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A research study on perceptions of extension functionaries about transfer of technology (ToT) in Tamil Nadu

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Abstract

In India, the share of agriculture in Gross Domestic Product (GDP) has declined from over half at the time of independence to less than one-fifth in the current scenario. With vast majority producers being small and marginal farmers (accounting 86.2 %), production of food grains with galloping population is really a potential challenge. For translating research results into materialistic gains at farm level, well-functioning agricultural extension and advisory services are required. The perception of the extension work force is also need to be documented for any further step in reforming the extension system. A research study was conducted at Pudukkottai and Sivaganga districts of Tamil Nadu so as to document the perception of extension functionaries on Transfer of Technology (ToT) as well as their constraints and suggestions for revamping the work efficiency.

Keywords: Transfer of Technology (ToT), Extension functionaries, Perception and constraints

Introduction

Prelude

Targeting smallholder farmers, who have low agricultural income, is important as they search less for information. These farmers mostly lack motivation and interest in agriculture, so improving the timely delivery and reliability of information will be important to encourage them to improve their information search strategies. Thus provision and delivery of agricultural extension and advisory services to small and marginal farmers would remain the crucial element in national food security.

Farm Technology Transfer

Farm Technology transfer can be defined as the process of diffusion of farm technology from one entity to another. The technology transfer may be vertical or horizontal technology transfer. The vertical transfer refers to transfer of technology from basic research to applied research, development, and production respectively. The horizontal technology transfer refers to the movement and use of technology used in one place, organization, or context to another place, organization or context. Thus the Transfer of Technology as a whole depends on the agricultural extension machinery working in the grass root level.

Agricultural extension in India

Agricultural extension in India has grown over last six decades. Almost 1.2 lakhs extension functionaries are striving hard to spread the knowledge and skill among the farming community in India. In recent past, several efforts have been made in the public sector over the past one decade to initiate various reform measures and operational models to improve the organizational efficiency of public extension system. The challenge of enhancing relevance, efficiency, and effectiveness of the public sector agricultural extension system also depends on the knowledge and skill of field functionaries as well as manpower availability and work load. There is a major scarcity of extension staff at various levels. As per the report, in 2012-13 one extension functionary served 1162 operational holdings (broadly, sectoral variations exist). The DFI committees of the opinion that the minimum ratio of extension service provider to farming family that is recommended is as follows: (i) Hilly areas – 1:400 (ii) Irrigated areas – 1:750 (iii) Rainfed areas- 1:1000. A total of 27,937 positions were sanctioned depending on the strength and eligibility of each state. As on 15/4/2017, only 13,672 positions were filled and 14,265 positions were vacant. If these ATMA vacancies are filled up then the ratio would improve from 1162 farmers per officer to 1037 farmers per officer. For translating research results into materialistic gains at farm level, well-functioning agricultural extension and

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advisory services are required (Devnath, A and Saravanan, R. 2014) [1]. The perception of the extension work force is also need to be documented for any further step in reforming the system. In this context, a research study on documenting the 'Stakeholders Perceptions on Transfer of Technology' was carried out.

Methodology

The perception of ToT through statements (Questionnaire) was collected from 84 extension functionaries from

Pudukkottai and Sivaganga districts. They also shared their constraints and suggestions towards various schemes implemented.

Results and discussion

Stakeholder Perception on ToT

The perception about the transfer of technology by the extension officials was measured by farming positive and negative statement related to ToT and responses were presented in the table 1 by means of percentage.

