	Poor	22	36.67	4	6.67	10	16.67	9	15.00	45	18.75
	Mean	11.53		13.48		13.38		13.98			
	SD	3.34		2.11		2.85		2.93			

It could be inferred from the table 4.15 that in Chittoor district the linkage mechanisms among stake holders were moderate (40.00%) followed by poor (36.67%) and strong (23.33%) linkages. Whereas in Adilabad district the linkage mechanisms among stake holders were moderate (61.66%) followed by strong (31.67%) and poor (6.67%) linkages. Similarly in Kurnool district linkage mechanisms among stake holders were moderate (53.33%) followed by strong (30.00%) and poor (16.67%)

linkages. In Prakasam district linkage mechanisms among stake holders were strong (50.00%) followed by moderate and poor (35.00%, 15.00% respectively) linkages. On the whole the linkage mechanisms were moderate (47.50%) followed by strong and poor linkages (33.75%, 18.75 % respectively).

On the whole as per the results the linkage mechanisms were at moderate level followed by strong and poor linkages. ATMA as a platform facilitate and promote organic linkage among various stakeholders. Even then the reasons for moderate linkages might be due to poor involvement of all stake holders in planning, implementing phases of reforms that too short duration convergence and poor coordination. The line departments planned programmes independently and were pooled up at FAC level, mostly linkages were maintained in promotion of value added products and high yielding varieties of crops etc. Involvement of NABARD and other government agencies in ATMA activities was poor. Public Private Partnership was observed in all the districts only to some extent. The NGOs and agencies involved in Adilabad were M/S American Soyabean Association, M/S trinity Agritek (Chiranjee processing), Pragati Bharati and M/S Sresta Natural bio products (marketing of organic products). In Chittoor district Mother Charitable Trust (cluster bean), Prakruti foundation and Bharatiya Kissan Sangh. In Kurnool district Bhagavatula Charitable Trust. ATMA as a platform facilitate and promote organic linkage among various stake holders.The results were also in confirmation with the results of Report of A P State Govt on ATMA activities (2009).

Table 4.16. Distribution of extension functionaries according to their opinion about linkage mechanisms in extension reforms (n= 80 for each district)

S.No	Category	f	%
1	Strong	14	17.50
2	Moderate	51	63.75
3	Weak	15	18.75
	Mean	33.87	
	SD	3.88	

The table 4.16 revealed that in view of extension functionaries the linkage mechanisms in activities of extension reforms was at moderate level (63.75%) followed by strong and poor linkages (18.75%,17.50%) respectively. The reasons were that the linkages were maintained mostly during organisation of rytusadassus, kissan melas, exhibitions and FSI meetings. The stake holders were organising demonstrations in their mother department budgets with regular action plans and the same were shown again under ATMA also.

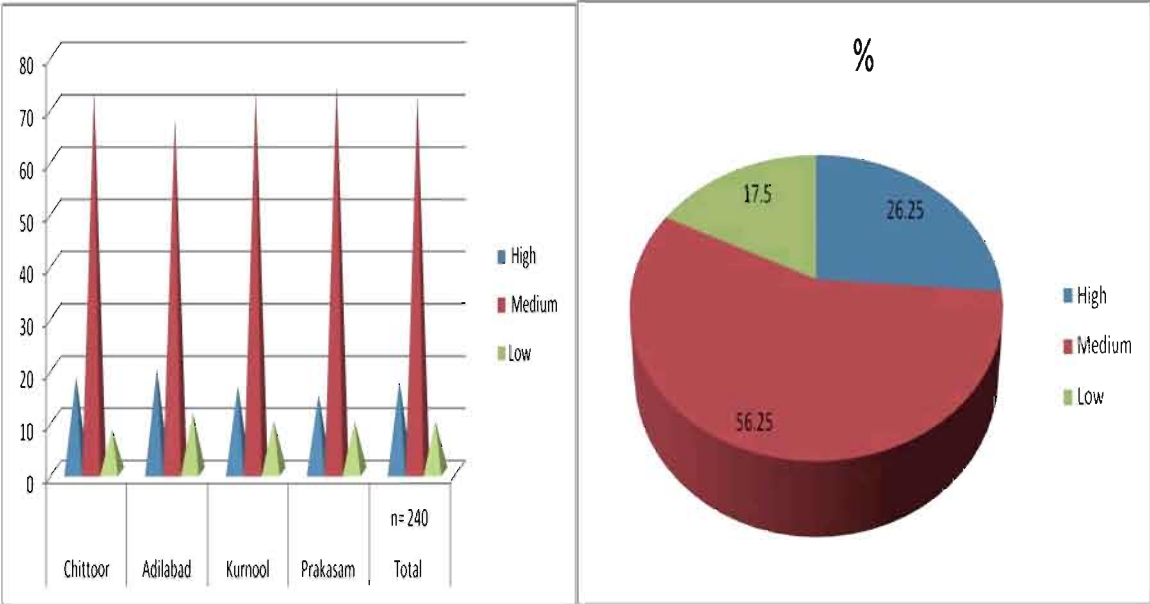


Fig.4.15 Distribution of respondents according to grouped extension Farmers, extension officers

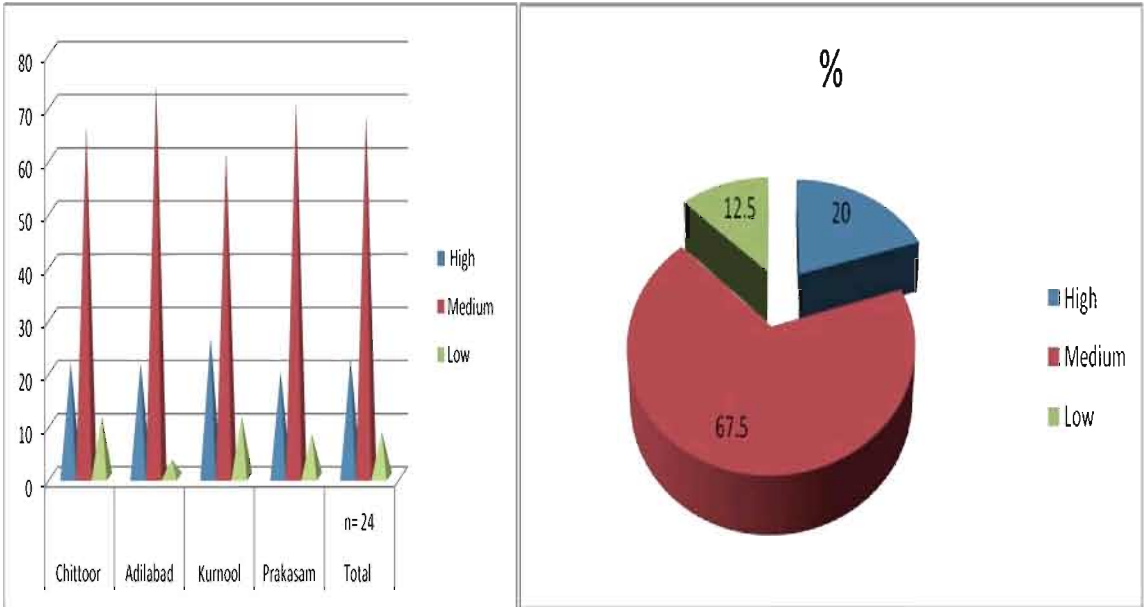


Fig.4.16 Distribution of respondents according to Capacity building farmers, extension officers

4.4.3 Coordination

Table 4.17. Distribution of respondents according to their opinion about Coordination in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	Good	12	20.00	13	21.67	10	16.67	8	13.33	43	17.92
2	Moderate	23	38.33	16	26.67	11	18.33	25	41.67	75	31.25
3	Poor	25	41.67	31	51.66	39	65.00	27	45.00	122	50.83
	Mean	15.58		18.93		16.10		19.49			
	SD	2.31		2.59		2.74		1.89			

It could be revealed from the table 4.17 that in Chittoor district the coordination among stake holders was poor (41.67%) followed by moderate(38.33%) and good levels (20%) of coordination respectively. Whereas in Adilabad district the coordination among stake holders was poor (51.66%) followed by moderate (26.67%) and good (21.67%) coordination. Similarly in Kurnool district coordination among stake holders was poor (65.00%) followed by moderate (18.33%) and good (16.67%) coordination. In Prakasam district coordination among stake holders was poor (45%) followed by moderate (41.67%) and good levels (13.33%) of coordination . On the whole the coordination was poor (50.83%) followed by moderate (31.25%) and good (17.92%) levels of coordination.

The results revealed that poor coordination was observed among stakeholders followed by medium and good coordination. The reasons for the above results might be due to moderate levels of convergence, linkage mechanisms among the stake holders lead to poor coordination in providing information and services to the farmers at base level. This could be due to meagre efforts of line departments in establishing credibility with the farming community through need based activities. Involvement of the farmers at all levels naturally increased the responsibility and accountability to ATMA. Among the line departments Horticulture, Animal Husbandry, Fisheries and Sericulture were working in coordination with the department of agriculture. The involvement of marketing department, input agencies and NGO's is meagre and base level institutions were also weak as proper concentration was not given to form/strengthen them. The coordination was poor due to this reason the farmers were unable to get full benefits from the reforms.

Table4.18. Distribution of extension functionaries according to the opinion about Coordination in extension reforms (n= 80)

S.no	Category	f	%
1	Strong	18	22.50
2	Moderate	26	32.50
3	Poor	36	45.00
	Mean	11.12	
	SD	1.87	

An insight of the table 4.18 showed that in view of extension functionaries the coordination in activities of extension reforms was poor (45.00%) followed by moderate (32.50%) and good levels(22.50%) of coordination.

The reasons for this trend of results might be busy schedule of the officers of line departments and hierarchal problems for maintaining mutual relationships.

4.5 The functioning of group led extension and the extent of decentralised decision making

4.5.1 Group led extension

Table 4.19. Distribution of respondents according to their perception on Group led extension in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	High	11	18.33	12	20.00	10	16.67	9	15.00	42	17.50
2	Medium	44	73.33	41	68.33	44	73.33	45	75.00	174	72.50
3	Low	5	8.33	7	11.67	6	10.00	6	10.00	24	10.00
	Mean	29.80		40.30		30.50		32.38			
	SD	4.70		4.53		6.20		5.21			

It could be observed from the table that the group led extension promoted under extension reforms in Chittoor, Adilabad, Kurnool and Prakasam districts was at medium level(73.33%, 68.33%,73.33%&75.00% respectively) followed by high levels(18.33%, 20.00% ,16.67% &15.00% respectively). On the whole group led extension in extension reforms was at medium level (72.50%) followed by high and low levels (17.50%, 10.00%) of group led extension respectively.

Table 4.20:Distribution of extension functionaries according to their perception on Group led extension in extension reforms (n= 80)

S.No	Category	f	%
1	High	21	26..25
2	Medium	45	56.25
3	Low	14	17.50
	Mean	35.52	
	SD	3.28	

An insight of the table 4.20 showed that in view of extension functionaries the group led extension in activities of extension reforms was at medium level (56.25%) followed by high level (26..25%).

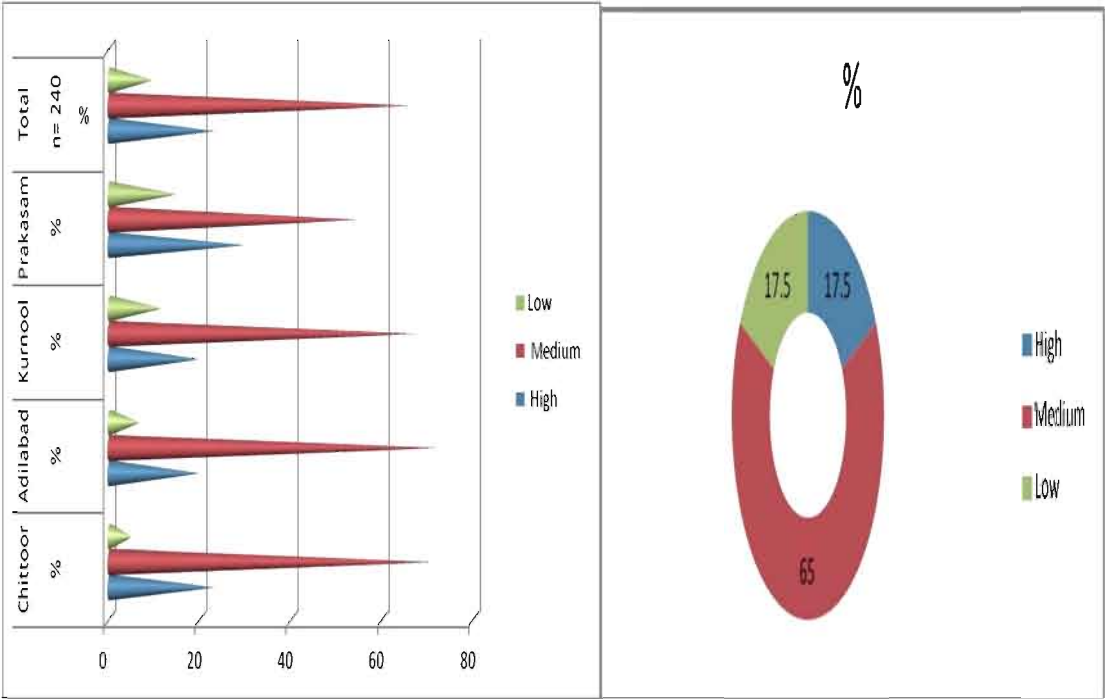


Fig.4.17 Distribution of respondents according to women participation farmers, extension officers

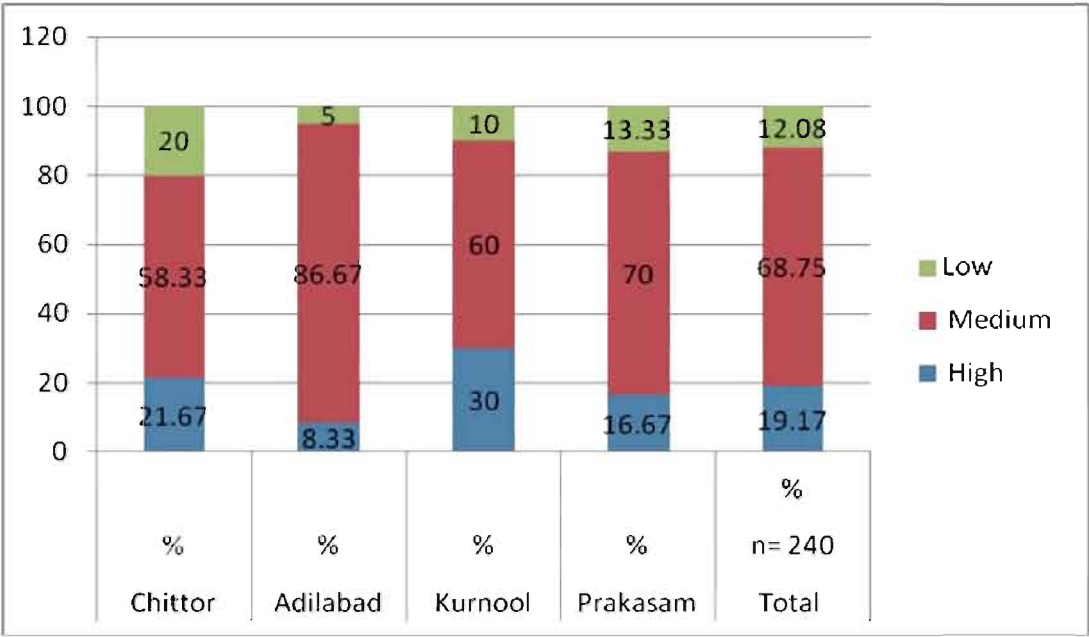


Fig.4.18 Distribution of respondents according to decision making of farmers

The above results confirmed that the group led extension in extension reforms was at medium level followed by high and low levels. The reasons might be that the regular participation of farmers was observed only in trainings, exposure visits and in other programmes the participation might be low because basically no new groups were promoted under extension reforms. The processes of extension reforms were promoted only through the existing groups in all the districts. The spread of information was also done through the existing groups only. Though the groups were formed they became unviable due to lack of funds. Only few groups on soya bean, redgram, cotton were formed in Adilabad, banana group in Kurnool, Mango, organic farming groups in Chittoor district were vital. The another factor contributed for medium level of group led extension activities was moderate levels of convergence, linkage mechanisms and poor coordination among stake holders because of which they were unable to create feeling of owning of the project among the farmers.

Though only few groups were formed the transfer of technologies were done through already exiting groups such as Rytumitra groups, SHGs etc. The members of the groups were also not fully aware of the benefits that can be achieved through groups The respondents expressed that due to membership in groups they were able to represent problems, getting latest technical information, provision for demonstration of new technologies, machinery on large scale and setting up of Agro based industries such as soya based food industry in Adilabad. The spread of information was mostly10-15 members followed by more than 15 members on new production technologies, organic farming followed by value addition by the trained members. The results were in line with the results of Usha Devi (2000), Bhagyalakshmi (2002), Gupta (2008) and Srinivasulu (2011)

4.5.2 Capacity building

Table 4.21. Distribution of respondents according to their perception on Capacity building (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n=240	
		f	%	f	%	f	%	f	%	f	%
1	High	13	21.67	13	21.67	16	26.67	12	20.00	54	22.50
2	Medium	40	66.66	45	75.00	37	61.66	43	71.67	165	68.75
3	Low	7	11.67	2	3.33	7	11.67	5	8.33	21	8.75
	Mean	21.43		21.43		21.78		24.15			
	SD	3.83		3.81		3.95		4.00			

It could be elucidated from the table 4.21 that the capacity building of respondents in Chittoor, Adilabad, Kurnool and Prakasam districts was at medium level

(66.66%,75.00%,61.66%,71.67% respectively) followed by high levels(21.67%, 21.67%, 26.67%, 20.00% respectively) and low levels (11.67%,3.33%,11.67% and 8.33% respectively).On the whole Capacity building in extension reforms was at medium level (68.75%) followed by high (22.5%) and low (8.75%) levels of capacity building respectively.

Table 4.22. Distribution of extension functionaries according to their perception on Capacity building (n= 80)

S.No	Category	f	%
1	High	16	20.00
2	Medium	54	67.50
3	Low	10	12.50
	Mean	12.25	
	SD	1.92	

An insight of the table 4.22 showed that in view of extension functionaries the capacity building in activities of extension reforms was at medium level (67.50%) followed by high level (20.00%) and low level (12.50%) of capacity building. Majority (33.83) of the farmers participated in the within the district followed by outside the district (9.14) exposure cum training programmes. None of the farmers participated in the exposure cum training programmes at the state level. It was noted that few farmers (2.71%) have participated in interstate training. These findings indicate that the majority of the farmers participated in the training programmes organized with in the district. The farmers must be encouraged to participate in the exposure cum training programmes at state level and out side the state to widen their vision towards quicker development.

It could be inferred from the results that capacity building in extension reforms was at medium level followed by high and low levels. The reasons for this trend might be the medium extension contacts, social participation and group led extension, moderate convergence, linkage mechanisms and poor coordination led to the medium level of capacity building of farmers in extension reforms. As a result of moderate convergence and poor coordination among the stakeholders only traditional trainings on improved production technologies, inter & intra district exposure visits and a few interstate visits were organised with the available farmers for the name sake in short notice of time. The results matched with the result of Gupta (2008)

4.5.3 Women participation

Table 4.23. Distribution of respondents according to their perceived opinion on Women participation in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittoor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	High	14	23.33	12	20.00	12	20.00	18	30.00	56	23.33
2	Medium	43	71.67	44	73.33	4	68.33	33	55.00	161	67.08
3	Low	3	5.00	4	6.67	7	11.67	9	15.00	23	9.58
	Mean	17.97		20.08		20.35		21.42			
	SD	4.51		2.88		3.93		3.28			

It could be interpreted from the table 4.23 that the women participation in activities of extension reforms in Chittoor, Adilabad, Kurnool and Prakasam districts was at medium level (71.67%, 73.33% 68.33% and 55% respectively) followed by high levels (23.33%, 20%,20% and 30% respectively) and low levels (5.00%,6.67%,11.67% and 15.00% respectively). On the whole women participation in activities of extension reforms was at medium level (67.08%) followed by high (23.33%) and low (9.58%) levels of participation respectively. This might be attributed to the efforts of line departments in involving women farmers at all levels. Gender mainstreaming through participatory approaches is the need of the hour to realize gender balance and equity.

Table 4.24. Distribution of extension functionaries according to their perceived opinion on Women participation in extension reforms (n= 80)

S.No	Category	f	%
1	High	14	17.50
2	Medium	52	65.00
3	Low	14	17.50
	Mean	20.13	
	SD	4.15	

An overview of the table 4.24 showed that extension functionaries expressed that the women participation in activities of extension reforms was at medium level (65.00%) followed by high and low levels (17.50% each).

The results showed that women participation in activities of extension reforms was at medium level followed by high and low levels of participation. The reasons for this might be that no special women groups were formed under ATMA and only 2 to 3 members were included in FAC, MC of ATMA and no women members were included in FFS. Though the women members were representing in committees, their participation was only in some activities i.e. in FAC meetings, training programmes, exposure visits , kisan goshtis which were of short duration but they were not able to analyse problems, contributing only to some extent for planning and implementation of the activities in extension reforms. The medium level of women participation may be

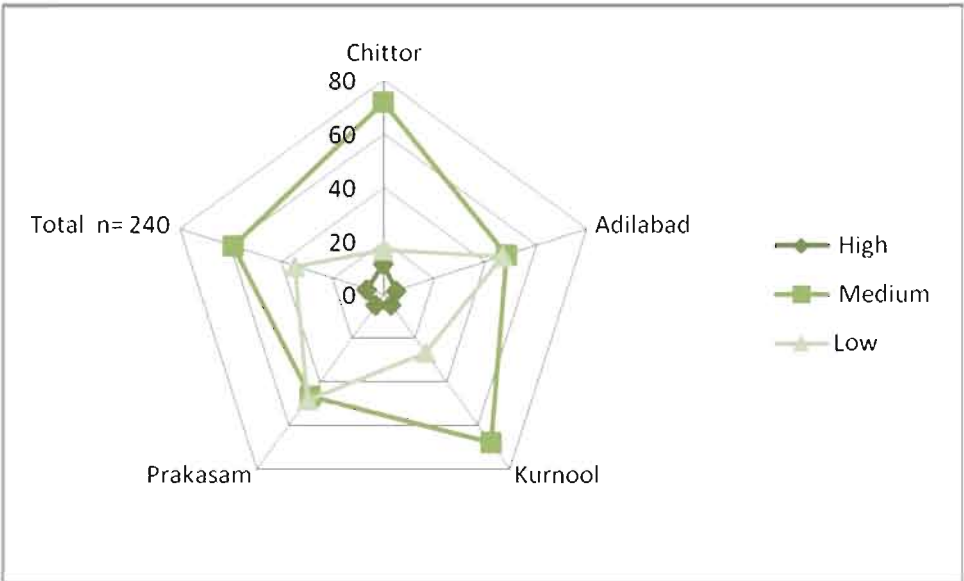


Fig.4.19 Distribution of respondents according to farmer to farmer extnsion

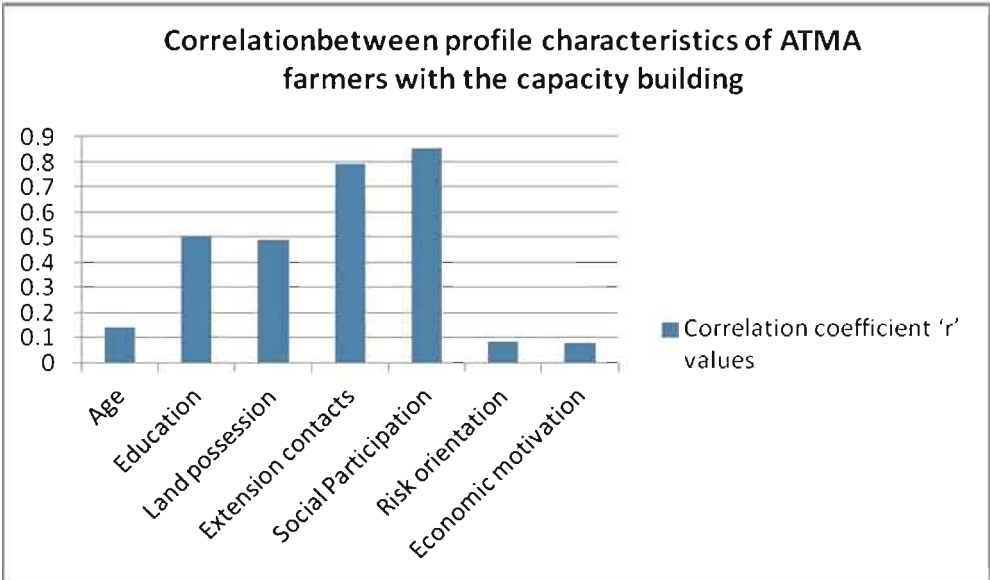


Figure 4.20 Correlation between profile and capacity building

due to handling of house and farm work simultaneously, restrictions to meet outsiders by family, language and education gaps.

4.5.4 Decision making

Table 4.25. Distribution of respondents according to their perceived opinion on Decision making in extension reforms (n= 60 for each district)

S No	Category of farmers	Chittor		Adilabad		Kurnool		Prakasam		Total n= 240	
		F	%	f	%	f	%	f	%	f	%
1	High	13	21.67	5	8.33	18	30.00	10	16.67	46	19.17
2	Medium	35	58.33	52	86.67	36	60.00	42	70.00	165	68.75
3	Low	12	20.00	3	5.00	6	10.00	8	13.33	29	12.08
	Mean	20.58		28.28		27.88		25.88			
	SD	7.28		4.86		4.75		4.42			

It could be reported from the table 4.25 that the decision making by the stakeholders in activities of extension reforms in Chittoor, Adilabad, Kurnool and Prakasam districts was at medium level (58.33%,86.67%,60.00%&70.00% respectively) followed by high (21.67%, 8.33 % ,30.00% & 16.67% respectively) and low levels (20.00%,5.00%,10.00% and 13.33% respectively) of decision making. On the whole, the decision making by the stake holders in activities of extension reforms was at medium level (68.75%) followed by high and low levels of decision making (19.17%, 12.08%) respectively.

The results showed that the decision making by the stakeholders in activities of extension reforms was at medium level followed by high and low level. The reasons were that though the objective was to promote decentralised decision making it was only up to medium level i.e, plans were prepared by the officials without the involvement of farmers groups at block level and the plans were discussed in FAC meeting and after that only few suggestions/priorities of farmer members were included in annual action plans. Formation of FIGs / CIGs at village level was also a problem due to lack of interest and also in sufficient strength of officials at village / block levels

4.5.5 Farmer to Farmer extension

Table4.26.Distribution of respondents according to their perceived opinion on Farmer to Farmer extension in extension reforms (n= 60 for each district)

S. No	Category of farmers	Chittor		Adilabad		Kurnool		Prakasam		Total n= 240	
		f	%	f	%	f	%	f	%	f	%
1	High	7	11.66	3	5.00	3	5.00	3	5.00	16	6.67
2	Medium	43	71.67	29	48.33	41	68.33	28	46.67	141	58.75
3	Low	10	16.67	28	46.67	16	26.67	29	48.33	83	34.58
	Mean	9.18		9.47		9.43		9.47			
	SD	1.24		1.33		1.63		1.33			

From the above table 4.26 it could be elucidated that farmer to farmer extension on the whole was at medium level (58.75%) followed by low (34.58%) and high levels (6.67%) of farmer to farmer extension.

The reasons for this might be, lack of interest among the extension functionaries in organisation of FFS as per the guidelines due to overburden of work. The programmes were organized nominally on the technologies which were not the need of hour. Poor documentation of success /failure stories of FFS, though documented not publicized, few exposure visits organized to successful demonstrations were the reasons for less participation of the farmers in the programme. Hence the efforts must be concentrated by the officials to encourage the participation of farmers in the programme by assigning full responsibility of mobilisation of farmers to farmers groups and to overcome the weaknesses as identified above.

4.5.6 Bottom up planning

Bottom up planning was at low level. The members of ATMA committees were not asked about the location specific needs, though needs were expressed by them a few were included in BAPs. The farmers were not the members of SREP team. Few chances were given to farmer members of the committees to represent their technological needs. Hence the administrators must concentrate on formation and strengthening of base level institutions such as FIGs / CIGs and also should encourage the stakeholders to participate in block action plans preparation and flexibility in planning was to be operationalised by 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

ATMA-Adilabad had adopted the concept of 'Adopted Villages' has been used for implementation of decentralised and bottom up planning. In the very first year (2001-2002) two villages each from 52 mandals were identified and selected for intervention. BTT conducted (grass root 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 guide book .

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 2001-2002 line departments could not do much under their routine programs but in the year (2002-2003) they have planned ample number of activities for these villages. 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 the 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 were in constant touch with villagers/farmers and farmers' feedback on plan of activities was a regular phenomenon.

4.6. Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on process implimentation of extension reforms

4.6.1 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on decentralised decision making ability

Table 4.27. Relationship between selected profile characteristics of ATMA farmers with their perceived opinion on decentralised decision making ability (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.235 **
X ₂	Education	0.214**
X ₃	Land possession	0.237**
X ₄	Extension contact	0.279**
X ₅	Social Participation	0.143*
X ₆	Risk orientation	0.588**
X ₇	Economic motivation	0.147 *

NS: Non significant

** : Significant at 0.01 level of probability

* Significant at 0.05 level of probability

It was revealed from the Table 4.27 that the computed 'r' values of age, education, land possession, extension contact and risk orientation were found positively significant at 1 per cent level of probability. Social participation and economic motivation were positively significant at 5 per cent level of probability with the decentralised decision making in process implementation of extension reforms. Hence

null hypothesis was rejected with respect to decentralised decision making in process implementation.

The above results indicated that age, education, land possession, extension contacts and risk orientation were contributed towards decentralised decision making since with increased continuum of these characters one could understand the importance of decentralisation of decision making and contribute for effective implementation of the programme.

4.6.2 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on capacity building

Table 4.28. Relationship between selected profile characteristics of ATMA farmers with their perceived opinion on capacity building (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.141 *
X ₂	Education	0.505 **
X ₃	Land possession	0.487 **
X ₄	Extension contact	0.790 **
X ₅	Social Participation	0.851 **
X ₆	Risk orientation	-0.085 NS
X ₇	Economic motivation	-0.077 NS

NS: Non significant

** : Significant at 0.01 level of probability

* Significant at 0.05 level of probability

It could be observed from the above table Table 4.28 that the computed 'r' values of education, land possession, extension contact and social participation were found to be positively significant with the capacity building at 1per cent level of probability. While age was correlated at 5per cent level of probability, risk orientation and economic motivation were found non significant with the capacity building in process implementation of extension reforms. Hence null hypothesis with respect to capacity building was rejected.

The results showed that capacity building had relationship with the profile characters of respondents. Capacity building denotes the improvement in competencies through participation in extension activities and undergoing training programmes which will be an internal zeal of individual that is why the above result might had obtained. The another reason might be the organization of trainings, exposure visits, interaction meetings in traditional way on age old practices which were well known to the farmers might have resulted in non significant relationship with the farmers who had risk orientation and economic motivation.

4.6.3 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on Group led extension

Table 4.29. Relationship between selected profile characteristics of ATMA farmers with their perceived opinion on Group led extension (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.897 **
X ₂	Education	0.399 **
X ₃	Land possession	0.872 **
X ₄	Extension contact	0.845**
X ₅	Social Participation	0.622 **
X ₆	Risk orientation	0.140*
X ₇	Economic motivation	0.564**

NS: Non significant

** Significant at 0.01 level of probability

* Significant at 0.05 level of probability

It was apparent from Table 4.29 that the computed 'r' values of age, education, land possession, extension contact, social participation and economic motivation were found positively significant at 1per cent level of probability. Where as risk orientation was positively significant at 5per cent level of probability with the group led extension in process implementation of extension reforms. Hence null hypothesis was rejected with respect to group led extension in process implementation of extension reforms.

Group led extension showed positive and significant relationship with the profile characters of individuals. This was due to the reason that most of the members of SHGs and other groups had realised the benefits of group led extension.

4.6.4 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on convergence

Table 4.30. Relationship between selected profile characteristics of ATMA farmers with their percieved opinion on convergence (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.634 **
X ₂	Education	0.270**
X ₃	Land possession	0.647**
X ₄	Extension contact	0.609**
X ₅	Social Participation	0.099 NS
X ₆	Risk orientation	0.176**
X ₇	Economic motivation	0.428**

NS: Non significant

** : Significant at 0.01 level of probability

An overview of the Table 4.30 showed that the computed 'r' values of age, education, land possession, economic motivation, extension contact and risk orientation

were found positively significant at 1per cent level of probability. Social participation was found non significant with the convergence in process implementation of extension reforms. Hence null hypothesis was rejected with respect to convergence in process implementation of extension reforms.

A positive and significant relationship was observed between convergence and personal variables such as age, education, land possession, risk orientation and economic motivation as well as extension contact because these variables motivate the individuals to strengthen convergence with other stakeholders for reaping more benefits.

4.6.5 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on Linkage mechanisms

Table 4.31. Relationship between selected profile characteristics of ATMA farmers with their perceived opinion on Linkage mechanisms (n=240)

Variable	Independent variables	Correlation coefficient ‘r’ values
X ₁	Age	0.567 **
X ₂	Education	0.301 **
X ₃	Land possession	0.599 **
X ₄	Extension contact	0.551 **
X ₅	Social Participation	0.150*
X ₆	Risk orientation	0.063NS
X ₇	Economic motivation	0.471**

NS: Non significant

** : Significant at 0.01 level of probability

* Significant at 0.05 level of probability

It can be observed from the 4.31 Table that the computed ‘r’ values of age, education, land possession, economic motivation and extension contact were found positively significant at 1per cent level of probability. Where as, social participation was significant at 5per cent level of probability, and risk orientation was found non significant with the linkage mechanisms in process implementation of extension reforms. Hence null hypothesis was rejected in this case.

A positive and significant relationship was observed between linkage mechanisms and age, education, land possession, economic motivation and extension contact. The individuals with higher side of the above variables will try to know advanced/latest information from different sources by maintaining cordial linkages in order to reap the benefits of developmental programme

4.6.6 Relationship between the selected profile characteristics of ATMA farmers with their perceived opinion on coordination

Table 4.32. Relationship between selected profile characteristics of ATMA farmers with their perceived opinion on coordination (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.633 **
X ₂	Education	0.270 **
X ₃	Land possession	0.647**
X ₄	Extension contact	0.609 **
X ₅	Social Participation	0.099 NS
X ₆	Risk orientation	0.176**
X ₇	Economic motivation	0.428**

NS: Non significant

From the above Table 4.32 it could be revealed that the computed ‘r’ values of age, education, land possession, economic motivation, extension contact and risk orientation were found positively significant at 1per cent level of probability. While social participation was found non significant with the coordination in process implementation of extension reforms. Hence, null hypothesis was rejected with respect to coordination in process implementation of extension reforms.

A positive and significant relationship was observed between coordination and age, education, land possession, economic motivation extension contact and risk orientation. All these traits will create enthusiasm among the individuals to utilize the opportunities for increasing income and technical knowhow through coordination with all the available agencies utmost.

4.6.7 Relationship between the selected profile characteristics of ATMA farmers with the Attitude

Table 4.33. Relationship between selected profile characteristics of ATMA farmers with the Attitude (n=240)

Variable	Independent variables	Correlation coefficient 'r' values
X ₁	Age	0.915 **
X ₂	Education	0.394 **
X ₃	Land possession	0.937 **
X ₄	Extension contacts	0.911 **
X ₅	Social Participation	0.058 NS
X ₆	Risk orientation	0.197**
X ₇	Economic motivation	0.639**

NS: Non significant

It was apparent from Table 4.33 that the computed 'r' values of age, education, land possession, extension contacts, risk orientation and economic motivation were found significant at 1per cent level of probability. Social participation was found non

significant with the attitude in process implementation of extension reforms. Hence null hypothesis was rejected with respect to attitude in process implementation of extension reforms.

A positive and significant relationship was observed between attitude and profile characters such as age, education, land possession, extension contacts, risk orientation and economic motivation. The reason might be all these traits will increase the analytical abilities of individuals which serves as base towards framing opinion about an activity.

4.7. Constraints expressed by the ATMA farmers and suggestions given by them to improve the process implimentation of extension reforms

The problems enlisted by the ATMA farmers and suggestions made by them to overcome the problems to improve the process implementation of extension reforms were presented here.

4.7.1. Constraints expressed by the ATMA farmers

An attempt was made to ascertain from the beneficiaries about the problems encountered by them in process implementation of extension reforms and also their suggestions to overcome the problems. During the interview, the beneficiaries were asked to enumerate the problems faced by them in the process implementation of extension reforms and give their suggestions. The problems expressed by the beneficiaries were tabulated and presented in Table4. 34. Frequency and percentage for each problem was calculated and ranks were assigned to the problems based on their magnitude.

Table 4.34. Constraints expressed by ATMA farmer (n=240)

S.No	Constraints	Frequency	Percentage	Rank
1	Late preparation and approval of action plans	206	85.83	VII
2	Unavailability of internet and communication facilities at FIAC	229	95.41	II
3	Lack of information of programmes in advance	230	95.83	I
4	Irregularity in participation of officials in FAC meetings	220	91.67	IV
5	Preparation of action plans on their own by officials	215	89.58	VI
6	In sufficient funds	196	81.66	VIII
7	Irregularity in organisation of meetings	224	93.33	III
8	Lack of permanent staff	218	90.84	V

The data in the above Table 4.34 revealed that lack of information of programmes in advance (95.83%) was the major problem, which was followed by unavailability of internet and communication facilities at FIAC (95.41%), irregularity in organisation of meetings (93.33%), irregularity in participation of officials in FAC meetings (91.67%), lack of permanent staff (90.84%), preparation of action plans on

their own by officials(89.58%), late preparation and approval of action plans (85.83%) and insufficient funds (81.66%) as expressed by the ATMA farmers.

4.7.2. Suggestions given by the ATMA farmers

At the end of the interview, the farmers were requested to offer their suggestions to overcome the problems in process implementation of extension reforms. Their suggestions were presented in Table 4.35 with frequencies, percentages and ranks, assigned based on their magnitude.

Table 4.35. Suggestions given by the ATMA farmers to overcome the problems (n=240)

S. No	Suggestions	Frequency	Percentage	Rank
1.	Separate staff i.e. PD and supporting staff for ATMA	210	87.5	V
2.	Conducting of ATMA meetings regularly	230	95.83	II
3.	Action plans to be prepared with the convergence of farmers members also	220	91.67	IV
4.	Timely release of funds and approval of action plans	210	87.5	V
5.	Approval of action plans to be done at the district level itself	224	93.34	III
6.	Promotion of mechanisation	200	83.34	VII
7.	Promotion of organic farming	180	75.00	IX
8.	Updating of FIAC	205	85.41	VI
9.	Provision of honorarium to members of ATMA committees for attending meetings	175	72.91	X
10.	Organisation of more exposure visits	190	79.17	VIII
11.	Timely information about ATMA programmes	235	97.91	I

It was evident from the table 4.35 that majority of the farmers suggested supply of timely information about ATMA programmes (97.91%) as the first suggestion followed by conducting of ATMA meetings regularly (95.83%), approval of action plans to be done at the district level itself (93.34%), action plans to be prepared with the convergence of farmers members also (91.67%), timely release of funds and approval of action plans, separate staff i.e, PD and supporting staff for ATMA (87.5%), updating of FIAC(85.41%),promotion of mechanisation (83.34%,), organisation of more exposure visits(79.16%),promotion of organic farming(75.00%) and provision of honorarium to members of ATMA committees for attending meetings (72.91%). Ranks were assigned based on magnitude.

4.7.3. Constraints faced by extension functionaries in implementation of reforms

The problems enlisted by the Extension functionaries and suggestions made by them to overcome the problems to improve the process implementation of extension reforms were presented here.

Constraints faced by the Extension functionaries

An attempt was made to ascertain from the Extension functionaries about the problems encountered by them in process implementation of extension reforms and also their suggestions to overcome the problems. During the interview, the extension functionaries were asked to enumerate the problems faced by them in the process implementation of extension reforms and give their suggestions. The problems expressed by the beneficiaries were tabulated and presented in Table4. 36 Frequency and percentage for each problem was calculated and ranks were assigned to the problems based on their magnitude.

Table4.36. Constraints faced by Extension functionaries in implementation of reforms (n=80)

S.No	Constraints	Frequency	Percentage	Rank
1	Untimely release of funds and approval of action plans	70	87.50	VI
2	Shortage of Departmental staff	75	93.75	II
3	Insufficient allotment of funds	65	81.25	VIII
4	No convergence among line departments in planning and implementation	60	75.00	IX
5	No facilities for mobility of staff at block level	73	91.25	IV
6	Assignment of non Agricultural works to the officers	76	95.00	I
7	Difficulty in collection of 10% contribution from farmers	68	85.00	VII
8	No advance information regarding programmes to be organised	72	90.00	V
9.	Difficulty in formation of FIGs /CIGs at village level	74	92.50	III
10.	Step mother treatment in funds allocation	60	75.00	IX

The data in the Table 4.36 revealed that Assignment of non agricultural works to the officers (95.00%) was the major problem which was followed by shortage of departmental staff (93.75%), difficulty in formation of FIGs/CIGs at village level (92.50%) and no facilities for mobility of staff at block level (91.25%), No advance information regarding programmes to be organised (90.00%), Untimely release of funds and approval of action plans (87.50%), difficulty in collection of 10% contribution from farmers (85.00%), insufficient allotment of funds (81.25%) , no convergence among line departments in planning and implementation and step mother treatment in funds allocation (75.00%)were expressed by the extension functionaries.

4.7.4. Suggestions given by the Extension functionaries in implementation of reforms

At the end of the interview, the extension functionaries were requested to offer their suggestions to overcome the problems in process implementation of extension reforms. Their suggestions were presented in Table4. 37 with frequencies, percentages and ranks, assigned based on their magnitude

Table 4.37. Suggestions given by the Extension functionaries to overcome the problems in implementation of reforms (n=80)

S. No	Suggestions	Frequency	Percentage	Rank
1.	Separate staff i.e. PD and supporting staff for ATMA	76	95.00	II
2.	District level CIGs may be encouraged	75	93.75	III
3.	Early approval of action plans and release of funds	77	96.25	I
4.	Conducting of AMC and GB meetings regularly	73	91.25	IV
5.	Provision for decentralisation of decisions	65	81.25	VII
6.	Timely supply of guidelines for trainings and exposure visits	68	85.00	VI
7.	District level trainings to block level officers about extension reforms	70	87.50	V
8.	Supply of CDs on location specific technologies	68	85.00	VI
9.	Provision of honorarium, TA,DA to farmer members of ATMA committees for attending meetings	63	78.75	VIII
10.	Timely information about ATMA programmes to be organised	56	70.00	IX

It is evident from the table 4.37 that majority of the Extension functionaries suggested early approval of action plans and release of funds (96.25%) as the first suggestion followed by separate staff i.e. PD and supporting staff for ATMA (95.00%), district level CIGs may be encouraged (93.75%), conducting of AMC and GB meetings regularly (91.25%), district level trainings to block level officers about extension reforms (87.5%), timely supply of guidelines for trainings and exposure visits (85.00%),supply of CDs on location specific technologies (85.00%), provision for decentralisation of decisions (81.25%),provision of honorarium, TA& DA to members of ATMA committees for attending meetings (78.75%) and timely information about ATMA programmes to be organised (70.00%). Ranks were assigned based on magnitude.

4.8. Innovative activities undertaken in ATMA

4.38. Table showing the innovative activities undertaken :

S. No.	Name of the District	Activities
1	Adilabad	Promotion of vermicompost Promoting backyard poultry Advanced organic techniques Farm mechanization Value addition to soyabean Establishing vermi hatcheries
2	Chittoor	Introduction of new fodder varieties Introduction of mechanical milking machines Introduction of urea treated grass Children’s awareness programme in agriculture Parthenium eradication programme Integrated farming approach
3	Kurnool	Testing yield potentialities of groundnut varieties Introduction of maize Introduction of Soyabean by KVK Promotion of medicinal plants Hello ATMA programme Introduction of green fodder
4	Prakasam	Popularization of bio- fertilizers Introduction of sweat corn varieties of maize Introduction of new fodder varieties Organic paddy cultivation Crop diversification

4.9. Process implementation of ATMA in the districts

A brief information pertaining t the various innovative activities undertaken by ATMA in the selected districts were given herewith.

Kurnool

- NGO KVK worked in strong convergence with department of agriculture and organised multifarious activities.
- ATMA facilitated CIGs based on the crops grown, but they need to be further strengthened.

- Convergence with KVK is excellent activities like on farm trials for dissemination of agricultural technologies and new varieties have been implemented by KVK, Banganapalli in the farmers fields.
- In convergence with Krishi Vigyan Kendra, Kurnool promoting activities like Neem seed pounding, organic farming and cultivation of medicinal plants.
- FIACs were formed but FAC and BTT meetings were not being organized regularly.

Adilabad

- At district level, all the line departments, KVKs, DAATTC and ARS were undertaken ATMA activities.
- Though there was no convergence at planning level by all the line departments and stakeholders, the activities were proposed under ATMA department wise and after receiving the funds, those activities were accomplished as per the proposals.
- Adilabad is a unique district which has very good infrastructure such as ATMA building and FIAC centre with operational furniture with the efforts of the then collector Mr. Sukumar, IAS, during 2007-08.
- It is informed that group meetings were held once in three months and reviewed the progress of the ATMA activities. However, monthly meetings were conducted with agricultural department officer who were involved in ATMA activities but not the line departments and the SAU centres.
- It is observed that no orientation to FAC members about ATMA activities and their role in ATMA either by the agricultural departments or stake holders. It is most important issue, as FAC has to identify their villages, needs and incorporate in block level action plans.
- Group activities are not that strong as mentioned in the guidelines. Therefore there is a need to sensitize and motivate all the ATMA officers to address group needs.
- Whatever benefits extended to the beneficiaries under ATMA through Agriculture and Animal Husbandry, they were extended to individuals rather than group member. It is better to provide individuals of a group or to the groups for popularizing the technologies / enterprises.
- Activities which are general in nature i.e., training programmes, demonstrations, farmer scientist interaction, kisan melas, Farmer Field days exposure visits, etc, were done by agriculture and allied departments and SAUs centres under

ATMA, but there was not much efforts taken for follow up of the above activities.

- It is also reported by FAC member that there might be more encouragement, if FACs are provided with TA/DA, whenever they were attending FAC meetings
- Few officers also urged that there would have been treasury system in finance release.
- Staffs who are working in ATMA given capacity building in ATMA guidelines processes and implementation arrangements and also exposure visits to within the state/outside that states for gaining direct experience from their fellow officers.
- During 2009-10, the funds allocated for farm school were utilized for capacity building of progressive farmers. Only line departments who were conducted few (maximum of 4) schools during the period under report

Chittoor

- Innovative activities like clean milk production, fodder cultivation, parthenium eradication, promotion of agricultural technologies through school children were undertaken.
- Organic farming was promoted through application of Bio fertilizers and Bio pesticides .
- Farmers and farmwomen in the district have been encouraged to form into CIGs and undertake orchard crops and fodder cultivation.
- Different departments showed excellent response along with RASS, KVK, DAATC indicating good convergence
- Further more, an important observation was that on an average, yield and income increased by 30% for zero tillage technologies and organic agriculture in various crops.
- Other innovative activities and crop diversification were also observed.

Prakasam

- Scientists of DAATC, ARS, KVK, farmers, NGOs and extension workers worked in strong convergence which helped to undertake many activities under the ATMA model.
- Organic farming was a prioritised area under ATMA in the district, Many FFS were organized to promote it.

- Under ATMA component of mass media awareness was created on ICT & knowledge kiosks through trainings.
- ATMA convergence also promoted new methods and varieties of mulberry cultivation and silk worm rearing.
- In addition to the regular activities a number of innovative activities like zero tillage maize, promotion of soya bean, soil testing technologies, milking machines, new animal feeds, red gram transplantation, direct sowing in paddy, etc were undertaken.

4.9.1 Processes followed in Implementation as compared to prescribed under The Scheme

A brief report on implementation status of processes as prescribed in guidelines was given here under in table 4.39

4.39. The implementation of process as compared to prescribed process

S. No.	Process prescribed under the Reforms	Process followed in implementation
1.	Formation of CIGs / FIGs	Adopting group approach to extension in line with the identified needs and requirements of the farmers in the form of CIGs and FIGs. CIGs should be promoted for all major commodities. They should meet once in a month to discuss the activities and future course of action. As per the guidelines of ATMA group approach was followed and formed CIGs based upon the commodities they are producing in some districts. Still there is a need for further strengthening of groups through various capacity building activities like exposure visits and intensive training programmes.
2.	Bottom up planning	Providing innovative, restructured and autonomous institutions at the state/ district/block level. Though the guidelines of ATMA emphasizing on ensuring bottom of planning by involving the stake holders at grass root level, in some of the district it is observed that the majority of the officers were not

		oriented on preparation of strategic research and extension plans for implementation of activities as per the needs of the stake holders still there is an need for educating stake holders at all levels regarding the importance of bottom of planning for ensuring peoples participation. Physical structures of FIAC were constructed in all the districts but were not utilized for the purpose intended.
3.	Decentralised and flexible decision making	Ensuring decentralized and flexible decision making through involving stake holders at all levels in the implementation of the programme. More numbers of training and capacity building activities need to be planned and implemented for ensuring decentralized and flexible decision making through involving stake holder at all levels.
4.	Decentralised multi agency and flexible implementation system	In order to ensure promotion of multiagency extension strategies, and to implement scheme activities in Public Private Partnership mode. A minimum 10% of scheme allocation on recurring activities at district level is to be incurred through NGO sector Viz. NGOs, Fos, cooperatives, para-extension workers, agriprenuers, input suppliers, corporate sector etc. Contribution in the form of cash or kind through NGOs, FOs, Cooperatives, Para Extension workers, Agri-entrepreneurs was observed in none of the districts. To ensure promotion of multi agency extension strategies there is an need to orient the agencies converging with ATMA regarding the importance of ten percent contribution to involve them in the process of implementation.
5.	Farmers empowerment in planning, decision making, implementation	Empowering farmers through planning various capacity building activities like

	etc.	training cum exposure visits to district, inter district and state level organizations. The districts organized district and inter district training cum exposure visits to empower farmers regarding various innovative technologies. Still there is an need to increase the number of training cum visits to other states to observe the success cases and visit various organizations related to their livelihood and felt needs.
6.	Farmer to farmer extension	Encouraging farmers to adopt innovative technologies by adopting farmer led extension approaches like farmers schools. Farm schools were organized in the name of ATMA Polambadi at ADA blocks in the districts and along with the technical inputs the farmers should be supported with proper guidance and training on various elements of conducting farm schools to facilitate farmer led extension.
7.	Coverage of women farmers	Addressing gender concerns by mobilizing farm women into groups and providing training to them. In some of the districts commodity interest groups were formed exclusively by involving farm women in the name of women interest groups. But the participation of women in training programmes and exposure visits cum FFS was relatively less when compared to participation of men. So, there is an urgent need to mainstreaming of gender in ATMA activities to ensure the participation of women.
8.	REF linkages	The scheme for extension reforms provides for active involvement of Research System/ Research Agencies at different levels of implementation. State Agricultural Universities (SAUs) and Krsihi Vigyan Kendras (KVKs) have to be fully involved not only in preparation of SREP and

		extension work plans but also in implementation of various programmes in the field. They will be represented in all bodies, namely, ATMA GB and ATMA MC in districts, SLSC / IDWGs at state level, BTT-FAC meetings at block level and in the policy committee at the national level. The participation of research and extension organizations in ATMA activities was observed in some of the districts in conducting training programmes. But there participation in planning and implementation of ATMA programme was found negligible in majority of the districts. As per the guidelines of ATMA state extension and research units should not only involve in the preparation of SREP but also in the implementation of ATMA programme. To strengthen the REF linkages there is a need to reorient the entire process of implementation of ATMA regarding their roles and responsibilities of various organizations involved in agricultural development.
9.	Group approach to extension	To bring the sustainable development among farming community group approaches to be followed for training, capacity building and empowering them. Participatory methods need to be adopted to strengthen and institutionalize various community based organizations and building their capacities.
10.	Farming systems approach	Ensuring an integrated, broad-based extension delivery mechanism consistent with farming system approach. In some of the districts it was observed that farming systems approach was being

		encouraged for enhancement of productivity and livelihood promotion of farmers. More numbers of convergence activities need to be taken up with coordination of various agricultural and allied departments.
11.	Convergence of extension activities	There should be full convergence of extension related work being carried out under different programmes/schemes. The field level extension workers under these different programmes/schemes should work in conjunction with the dedicated manpower being provided under this scheme under the umbrella of BTT or ATMA. Convergence of extension activities was at initial stage in all the districts. More number of convergence workshops among agricultural and allied sectors need to be conducted at various levels in the district and officers should be oriented about guidelines of modified extension reforms under ATMA and the importance of convergence of various departments involved in agricultural development.
12.	Public private partnerships	Through encouraging multi agency extension strategies involving public private extension service providers. Very few PPP initiatives were observed under ATMA in the districts. It is also observed that many of the officers were not oriented about implementation of PPPs under ATMA. Hence there is an need for capacity building of officers on new dimensions in extension.
13.	Sustainability of extension services	Sustainability of the extension services should be ensured through promotion of Agriprenuers, Farm schools and farmer field concept. Farm schools were organized in districts with

		ATMA funds but more number of agri-entrepreneurs should be promoted for the sustainability of extension activities.
14.	Implementation of innovative activities	Under ATMA innovative activities need to be planned and implemented for encouraging new enterprises and livelihood activities. In districts innovative activities were planned and implemented related to various crops and technologies based on the needs of the district. There is an need to strengthen the REF linkages for identification planning and implementation of innovative activities.



SUMMARY

Chapter V

SUMMARY AND CONCLUSIONS

Agriculture continues to be the predominant source of livelihood for almost 60% of the population - both at the National level and at the State level. With the 11th Five Year Plan's target of achieving 4% growth in Agriculture during the Plan period and with the objective of shifting a sizable excess labour force from the agriculture sector to other non-farm rural sectors- especially to rural industry through skill development, the obvious choice would be improvement of productivity in the agriculture sector. Ensuring food security and providing gainful employment to the labour force, has been the essential premise for the socio economic development of the people.

Public sector extension is a state responsibility, that has undergone several transformations since Independence. Initially the focus was on human and community development with the policy frame work of food security there has been a steady progression towards technology transfer. The most significant development was the introduction of the training and visit (T&V) extension management system, in the mid seventies T&V extension was well suited to the rapid dissemination of broad based crop management practices for the high yielding wheat and rice varieties released since the mid-sixties. Given this focus on disseminating Green Revolution technology for major cereal crops, extension activities have been largely carried out by state department of agriculture , other line departments like animal husbandry , horticulture and fisheries have primarily focused on the provision of subsidized inputs and services to farmers, with little attention and few resources being allocated to extension.

Limitations of the present agricultural Technology System (ATS):

- The existing research and extension system is largely top-down in nature.
- The present feedback system is very weak.
- Farmers have not only technological but also other needs namely inputs, credit, marketing, social facilitation for group action etc.

Which public sector alone is not able to meet all these needs in an effective manner . In an effort to increase the impact of extension on agricultural and pro-poor growth in developing countries, public-sector agricultural extension

systems around the globe are implementing reforms that include demand-driven and decentralized approaches. Such reforms attempt to increase the accountability of agricultural extension staff to their clients (the farmers) and increase the relevance of extension activities. India is no exception to these trends and has implemented a number of programs to revitalize the public-sector agricultural extension system in the last decade. One such initiative is a central project called Agricultural Technology Management Agency (ATMA).

Reforms in India were pilot tested in 28 Districts of 7 States under Innovations in Technology Dissemination (ITD) component of World Bank funded National Agricultural Technology Project (NATP) during the period from November, 1998 to April, 2005. This successful experiment served as a basis to launch the Scheme “*Support to State Extension Programmes for Extension Reforms*” in its first phase since 2005-06. The Scheme was later up-scaled to 252 districts during the 10th Plan subsequently extended to 12th plan.

ATMA represents a platform for integrating extension programs across line departments, such as animal husbandry, fisheries, and forestry; linking research and extension units in a district; and inviting farmer participation in decision making (Swanson 2008). Extension intervention is based on the Strategic Research and Extension Plan (SREP) prepared after a Participatory Rural Appraisal (PRA) in each district. The Farm Information and Advisory Centre (FIAC) is the physical platform at the block level where farmers, members of the private sector, and extension field staff members from each line department meet to discuss, plan, and execute extension programmes. The block technology team includes technical officers from various line departments and consults with the Farmer Advisory Committee (FAC), which includes the heads of farmer interest groups (FIGs), at the FIAC to develop a block action plan. The block action plan is then approved for funding by the ATMA governing board (Singh and Swanson 2006). The FIGs and SHGs can be formed by local NGOs and then organized into producer groups by extension staff. In the first year of operation, the capacity of the groups is built through awareness campaigns, exposure visits, and training courses (Mishra and Swanson 2009). Each state has a SAMETI (State Agricultural Management and Extension Training Institute), whose mandate is to strengthen the capacity of mid-level and frontline extension staff and orient them to the ATMA scheme.

Since inception of the scheme in 2005-06 to January 2011, Over 1,40,97,347 farmers including 34,54,312 farm women (24.50%) have participated in farmer oriented activities like exposure visits, trainings, demonstrations & kisan melas, more than 64,343 Commodity based Farmer Interest Groups (CIGs) have so far been mobilized under the scheme and over 20,602 Farm Schools have been set-up on the fields of outstanding farmers (Ministry of Agri., 2011).

The major process involved in Extension reforms (ATMA) are as follows;

- Bottom up planning
- Decentralised and flexible decision making and implementation system
- Farmers empowerment
- Farmer to farmer extension
- Extension through women farmers
- Research-Extension-Farmer linkages
- Group approach to extension
- Farming systems approach
- Multi – agency extension system including Public Private Partnership (PPP)
- Sustainability of extension services

The effectiveness of any programme depends on the way of its implementation . Hence the present study was conducted with the objective to assess the extent of process implementation of Reforms i.e. Agricultural Technology Management Agency (ATMA) in Andhra Pradesh.

Objectives of the study

1. To study the profile of sample respondents.
2. To measure attitude of farmers and extension functionaries towards extension reforms.
3. To find out the extent of crop diversification and intensification by the farmers.
4. To find out the extent of convergence and linkage mechanisms in implementation of activities in gap filling mode.
5. To study the functioning of group led extension and the extent of decentralised decision making.

6. To find out the relationship between the profile of respondents and extent of process implementation of reforms through ATMA
7. To unearth constraints and solutions for effective functioning of ATMA

Methodology

The state of Andhra Pradesh was selected for the study. Among the 24 districts in AP four districts namely Adilabad, Kurnool, Chittoor and Prakasam districts were purposively selected in which the extension reforms (ATMA) were pilot tested (1998-2005) and are being in operation.

An Ex Post Facto research design with random sampling procedure was adopted and was employed during the course of investigation. Four blocks from each district were randomly selected thus making a total of sixteen blocks. For this purpose in each district the farmers lists of ATMA members and beneficiaries were obtained from the department of Agriculture. From these lists 60 farmers from each district who were the members of different bodies such as Farmer Advisory Committee (FAC), Governing board, Commodity Interest groups (CIGs), Farmer Interest Groups (FIGs) and other groups through which ATMA activities are being carried out were randomly selected for the study thus making a total of 240 farmers.

Extension Functionaries who were involved in ATMA activities were selected randomly from the four districts. From each district 20 extension functionaries were selected thus making a total of 80.

The variables selected for the study were Independent variables age, education, farm size, extension contacts, social participation, risk orientation, Economic motivation. Capacity building, decision making, group led extension, linkage mechanisms, women participation, farmer to farmer extension, bottom up planning, coordination, attitude, convergence, crop and enterprise intensification and Crop and enterprise diversification were the dependent variables.

The data was collected with a well structured interview schedule through personnel interviews and focused group discussions. The data was analysed by using appropriate statistical tools such as frequency, percentage, mean, standard deviation and correlation.

Research findings

In consonance with the objectives of the study, the major findings were given below

1. The profile of the farmers indicated that Majority (77.08%) of the total sample of respondents belonged to middle aged group, with Intermediate education (29.58%) having 6 to 10 acres of land (54.17%) with medium extension contacts(77.92%) ,social participation(69.58%)and economic motivation(65.00%) .

Middle aged people were more attracted to developmental programmes and Government giving more preference to middle aged people while selecting for the programmes like Adarsha Rytus . Now a days the government is giving preference for those who had minimum high school education while selection of beneficiaries for the programmes. The medium and large farmers were assumed innovative, risk prone having more economic orientation ,and also interested for getting recognition along with monetary benefits. Realizing these elements and recognizing the social leadership possessed by the individuals most of the extension functionaries generally concentrates in selecting medium and large farmers as their contact persons for the programmes. The respondents were having membership in more than one organizations including CIGs and FIGs and they were participating in the meetings of their groups and ATMA meetings regularly and in other meetings whenever time permits and were contributing towards framing the resolutions

2. The profile of the extension functionaries of Chittoor, Adilabad, Kurnool and Prakasam districts showed that majority had 36-58 years age (75.00%) with an educational qualification of post graduation and above (57.50%) with service experience of 11-20years(58.75%) .

3. The study indicated that among the farmers respondents (68.75 %) had favourable attitude towards extension reforms followed by highly favourable attitude (21.25 %) and unfavourable attitude (10.00%).The extension functionaries of Chittoor, Adilabad, Kurnool and Prakasam districts were having favourable attitude (75.00%) towards extension reforms followed by highly favourable attitude (13.75%) .

It seems that the farmers were convinced with the benefits of new institutional arrangements, broad based extension services, multi agency extension approaches and incentives to the farmers in the form of rewards rendered through extension reforms

they were highly dissatisfied with the way of implementation of convergence of line departments ,group approaches and other aspects.

4. Crop and enterprise intensification among the total sample of ATMA respondents was at medium level (59.16%) followed by high (34.17%) level of intensification .

The major activities taken up under crop intensification were growing of high yielding varieties of existing crops such as rice, grapes, maize, jowar, redgram, vegetables and fodder crops. They had also gone for implementation of improved production technologies such as Integrated Nutrient Management, Integrated Pest Management, farm mechanization , water saving technologies at convenient locations. The respondents had gone for growing of leguminous crops like green gram, black gram and soya bean utilizing early showers of monsoon to get additional income and in addition to improving soil fertility status in Kurnool district. Enterprise intensification was taken up through production of organic fertilizers . Diary enterprise was intensified by introduction of milking machines, chaff cutters, high yielding varieties of fodder crops improved breeds of animals, production and feeding of Azolla to livestock. In sericulture bivoltine rearing of silk worms and introduction of disease resistant races was taken up.

5. In extension reforms crop and enterprise diversification was found at medium level (48.33%) followed by high diversification (35.83%) and 15.83 per cent had low crop and enterprise diversification.

The specific enterprises taken up were dairying, value addition to mango, sericulture in Chittoor district. Establishment of compost preparation units, value addition to soya products in Adilabad. Value addition to banana in Kurnool district. Under crop diversification the respondents had gone for Zero tillage maize, Bengal gram, redgram, cluster bean cabbage , cauliflower, potato, rainfed tomato, drumstick and medicinal plants like Aswagandha in the possible areas.

6.. The study revealed that 60.00% of the farmer respondents had expressed moderate level of convergence in ATMA activities followed by weak (25.00%) and strong (15.00%) levels of convergence. In view of extension functionaries the convergence in activities of extension reforms was at moderate level (67.50%) followed by weak (17.50%) convergence.

The convergence was at moderate level because the action plans were prepared and implemented individually and pooled at block level. Only few programmes were

implemented depending upon funds allocation. Only few suggestions of FAC were included in the plans. Convergence with research institutes and private agencies was also at moderate level. Out sourcing of experts was not observed in all the districts.

The officers of department of agriculture and line departments expressed that there was convergence in planning part only but the convergence was very weak in funding and implementation stages due to meagre and un timely allotment of funds for the plans proposed by line departments

7. The linkage mechanisms were at moderate level (47.50%) followed by strong (33.75%) and poor linkages (18.75%). Though the programmes were planned independently, they were pooled up at FAC level and mostly linkages were maintained in promotion of value added products and high yielding varieties of crops. Involvement of NABARD and other government agencies, public private partnership in ATMA activities was poor. Market linkage (buy back mechanism) with Mother Charity Organization , Chittoor had made the resource poor farmers to diversify their dry land crops to cluster bean in 1000 acres.

Extension functionaries expressed that the linkage mechanisms were at moderate level (63.75%) followed by strong (18.75%) linkages. They expressed that the linkages were maintained mostly during organization of rytusadassus, kissan melas, exhibitions and FSI meetings. The stake holders were organizing demonstrations in their mother department budgets with regular action plans and the same were shown again under ATMA also.

8. The coordination was poor (50.83%) followed by moderate (31.25%) and good (17.92%) coordination .

Moderate levels of convergence and linkage mechanisms among the stake holders lead to poor coordination in providing information and services to the farmers at base level. Coordination was observed in between departments of agriculture and line departments to some extent. The coordination was at low level with marketing wing and other government , non government organizations.

Extension functionaries expressed that the coordination in activities of extension reforms was poor (45.00%) followed by moderate (32.50%) and good (22.50%) coordination.

The reasons for this trend of results were busy schedule of the officers of line departments, frequent transfers and hierarchal problems for maintaining mutual relationships.

9. Group led extension in extension reforms was medium (72.50%) followed by high (17.50%) and low levels (10.00%). The regular participation of farmers was observed only in trainings, exposure visits and in other programmes the participation was low because basically no new groups were promoted under extension reforms. Only few groups on soya bean, red gram, cotton were formed in Adilabad, banana group in Kurnool, Mango, organic farming groups in Chittoor district were vital. .

The respondents expressed that due to membership in groups they were able to represent problems, getting latest technical information, got provision for large scale demonstration of new technologies and machinery. The spread of information was mostly 10-15 members followed by more than 15 members on new production technologies, organic farming followed by value addition by the trained members.

Extension functionaries expressed that the group led extension was at medium level (56.25%) followed by high level (26.25%) in places where already existing groups were strong.

10. Capacity building in extension reforms was medium (68.75%) followed by high (22.5%) and low (8.75%) levels of capacity building .

Extension functionaries expressed that the capacity building in activities of extension reforms was medium (67.50%) followed by high (20.00%) capacity building.

. As a result of moderate convergence and poor coordination among the stakeholders only traditional trainings on improved production technologies, inter & intra district exposure visits and a few interstate visits were organized with the available farmers for the name sake in short notice of time. For extension officers also capacity building was done at divisional level only. The block level officers were not aware of the extension reforms and the processes.

11. Women participation was at medium level (67.08%) followed by high(23.33%) and low (9.58%) levels of participation. Extension functionaries expressed that the women participation in activities of extension reforms was at medium level (65.00%) followed by high level (17.50%).

The reasons were that no special women groups were formed under ATMA and only 2 to 3 members were included in FAC,MC and no women members were included in FFS. But the officials tapping the already existing DWACRA groups, Mandal Samakhayas while organizing programmes.

12. The decision making by the stake holders in activities of extension reforms was at medium level (68.75%) followed by high and low levels of decision making (19.17%, 12.08%) respectively.

Though the objective was to promote decentralized decision making it was only up to medium level as the plans were prepared by the officials without the involvement of farmers groups at block level and after discussion in FAC meeting few suggestions/priorities of farmer members were included in Annual action plans.

13. Farmer to farmer extension on the whole was at medium level (58.75%) followed by low level (34.58%) of farmer to farmer extension.

The reasons were that FFS were organized on routine production technologies without proper curriculum. The documentation and publicizing of successful activities were poor. Farmer groups were also not formed at village level.

14. Bottom up planning was at low level. This was due to the reason that need assessment and prioritization was not done by FACs, as the meetings were not organized properly as per schedule in most of the BTTs. As the members were changed after a particular period of 5 years. Capacity building on processes of reforms was not done to this new group. At officers level also the awareness about processes of reforms was poor.

15..Decentralized decision making in process implementation of extension reforms was positively correlated with the age ,education, land possession and extension contacts at 1per cent level of probability, Social participation was correlated at 5per cent level of probability with the decentralized decision making.

16. Capacity building was found non significant with profile characters age , education, land possession ,extension contacts ,Social participation , risk orientation and economic motivation.

Because in capacity building routine well known technologies were covered without any innovative, market and credit oriented items which were the need of the hour.

17. It was found that age, education, land possession, extension contacts and economic motivation were correlated at 1per cent level of probability. Where as risk orientation was correlated at 5per cent level of probability with the group led extension in process implementation of extension reforms.

Age, education, land possession, extension contacts and risk orientation were positively correlated with group led extension since higher side of these characters will make the individuals to think logically and realize the importance of group activities in reaping the benefits of reforms.

18.Among the profile characters age ,education, land possession ,economic motivation , extension contacts and risk orientation were found correlated at 1per cent level of probability with the convergence in process implementation of extension reforms.

19. It was found that linkage mechanisms were found positively correlated with age, education, land possession, economic motivation and extension contacts at 1per cent level of probability, social participation at 5per cent level of probability.

20.Coordination was found positively correlated with the profile characters age, education, land possession ,economic motivation , extension contacts and risk orientation at 1per cent level of probability in process implementation of extension reforms.

21. It was found that the attitude was positively correlated with age , education , land possession ,extension contacts, risk orientation and economic motivation at 1per cent level of probability.

22. The constraints elucidated by the farmers in order of priority were that lack of information about programmes in advance (95.83%), unavailability of internet and communication facilities at FIAC (95.41%), irregularity in organization of meetings (93.33%), irregularity in participation of officials in FAC meetings (91.67%), lack of permanent staff (90.84%), preparation of action plans on their own by officials(89.58%), late preparation and approval of action plans (85.83%) and in sufficient funds (81.66%)

23. The constraints enlisted by the extension functionaries in order of priority were assignment of non agricultural works to the officers (95.00%), shortage of departmental staff (93.75%), difficulty in formation of FIGs/CIGs at village level (92.50%), no facilities for mobility of staff at block level (91.25%), no advance information regarding programmes to be organized (90.00%), untimely release of funds and approval of

action plans (87.50%), difficulty in collection of 10% contribution from farmers (85.00%), insufficient allotment of funds (81.25%) , no convergence among line departments in planning and implementation and step mother treatment in funds allocation (75.00%)

24. Suggestions given by the farmers were providing timely information about ATMA programmes (97.91%) as the first suggestion followed by conducting of ATMA meetings regularly (95.83%), approval of action plans to be done at the district level itself (93.34%), action plans to be prepared with the convergence of farmers members also (91.67%), timely release of funds and approval of action plans, separate staff i.e. PD and supporting staff for ATMA (87.5%) , updating of FIAC (85.41%), promotion of mechanization (83.34%,) , organization of more exposure visits (79.16%), promotion of organic farming (75.00%) and provision of honorarium to members of ATMA committees for attending meetings (72.91%).

25. Suggestions given by the extension functionaries were early approval of action plans and release of funds (96.25%) as the first suggestion followed by separate staff i.e. PD and supporting staff for ATMA (95.00%), district level CIGs may be encouraged (93.75%), conducting of AMC and GB meetings regularly (91.25%), district level trainings to block level officers about extension reforms (87.5%) , timely supply of guidelines for trainings and exposure visits (85.00%), supply of CDs on location specific technologies (85.00%,),provision for decentralization of decisions (81.25%),provision of honorarium, TA, DA to members of ATMA committees for attending meetings (78.75%) and timely information about ATMA programmes to be organized (70.00%).

5.4. Implications and recommendations of the study

The salient conclusions drawn along with the potential implications of the study were summarized which would serve as pace setter for future endeavours, researchers and extension workers. Hence an attempt was made to document the implications of the present study, mostly in nature of suggesting some changes so as to improve the process implementation of extension reforms.

1. The study indicated that farmers and extension functionaries were having favourable attitude towards extension reforms followed by highly favourable and unfavourable attitude. This shows that they were having favourable attitude towards the process involved and not satisfied with the implementation status of institutional arrangements, bottom up planning and flexible decision making and implementation systems though

the project was in implementation since a decade. The policy makers should take into consideration that the attitude of individuals plays major role for the success or failure of the programme. Hence efforts must be directed towards capacity building and creating awareness about processes of reforms among stake holders which will help to make them to move towards higher continuum of attitude towards reforms.

2. The study revealed that crop and enterprise intensification and diversification were at medium level . In order to improve the situation the policy makers should concentrate on analyzing the successful examples of new enterprises plenty of which were identified by the scientists for each agro climatic zone so that these can be replicated in the similar situations at a faster rate.

3. The results of the study projected that the convergence and linkage mechanisms in ATMA were at moderate level. The coordination was poor. In order to strengthen these components there is need to identify appropriate organizations to meet specific needs of farmers such as quality inputs, credit, marketing, social facilitation for group action based upon their comparative advantages to farmers, also there was a need to integrate various sources of innovations and extension methods in such a manner that they provide a proper synergetic effect.

The policy makers may direct the stakeholders of ATMA to develop and include Research-Extension plans for every ecological zone have to be included in action plans to cope up with local constraints and also to make FSBE more fruitful.

4.The study results projected that bottom up planning was at low level. The administrators must concentrate on strengthening and capacity building of base level institutions such as FIGs/CIGs and also should encourage the stakeholders to participate in block action plans preparation and flexibility in planning was also to be operationalised by incorporating the need based programmes suggested by the members of the FAC.

5. The results of the study inferred that Farmer to Farmer extension and group led extension were at medium level. The efforts must be directed to improve FFE by organizing more number of FFS to CIG members with well planned programme /course curriculum on identified cost reduction technologies of crops, promoting /strengthening of groups and motivating them to participate in action plans preparation.

6. It was projected from the study that women participation was at moderate level. The administrators should concentrate on promotion of women CIGs and also equip them

about value addition, promotion of value chains through market linkages which will lead to entrepreneurship development.

7. The results of the study denoted that capacity building was at moderate level. The administrators should concentrate on conducting of more number of capacity building programmes on processes and objectives of extension reforms to stake holders right from village and block level. The result shows the need for organization of more number of exposure visits to successful project areas located either at interstates , inter districts for easy and quick replication of them at different locations.

8. It can also be inferred that the decision making was at medium level , as the groups were not evolved at village level and priority was not given to the expressed needs of farmers. This result shows the direction to the policy makers to instruct the officials to put more efforts to evolve and perpetuate the groups and also on decentralization of decision making in order to meet the objective of development of demand driven, situation specific and multi actor oriented programmes to accelerate agricultural development in the project districts.

9. The constraints enlisted and suggestions given by the stakeholders in the present study will not only serve as an indicator of prevailing condition but will help the policy makers and administrators to modify the present guidelines for successful implementation of the programme.

5.5 Suggestions for future research

1. The study was conducted in the pilot launched four districts. Similar studies may be conducted taking one district from different phases of implementation in Andhra Pradesh and also across the country.

2. Elaborative studies may be conducted on implementation status of each process of extension reform along with impact within a single district of the State.

3. Similar studies may be conducted in all the States to have a comparative picture of process implementation status.

4. Case studies may be documented for future reference.

5. Similar study may be conducted exclusively for extension functionaries.

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APPENDICES

ATMA Institutional arrangements



Interaction with Respondents



Interaction with Extension Functionaries



Profile characteristics of respondents:
Code No.: Village: Mandal: District:

1	Name of the farmer :
2	Age :
3	Education : a) Illiterate b) Functionally literate c) Primary school d) High school e) Intermediate f) Graduation
4	Land holding in acres : Dry Irrigated Garden Any other Total

5. Extension contact :

Please indicate how frequently are you meeting the following officers in connection of agriculture and allied departments related activities

Sl No.	Officer Categories	Frequency of contacts			
		Weekly	Fortnightly	Monthly	Whenever need arises.
1.	Department of Agriculture				
2.	Department of Horticulture				
3.	Department of Animal Husbandry				
4.	Department of Fisheries				
5.	Department of Marketing				
6.	Scientists of ANGRAU				
7.	Others(specify) BTT/FIAC/FAC members				

b) Information sources:

Please indicate the information sources (Formal and Informal) from which you are getting agricultural and allied information

Sl No.	Information sources	Regularly	Occasionally	Rarely
1.	Printed materials of department of agriculture and line departments.			
2.	Radio			
3.	Television			
4.	Recorded cassettes			
5.	News papers			
6.	FIGs / CIGs			
7.	Input agencies			
8.	Neighbors / friends/ co farmers			

c) Extension participation:

Please indicate how frequently are you participating in the following meetings:

Sl. No.	Activities	Frequency of participation		
		Regularly	Occasionally	Never
1.	Meetings/ seminars/ work shops			
2.	Study tours/Field days			
3.	Demonstrations			
4.	Kisan Ghostis			
5.	Group discussions			
6.	FSI meetings			
7.	Any other specify			

6. Social Participation: Please indicate your membership and frequency of participation in social organizations:

Sl. No.	Organisation	Member	Frequency of participation		
			Regularly	Sometimes	Never
1.	Panchayat				
2.	Co- operative Society				
3.	Rytumitra group				
4.	Commodity Interest Group				
5.	Farmers Interest Group				
6.	Block Technology Team				
7.	ATMA Management Committee				
8.	ATMA Governing Board				
9.	Farmers Information Advisory Committee				
10.	Farmers Field School				

7. Risk orientation: Please indicate your agreement or disagreement by tick marking in the columns given below:

Sl.No.	Statements	A	UD	DA
1.	A farmer should grow more crops / adopt cropping systems to avoid greater risks involved in growing one or two crops.			
2.	A farmer should rather take more chances in making a big profit than to be content with a smaller but less risky profit.			
3.	A farmer who is willing to take greater risks than average farmers usually does financially better.			
4.	It is good for a farmer to take risks when he knows his chance of success is fairly high.			
5.	It is better for a farmer not to try new farming methods unless most others have used them with success.			
6.	Trying an entirely new practice in farming by a farmer involves risk but it is worthy.			
7.	One who practice crop diversification ensures minimum income even under unfavorable climatic conditions.			
8.	One cannot take risk in practicing new technologies only by convincing with a demonstration.			

A-Agree

UD- Undecided

DA- disagree

8. Economic motivation:

Please indicate your agreement or disagreement by tick marking in the columns given below :

Sl.No	Statements	A	UD	DA
1.	A farmer should try the new ideas which may help him to earn more money.			
2.	The most successful farmer is one who makes more profits out of his farming.			
3.	A farmer should go for crop intensification and crop diversification to increase their incomes instead of a single crop .			
4.	It is difficult for the farmers children to make good start unless he provides them with economic assistance.			
5.	A farmer must earn for his living but everything in life cannot be measured in economic terms.			
6.	A farmer should go for preparation of value added produce instead of mere production of crop to gain more profits.			
7.	It is important for the farmer to have a good harvest in order to be able to buy many things besides food.			
8.	Farmers get better price and benefits if they market the produce through commodity groups.			

A-Agree UD- Undecided DA- disagree

9. Decision making pattern :

Please indicate your agreement by tick marking in the columns given below :

1. Independently 2. Jointly 3. After consulting with others

Sl. No.	Activities	Independently	Jointly	After consulting with others
1	Introducing new crop/variety			
2	Introducing new technology			
3	Adopting new farming systems			
4	Adopting new cropping systems			
5	Post harvest handling of produce			
6	Marketing produce			
7	Maintaining membership in different groups			
8	Planning block level/ district level Action plans			
9	Implementation of different components of plans			

b.How do you take decisions in planning and implementation of action plans?

SL. No.	Activity	Self	In consultation with co members	Others
1	Planning			
2	Implimenting			
3	Selecting in from different options			

10. Capacity building : Have you participated / under went training in any of the programmes given below. Are the following programmes helped you in increasing your knowledge

Sl.No	Activity	Yes	No
1	FFS		
2	FLDs		
3	Group discussions		
4	Exposure visits		
5	Study tours		
6	Inter district tours		
7	Inter State tours		

b. Trainings programmes underwent

Sl.No	Name of the training	Yes	No	No. of days
1.	New production technologies			
2.	Communication skills& leadership development			
3.	Organic farming			
4.	Post harvest handling of farm produce			
5.	Marketing information			
6.	Programme planning and implementation			
7.	Farm mechanisation			
8.	Agro based Industries			

11. Women participation : Please give your opinion about women participation in ATMA programmes:

Sl.No.	Activity	Yes	No
1	Are women members are there in Block Technology Team		
2	Are women members are there in Governing Board		
3	Are women members are there in ATMA Management Committee		
4	Are women members are there in Farmers Advisory Committee		
5	Are women members are there in Farmers Interest Group		
6	Are women members are there in Commodity Interest Group?		
7	Are women members are there in Farmers Field School		
8	Are they regularly participating in the meetings		
9	Are they contributing to planning and implementation of the programmes		
10	If so in what aspects and to what extent		
11	Are women able to identify needs and prioritize them		
12	Are they participating in study tours/ exposure visits		
13	Are they participating in training programmes		

12. Group led extension:
Please give your opinion about groupled extension functioning by answering the following questions:

- A. Are groups were formed through ATMA ?
- B. How many members are there in each group ?
- a) up to 5 b) 5-10 c) 10-15 d)15 and above
- C. Are any activities undertaken by these groups
1. Have you spread the new information to your group members? **Yes/No**
If No, Why?
If Yes, to how many
a) 5 b) 10-15 c) 15 and above
2. Did the groups formation helped you in getting the following things ---- Please give your opinion by indicating **Yes/No**
- a) Having common threshing floor
b) Combined harvester use
c) Storing produce collectively
d) Selling produce collectively
e) Combined processing
f) Combined transport
g) Representing problems
h) Aware about in and around market prices
i) Getting quality seed, planting material and other inputs at lower prices
j) Getting technical training on various aspects
k) Provision for adoption of new technologies on large scale
l) Setting up of Agro based industries

3. Spread of information: What type of information do you spread?
How many members you spread

Sl.no	Information	No. of farmers covered		
		5-10	10-15	15 and above
1.	New production technologies			
2.	Organic farming			
3.	Value addition to produce			
4.	Marketing information			
5.	Packing and storage of produce			
6.	Cottage industries			

13.Co-ordination:

Please give you opinion regarding coordination by answering the following statements:

Sl. No.	Particulars	Yes	No
1	a) Block level action plans provides an opportunity for co-ordination of different agencies		
2	Coordination of private input agencies led to the supply of quality inputs at reasonable prices.		
3	CIG's/ FIG 's members through their coordination getting advanced technical services such as soil testing, at village		
4	Information about advanced /new technologies are available at village level.		
5	Being formed into CIG's/ FIG 's they are getting inputs through coordination of input agencies.		
6	Being coordination with different farmer groups & private age could able to		

14. Linkage mechanisms: Please give your valuable observation regarding the existence of linkage mechanisms by answering the following questions

- | | | |
|----|---|--------|
| a) | Did you participate in action plans preparation? | Yes/No |
| b) | Have you undertaken any activities with other stake holders? | Yes/No |
| c) | Have you involved NGOs in your programmes? | Yes/No |
| d) | Are ATMA programmes were supported by NABARD and other agencies? | Yes/No |
| e) | While conducting FLDs, OFTs, exposure visits are you involving other stake holders? | Yes/No |
| f) | At Governing Board level did you observe good linkages among the stake holders | Yes/No |
| g) | Did you observe good linkages with KVKs/DAATTCs? | Yes/No |
| h) | Are you involving diffeent stake holdersw while conducting Rytusadassu& Kissan melas? | Yes/No |

15.Convergence : Please give valuable responses on implementation of convergence in reforms

- What are different activities conducted under Convergence ?
 -
 -
 -
- How and at what stage they are converged in performing different activities ?
 -
 -
 -
- What type of convergence was followed / adopted ?
 -
 -
 -

1. Are the action plans prepared combinedly in consultation with all the members ? Yes/ No
2. Are all members regularly participating in the meetings ? Yes/ No
3. How many convening meetings were organized per Year? Yes/ No
4. Are the suggestions expressed by farmer members were included in plans ? Yes/ No
5. Are the planned programmes implemented successfully? Yes/ No
6. Are the programmes are organized as per need ? Yes/ No
7. Are the funds allocated uniformly to all the departments programmes ? Yes/ No
8. Had any information material developed during the Year? Yes/ No
9. Are Farmer Scientist interaction meetings organized during the year Yes/ No
10. Are any programmes were organized in association with private agencies ? Yes/ No
11. Have you observed public private partnership in the programmes organised ? Yes/ No
12. Are any research problems were addresssed during the year ? Yes/ No
13. Are any location specific technologies developed recently? Yes/ No

16.Crop and enterprise intensification : Please give details of the crop related activities taken up under ATMA

Sl.No.	Activity	Taken up	Not taken
1	Have you brought any new area into cultivation		
2	Are any inter crops taken up ? If so what are the crops grown		
3	Have you implemented any recommended techniques such as INM,IPM,IWM for yield maximization ? If so mention the Techniques adopted		
4	Have you grown any improved / high yielding varieties		
5	Have you gone for mechanization /use of improved machinery		
6	Had any irrigation structures/ composting methods/ milking or Rearing techniques were adopted		

B) Crop and enterprise diversification: Please give details of the new enterprises/cropping patterns introduced in your village:

- a) Dairy
- b) Poultry
- c) Silk worm rearing
- d) Compost preparation
- e) Value addition
- f) Any other (Specify)

17. Farmer to farmer extension : Please answer the following questions

Sl.No.	Activity	Yes	No
1	Do you know about farm school		
2	Have you attended any farm school		
3	On which crop you attended the farm school		
4	How many members are there in your Farm school		
5	How many sessions are there in Farm School		
6	Are you exposed to production technologies during the Farm School session		

18. Bottom up planning :

Please answer the following questions to assess implementation of bottom up planning :

- As a group member have you participated in the group discussion ?
- Have you identified gaps in your cultivation ?
- Are you conveyed the same to the FAC members ?
- Are the action plans were prepared on the gaps expressed by the FAC members ?
- Do you know PRA tools ?
- Are you involved in SREP preparation ?
- Are FAC meetings were conducted regularly? If so at what interval ?
- Are AMC meetings were conducted regularly ?

19. Please give the constraints experienced in process implementation of reforms

20. Give suggestions for effective implementation of the programme.

.

Part B: Attitude statements

A set of statements given below represent the attitude towards extension reforms. Please express your feeling about these statements by indicating the degree of your agreement or disagreement on the five point continuum

SA : Strongly Agree, A : Agree, UD : Undecided, DA : Dis Agree, SDA : Strongly Dis Agree

S.No	Attitude statements about ATMA for farmers	SA	A	UD	DA	SD A
I	Institutional arrangements :					
1.	Governing board and Management Committees at district level are more effective, as they are flexible in their operation & also in decision making.					
2.	Farmers from different development sectors are not the stake holders of extension reforms to make the extension farmers driven.					
3.	Though the extension reforms have to provide single window system of extension service, it is not difficult to bring all stake holders into a single line of activities.					
4.	Bottom up planning encourages participatory approaches where farmers, input agencies, line department representatives involve at different levels and develops ownership.					
II	Broad based extension services :					
5.	Extension reforms promote location specific technologies as SREP gives opportunity to identify the gap between potential and present.					
6.	Farmers felt that the reforms encourage technologies which fetch less remuneration and profit to the farmers.					
7.	Delivery of extension services involve less time under reforms, compared to traditional extension.					
8.	SREP preparation gives little scope for tackling large number of location specific problems as various departments are involved in the planning.					
III	Convergence of line departments :					
9.	Extension reforms bring all development sectors into a single platform as it facilitates convergence only at planning of the programmes.					
10.	Preparation of work plans consumes much time as it involves multi disciplinary teams with divergent views.					
11.	Extension officers have not understood the concept of convergence as such different departments preparing their own work plans under ATMA.					
12.	It is best to allocate funds separately under ATMA & department activities rather than convergence of funds allocation based on district and state plans.					
IV	Multi Agency Extension approach :					
13.	Majority of FIG 's are getting marketing information at village level through advanced information and communication .					

S.No	Attitude statements about ATMA for farmers	SA	A	UD	DA	SD A
	technologies available at mandal/ district levels					
14.	Extension reforms gives opportunity for in time supply of resources as it encourages public private partnership among different units.					
15.	Extension reforms revitalizes public extension services through multi agency approach for supplementing and complementing public extension services.					
16.	NGO's can not take up technical activities under reforms, so it is a futile exercise to include NGO's as stake holders.					
V	Group approach to extension :					
17.	Procurement and marketing of produce at reasonable prices may not possible through formation of Commodity Interest Groups.					
18.	Promotion of successful technologies is much easier through group approach as it consumes less time and more activities.					
19.	There is no need of farmer to farmer extension when all the farmers are formed in FIG's/ CIG's.					
20.	Extension reforms encourages improvement of information and communication competencies of farmers as they provides opportunity to farmers groups to participate in various forums.					
VI	Research- Extension –Farmer (REF) linkages :					
21.	Though Farmer Scientist Interaction meetings and Kissan Melas will strengthen the REF linkages and paves way for identification of location specific research issues for scientists.					
22.	Farmer as researcher is recognized and encouraged in ATMA through provision of incentives and awards for their ITK practices.					
23.	Farmers are not empowered through extension reforms as they encourages group approaches &REF linkages towards sustainable development.					
24.	Farmers role in technology development and dissemination is limited in extension reforms though scope for their representation is compulsory at different levels .					
25.	Even new extension reforms are giving scope for duplication of extension activities by development sectors.					
26.	Extension reforms promotes equal opportunities for women through main streaming of gender concern.					
27.	Sustainability of programmes under extension reforms is not possible as it demands 10% contribution from farmers, which is impossible.					
28.	Extension reforms increases the possibility of development and supply of need based impliments					

Annexure -ii
Assessment of process implementation of Extension Reforms in Andhra Pradesh
Interview Schedule-Extension functionaries

Part- A
Profile characteristics of respondents :
Code No.: **Mandal :** **District :**

1	Name of the officer :
2	Designation : Age :
3	Education : a) Graduation : b) Post graduation :
4	Experience : service in years :

5. Group led extension: Please give your opinion about group led extension functioning by answering the following questions:

S. No.	Activities	Yes	No
I	Formation of farmer groups		
1.	FIGs		
2.	FIG (women)		
3.	Commodity Interest groups (CIGs)		
4.	Farmer cooperatives		
5.	Marketing information		
6.	Establishment of Farm Schools		
II	Demonstrations organized		
7.	Agriculture		
8.	Animal Husbandry		
9.	Horticulture		
10.	Fisheries		
11.	Sericulture		
III	Technology dissemination through groups		
12.	New production technologies		
13.	Market information		
14.	Value addition to products.		
15.	Farm information dissemination		
16.	Kisan melas		
17.	Agricultural exhibitions		
18.	Field days		
19.	Kisan Gosthis.		

b) Information material prepared : Please indicate the information material prepared under ATMA by tick marking against the item

Sl .No.	Type of material
1.	Printed materials - leaflets, folders, books
2.	Radio scripts
3.	Television programmes
4.	Recorded cassettes
5.	Success stories

6. Convergence: Please give your valuable responses on implementation of convergence in reforms

- Are any programmes planned in association with line departments.
- Are annual work plans prepared in association with all the stakeholders
- Are any programmes conducted in gap filling mode
- Are any activities conducted through outsourcing
- Are the action plans prepared combinedly in consultation with all the members
- Are all members regularly participating in the meetings
- How many convening meetings were organized per Year
- Are the suggestions were included in plans
- Are the planned programmes were implemented successfully
- Are the programmes were organized as per need
- Are the funds allocated for different programmes were sufficient ?
- Had any information material developed during the Year?
- Are any Farmer Scientist Interaction meetings organized during the year
- Are any programmes were organized in association with private agencies
- The areas in which public private partnership was promoted
- The location specific technologies developed recently

7. Linkage Mechanisms: Please give your valuable observation regarding the existence of linkage mechanisms by answering the following questions

Sl. No.	Training programme	Yes	No
1.	Training programmes organized		
2.	Inter –state		
3.	District level		
4.	Block level		
5.	Village level		

b) Public private Partnership in the District :

Sl. No.	Area	Agency involved
1.	Name the important partnership areas	
2.	Agri clinics	
3.	Seed production	
4.	Nursery management	
5.	Soil testing	
6.	Milk production and procurement	
7.	Poultry making	
8.	Manufacturing	
9.	Fruits and vegetable marketing	
10.	Value addition	

c) Market strategies :

i. How market intelligence feedback mechanisms are arranged to the farmers through mass media

- a. Radio

b. Television
- c. Print media
- ii Farmer Interest groups formed for marketing strategies –

iii No. of trainings arranged in association with others.

8. Capacity building : Have you conducted / underwent training in any of the programmes given below.

Sl. No.	Training programme	Yes	No
1	Field days		
2	Demonstrations		
3	Group discussions		
4	Exposure visits		
5	Study tours		
6	Inter district tours		
7	Inter State tours		

b. Trainings underwent

Sl.no	Name of the training	No. of days
1.	New production technologies	
2.	Communication skills	
3.	Organic farming	
4.	Value addition to produce	
5.	Marketing information	
6.	Programme planning and implementation	
7.	PRA techniques	
8.	Packing and storage of produce	
9.	Cottage industries	

9. Women participation : Please give your opinion about women participation in ATMA programmes

Sl. No.	Activity	Yes	No
1	Are women members are there in Block Technology Team		
2	Are women members are there in Governing Board		
3	Are women members are there in ATMA Management Committee		
4	Are women members are there in Farmers Advisory Committee		
5	Are women members are there in Farmers Interest Group		
6	Are women members are there in Commodity Interest Group?		
7	Are women members are there in Farmers Field School		
8	Are they regularly participating in the meetings		
9	Are they contributing to planning and implementation of the programmes		
10	If so in what aspects and to what extent		
11	Are women able to identify needs and prioritize them		

12	Are they participating in study tours/ exposure visits		
13	Are they participating in training programmes		

10. Co-ordination : Please give your opinion regarding coordination by answering the following statements

Block level action plans provides an opportunity for co-ordination of different agencies	Yes/ No
Coordination of private input agencies led to the supply of quality inputs at reasonable prices.	Yes/ No
CIG’s/ FIG ‘s members through their coordination getting advanced technical services such as soil testing, at village level.	Yes/ No
Information about advanced /new technologies are available at village level.	Yes/ No
Being formed into CIG’s/ FIG ‘s they are getting inputs through coordination of input agencies.	Yes/ No
Being coordination with different farmer groups & private agencies could able to get market information.	Yes/ No
Are all the members participated in SREP preparation	Yes/ No
Is revision of SREP done	Yes/ No

11. Linkage mechanisms : Please give your responses regarding linkage mechanisms

- A) Participation in planning of action plans at BTT meetings.
- B) Participation in organization of -----

i. Demonstrations

ii. Meetings

iii. Group discussions

iv. Exhibitions

v. Kissan melas

vi. Trainings

vii. Exposure visits
- C)What are the services provided by private agencies/ input agencies?

✓ Supply of inputs

✓ Soil testing

✓ Supply of need based impliments

✓ Technical advices

12. Crop and enterprise intensification : Please give details of the crop related activities taken up under ATMA

Sl.No.	Activity	Taken up	Not taken
1	Have you brought any new area into cultivation		
2	Are any inter crops taken up ? If so what are the crops grown		
3	Have you implemented any recommended techniques such as INM,IPM,IWM for yield maximization ? If so mention the techniques adopted		

4	Have you grown any improved / high yielding varieties		
5	Have you gone for mechanization /use of improved machinery		
6	Had any irrigation structures/ composting methods/ milking or Rearing techniques were adopted		

b) Total Area:

- a) New crops introduced
- b) New farm practices adopted.

B) Crop diversification: Please give details of the new enterprises/cropping patterns introduced :

- a) Dairy
- b) Poultry
- c) Silk worm rearing
- d) Compost preparation
- e) Value addition
- f) Any other (Specify)

13 . List out problems / constraints perceived in the reforms.

14. Please enlist the suggestions for effective functioning of reforms

Part B: Attitude statements

A set of statements given below represent the attitude towards extension reforms. Please express your feeling about these statements by indicating the degree of your agreement or disagreement on the five point continuum

SA : Strongly Agree, A : Agree, UD : Undecided, DA : Dis Agree, SDA : Strongly Dis Agree

Sl. No.	Attitude statements about ATMA for Extension Personnel	SA	A	UD	DA	SDA
I	Institutional arrangements :					
1.	Governing board and Management Committees at district level are more effective, as they are flexible in their operation & also in decision making.					
2.	ATMA governing board at district level is ineffective as the flexibility in operation will lead to many malpractices.					
3.	Bottom up planning encourages participatory approaches where farmers, input agencies , line departments representatives involve different levels and develops ownership.					
4.	Extension officers did not conceptualize the concept of reforms, which lead to poor implementation of the programme.					
II	Broad based extension services :					
5.	Extension reforms give opportunities for promoting new technologies because of which the extension workers can easily introduce new innovations.					
6.	Extension reforms promotes Farming SystemBasedExtension which is very difficult task for extension personnel to develop expertise and disseminate the technologies .					
7.	Extension reforms increase the credibility of officers by providing need based technologies on contributory basis.					
8.	SREP preparation gives little scope for tackling large number of location specific problems as various departments are involved in the planning.					
II	Convergence of line departments :					
9.	Extension reforms give scope for periodical trainings of extension functionaries which makes them technically competent.					
10.	Preparation of work plans consumes much time as it involves multi disciplinary teams with divergent views.					

Sl. No.	Attitude statements about ATMA for Extension Personnel	SA	A	UD	DA	SDA
11.	Extension officers have not understood the concept of convergence as such different departments preparing their own work plans under ATMA.					
12.	Convergence in gap filling mode lead to duplication of activities and improper handling of funds.					
13.	Convergence at different departments is very difficult as each department has its own specific roles and responsibilities and reforms are one of the activity for them					
IV	Multi Agency Extension approach :					
14.	Farming system based needs are addressed at the farmer door step under extension reforms,for increasing the productivity of small and marginal farmers.					
15.	Under public private partnership the credibility will be claimed by the private people so it is not good to encourage Public Private Partnership under ATMA.					
16.	Extension reforms revitalize public extension services through multi agency approach for supplementing and complementing.					
17.	Decentralized power and decision making for multi agency activities under ATMA may result in poor extension services.					
V	Group approach to extension :					
18.	Farmer School approach is the best approach for farmer to farmer extension under reforms.					
19.	Promotion of successful technologies is much easier through group approach as it consumes less time and more activities.					
20.	There is no need of farmer to farmer extension when all the farmers are formed in FIG's/ CIG's.					
21.	Extension reforms encourages improvement of information and communication competencies of farmers as they provides opportunity to farmers groups to participate in various forums.					
VI	Research- Extension –Farmer (REF) linkages :					
22.	Farmer Scientist Interaction meetings and Kissan Melas will strengthen the REF linkages and paves way for identification of location specific research issues for scientists.					
23.	Extension reforms draw reliable feed back through continuous interaction of stake holders at different levels.					

Sl. No.	Attitude statements about ATMA for Extension Personnel	SA	A	UD	DA	SDA
24.	Farmer as researcher is recognized and encouraged in ATMA through provision of incentives and awards					
25.	Interactive meetings and Kisan Melas are not the forum to develop Research-Extension_Farmer linkages.					
VII	Others :					
26.	ATMA made very easy to provide extension services through outsourcing.					
27.	Co- ordination of activities becomes strenuous, laborious and time consuming process and also nothing can be achieved.					
28.	Sustainability of programmes under extension reforms is not possible as it demands 10% contribution from farmers.					

ANNEXURE – iii
Table showing the t values of attitude statements

Sl.No.	Attitude statements about ATMA for farmers	t values
I	Institutional arrangements :	
1.	Governing board and Management Committees at district level are more effective, as they are flexible in their operation & also in decision making.	3.883*
2.	ATMA governing board at district level is ineffective as the flexibility in operation will lead to many malpractices.	1.473
3.	Farmers from different development sectors are not the stake holders of extension reforms to make the extension farmers driven.	2.041*
4.	Governing Board is unable to monitor the implementation of programmes and failed to give feed back to research and extension system	1.048
5.	Decentralization of authority will dilute extension services, since the planning will be done based on the interests of few farmers.	1.198
6.	Though the extension reforms have to provide single window system of extension service, it is not difficult to bring all stake holders into a single line of activities.	2.579*
7.	Decentralized decision making leads to effective functioning, as the members of the committee have not only technical competencies but also directing powers.	1.712
8.	Bottom up planning encourages participatory approaches where farmers, input agencies, line department representatives involve at different levels and develops ownership.	3.751*
9.	It is difficult to provide timely extension services under new extension reforms as it is difficult to involve multi disciplinary extension personnel to address farmer's problems.	0.425
II	Broad based extension services :	
10.	Extension reforms promote location specific technologies as SREP gives opportunity to identify the gap between potential and present.	2.849*
11.	Farmers felt that the reforms encourage technologies which fetch less remuneration and profit to the farmers.	3.151*
12.	Delivery of extension services involve less time under reforms, compared to traditional extension.	2.242*
13.	SREP preparation gives little scope for tackling large number of location specific problems as various departments are involved in the planning.	1.950*
III	Convergence of line departments :	
14.	Extension reforms bring all development sectors into a single platform as it facilitates convergence only at planning of the programmes.	3.623*
15.	Best annual work plans can be prepared as the plans were scrutinized at different levels by the representatives of the line departments.	1.209
16.	Preparation of work plans consumes much time as it involves multi disciplinary teams with divergent views.	2.973*
17.	Convergence is the best mode of implementation of different extension services but it is not being properly understood and utilized by the line departments.	1.130

Sl.No.	Attitude statements about ATMA for farmers	t values
18.	Extension officers have not understood the concept of convergence as such different departments preparing their own work plans under ATMA.	2.289*
19.	Convergence at different levels is a big task for implementation as they have often important goals and priorities than reforms	1.468
20.	Convergence at different departments is very difficult as each department has its own specific roles and responsibilities and reforms are one of the activity for them	1.572
21.	It is best to allocate funds separately under ATMA & department activities rather than convergence of funds allocation based on district and state plans.	3.591*
IV	Multi Agency Extension approach :	
22.	Farming system based needs are addressed at the farmer door step under extension reforms, for increasing the productivity of small and marginal farmers.	1.746
23.	Under Extension reforms good plans/ programmes are prepared after thorough discussions and common consensus of FIGs/CIG s/FAC/FIAC/BTT.	1.723
24.	Under public private partnership the credibility will be claimed by the private people so it is not good to encourage Public Private partnership under ATMA.	1.739
25.	Crop diversification is very easy through extension reforms as it provides sound technical back up and support.	1.044
26.	Majority of FIG 's are getting marketing information at village level through advanced information and communication technologies available at mandal/ district levels.	3.242*
27.	Extension reforms paves way for reaching marginal and small farmers as minimum 10% of fund allocation was given to Public Private partnership activities involving NGO's.	1.188
28.	Input agencies exploit the farmers during the season so it is foolish to form a linkage mechanism with input agencies under ATMA.	1.830
29.	Extension reforms gives opportunity for in time supply of resources as it encourages public private partnership among different units.	2.973*
30.	Since private partners cannot deliver quality services on par with Government it is useless to include private partners in reforms.	1.739
31.	Extension reforms revitalizes public extension services through multi agency approach for supplementing and complementing public extension services.	2.623*
32.	Village / block level storage facilities for horticultural crops are provided under ATMA if farmers are formed into farmer interest groups.	2.130
33.	NGO's can not take up technical activities under reforms, so it is a futile exercise to include NGO's as stake holders.	4.041*
34.	Decentralized power and decision making for multi agency activities under ATMA may result in poor extension services.	1.923
V	Group approach to extension :	
35.	Farmer school approach is the best approach for farmer to farmer extension under reforms.	1.685

Sl.No.	Attitude statements about ATMA for farmers	t values
36.	Emphasis is given in extension reforms for capacity building of farmers as there is provision for training at State, district, block and village levels on divergent needs.	0.044
37.	Procurement and marketing of produce at reasonable prices may not possible through formation of Commodity Interest Groups.	2.242*
38.	Promotion of successful technologies is much easier through group approach as it consumes less time and more activities.	1.985*
39.	Extension reforms envisages all round development of farmers as it encourages group approach and taken into account of Agriculture and allied activities.	1.010
40.	There is no need of farmer to farmer extension when all the farmers are formed in FIG's/ CIG's.	3.816*
41.	Extension reforms encourages improvement of information and communication competencies of farmers as they provides opportunity to farmers groups to participate in various forums.	2.623*
42.	Planning and decision making capacities of farmers are improved by involvement and representations of farmers in BTT,FIAC, AMC & GB.	2.209
VI	Research- Extension –Farmer (REF) linkages :	
43.	Though Farmer Scientist Interaction meetings and Kissan Melas will strengthen the REF linkages and paves way for identification of location specific research issues for scientists.	3.043*
44.	Co-ordination of different line departments towards farmer development is made easy through extension reforms.	0.923
45.	Giving rewards to few members will demoralize group harmony and lead to dismantling of groups	1.740
46.	Farmer as researcher is recognized and encouraged in ATMA through provision of incentives and awards for their ITK practices.	3.973*
47.	Farmers are not empowered through extension reforms as they encourages group approaches &REF linkages towards sustainable development.	2.234
48.	Linkage & linkage mechanisms among Research- Extension- Farmer is not possible except on paper.	1.164
49.	Interactive meetings and Kissan Melas are not the forum to develop Research-Extension_ Farmer linkages.	1.204
50.	Farmers role in technology development and dissemination is limited in extension reforms though scope for their representation is compulsory at different levels .	3.849*
51.	Even new extension reforms are giving scope for duplication of extension activities by development sectors.	3.918*
52.	Extension reforms promotes equal opportunities for women through main streaming of gender concern.	2.945*
53.	Making farmer as self sustainable is possible by involving him in different activities and trainings.	1.088
54.	ATMA provides an oppourtinity for farmers to learn technologies through farmers experiences which lead farmer to farmer extension in ATMA.	1.624
55.	Sustainability of programmes under extension reforms is not possible as it demands 10% contribution from farmers, which is impossible.	2.642*

* - Selected statements for final attitude scale

ANNEXURE – iv
Table showing the t values of attitude statements

Sl.No	Attitude statements about ATMA for Extension Personnel	t value
I	Institutional arrangements :	
1.	New institutional arrangements promoted through ATMA are not beneficial as they encourage bottom up planning.	1.280
2.	Governing board and Management Committees at district level are more effective, as they are flexible in their operation & also in decision making.	3.041*
3. -	ATMA governing board at district level is ineffective as the flexibility in operation will lead to many malpractices.	2.579*
4.	Farmers from different development sectors are not the stake holders of extension reforms to make the extension farmers driven.	1.268
5. -	Decentralization of authority will dilute extension services, since the planning will be done based on the interests of few farmers.	1.453
6.	Extension reforms promotes decentralized decision making because the planning process involves all the stake holders.	1.384
7.	Bottom up planning encourages participatory approaches where farmers, input agencies , line departments representatives involve different levels and develops ownership.	4.082*
8. -	Extension officers are not oriented about institutional arrangements of ATMA activities which leads to returning of the funds at the end of the season.	1.111
9. -	Extension officers did not conceptualize the concept of reforms, which lead to poor implementation of the programme.	2.674*
II	Broad based extension services :	
10.	Extension reforms promote location specific technologies as SREP gives opportunity to identify the gap between potential and present.	1.382
11. -	Extension reforms give opportunities for promoting new technologies because of which the extension workers can easily introduce new innovations.	2.973*
12. -	Extension reforms promotes Farming SystemBasedExtension which is very difficult task for extension personnel to develop expertise and disseminate the technologies .	3.816*
13.	Extension reforms increase the credibility of officers by providing need based technologies on contributory basis.	2.623*
14. -	SREP preparation gives little scope for tackling large number of location specific problems as various departments are involved in the planning.	2.575*
III	Convergence of line departments :	
15.	Extension reforms bring all development sectors into a single platform as it facilitate convergence only at planning of the programmes.	1.384
16.	Extension reforms give scope for periodical trainings of extension functionaries which makes them technically competent.	2.214*
17. -	The performance of extension functionaries is poor as most of time is spent in planning and training.	1.364

Sl.No	Attitude statements about ATMA for Extension Personnel	t value
18. -	Preparation of work plans consumes much time as it involves multi disciplinary teams with divergent views.	3.043*
19. -	Extension officers have not understood the concept of convergence as such different departments preparing their own work plans under ATMA.	2.066*
20. -	Convergence in gap filling mode lead to duplication of activities and improper handling of funds.	2.889*
21. -	Convergence at different departments is very difficult as each department has its own specific roles and responsibilities and reforms are one of the activity for them	3.883*
22. -	It is best to allocate funds separately under ATMA & department activities rather than convergence of funds allocation.	1.268
IV	Multi Agency Extension approach :	
23.	Farming system based needs are addressed at the farmer door step under extension reforms, for increasing the productivity of small and marginal farmers.	2.803*
24.	Under Extension reforms good plans/ programmes are prepared after thorough discussions and common consensus of FIGs/CIG s/ FAC/ FIAC/ BTT.	1.280
25. -	Under public private partnership the credibility will be claimed by the private people so it is not good to encourage Public Private Partnership under ATMA.	2.081*
26.	Extension reforms paves way for reaching marginal and small farmers as minimum 10% of fund allocation was given to Public Private partnership activities involving NGOs.	1.442
27.	Extension reforms gives opportunity for in time supply of resources as it encourages public private partnership among different units.	1.384
28.	Extension reforms revitalize public extension services through multi agency approach for supplementing and complementing.	3.821*
29. -	Decentralized power and decision making for multi agency activities under ATMA may result in poor extension services.	2.006*
V	Group approach to extension :	
30. -	When farmers are working in groups the departments need not transfer the technologies to other farmers.	1.048
31.	It is important that only one or two farm schools have to be organized for effective transfer of technology under ATMA	1.113
32.	Farmer school approach is the best approach for farmer to farmer extension under reforms.	2.703*
33.	Promotion of successful technologies is much easier through group approach as it consumes less time and more activities.	3.166*
34.	Extension reforms envisages all round development of farmers as it encourages group approach and taken into account of Agriculture and allied activities.	1.745
35. -	There is no need of farmer to farmer extension when all the farmers are formed in FIG's/ CIG's.	3.392*

Sl.No	Attitude statements about ATMA for Extension Personnel	t value
36.	Extension reforms encourages improvement of information and communication competencies of farmers as they provides opportunity to farmers groups to participate in various forums.	1.732
37. -	As there are so many group activities in the present extension system there is no need to address and emphasize group approaches under ATMA.	1.275
VI	Research- Extension –Farmer (REF) linkages :	
38.	Farmer Scientist Interaction meetings and Kissan Melas will strengthen the REF linkages and paves way for identification of location specific research issues for scientists.	2.954*
39. -	Prioritization of location specific problems and research issues are difficult under reforms because of common dias is provided at different levels.	1.241
40.	Extension reforms draw reliable feed back through continuous interaction of stake holders at different levels.	3.392*
41.	Farmer as researcher is recognized and encouraged in ATMA through provision of incentives and awards.	1.782
42. -	It is difficult to bring all the three partners, the Research-Extension-Farmer on a single platform.	1.136
43. -	Interactive meetings and Kisan Melas are not the forum to develop Research-Extension_ Farmer linkages.	4.954*
VII	Others :	
44.	Farmers capacity building is possible through extension reforms as it arranges regular off campus & on campus trainings.	1.475
45.	Extension reforms increases knowledge of farmers by organizing exposure visits to inter-state and intra-state innovative activities.	1.109
46. -	Though there is a scope under reforms to empower grass root level extension functionaries through exposure visits and interaction meetings it is not being practiced.	1.275
47.	ATMA made very easy to provide extension services through outsourcing.	4.347*
48. -	Co- ordination of activities becomes strenuous, laborious and time consuming process and also nothing can be achieved.	3.613
49.	Farmers learn technologies through farmers experiences which lead farmer to farmer extension under ATMA.	1.328
50.	Sustainability of programmes under extension reforms is not possible as it demands 10% contribution from farmers.	4.503*

* - Indicates the statements selected for final scale