Table 1: Perception Analysis on ToT by Extension functionaries (n= 84)

Sl. No	Statement on Transfer of Farm Technology Activities	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
1.	Transfer of Technology (ToT) in our state is highly efficient and effective between Extension officials and Farmers	20.23	40.47	20	3.5	1.10
2.	The distribution of inputs and subsidies to the farmers by department of Agriculture is on time and unbiased without the political interventions	20.00	34.50	28.5	20.23	5.95
3.	With the greatness in execution of farm programmes, the Department of Agriculture, Tamil Nadu is continuously awarded with 'Krishi Karman Award'	26.19	59.52	7.14	4.76	2.38
4.	The new technologies evolved by University / ICAR Institutes are easily adaptable by the farmers with the support of State Extension System.	17.85	55.95	22.61	2.38	1.10
5.	Extension officials frequently visit to their allocated location for educating the farmers on ToT	16.60	59.52	17.85	4.76	1.10
6.	Generally, the farmers are not utilising the facility, programmes and schemes available in Agricultural Extension Center (AEC)	8.33	19.04	22.61	44.04	5.95
7.	The monthly, yearly targets fixed by higher officials on different schemes which are easily achieved by extensions officials	5.95	13.03	35.71	35.71	9.52
8.	The Agricultural DEPOT's are not functioning properly and required inputs are not available during main seasons	3.57	20.23	25	40.47	10.70
9.	There won't be any gender bias in technology delivery and technology use	21.42	50.00	19.04	7.14	2.38
10.	The best transfers of technology tool in field extension is taking the farmers to exposure visits and conducting demonstrations	17.85	66.6	8.30	4.76	1.10
11.	The benefits provided by the Government are not properly reaching to the small, marginal and socially deprived farmers and farm women	8.30	19.04	14.28	46.42	11.90
12.	With the pace of change, the Department is upgraded to provide on-line services and mobile advisories by using ICT tools	16.60	50.00	14.28	16.60	3.57
13.	The problems raised by the farmers during the trainings, meetings and grievance days are not solved by the extension officials	8.30	14.28	10.70	53.57	13.09
14.	The funds allotted to various schemes are properly executed by the extension officers	20.23	50.00	15.47	11.90	2.38
15.	All the benefits of schemes and programmes are targeting the men folk than women folk	-	16.60	23.8	34.52	25.00

From the table 1, almost two-third of the respondents (60. 70 %) agreed that Transfer of Technology (ToT) in the state is highly efficient and effective between Extension officials and Farmers followed by 20 per cent belongs to neutral and 3.5 per cent of the respondent not satisfied with existing ToT. Being an Agricultural Officer in the parent department always holds proud moment of their achievements. More than half of the respondent (54.50 %) agree with the timely distribution of inputs and subsidies to the farmers by the department of agriculture and unbiased without the political interventions. At the same time 20.23 per cent of respondent disagreed, it shows that there is a gap in subsidy distribution to the farmers because of some political interventions. In a social system like Tamil Nadu, the elected political representatives' intervention and influence is always noticed in the form free input and subsidy based distribution to the farmers as indicated by the respondents. Majority (85.71%) of the respondents stated that due to the greatness in execution of farm programmes, the

Department of Agriculture, Tamil Nadu is continuously awarded with 'Krishi Karman Award' for the past 3 years. With the support of farmers, the extension officials are able to achieve the improved version of production and productivity. All the outreach activities of the department, the officials are properly documenting the evidence and report which was the base factor for proving and convening the selection committee (Patel, D.B Thakkar K.A and Patel K.S. 2012) [3].

Just more than half (55.95 %) respondents opined in the form agreement that the new technologies evolved by University / ICAR Institutes were easily adaptable by the farmers with the support of State Extension System. By evolving the usage of new media tools especially m-kisan, TNAU PORTAL and AGRISNET messages, the farmers were educated on new varieties and technology release from SAUs and ICAR institutions. Nearly two-third (59.52%) of the respondents stated that Extension officials frequently visit to their allocated location for educating the farmers on ToT. The

result indicates that extension system is live and transfer of technology is happening. It is not documented the quantum and quality of the service rendered by the extension officials. More than two-fifth (44.04%) of the respondents reported that generally, the farmers are not utilising the facility, programmes and schemes available in Agricultural Extension Centre (AEC). The Department of Agriculture is implementing two-tier set-up of extension approach at the district level. Even though, AECs are functioning in Panchayat Union Office and Integrated Extension Complex, the farmers visit to the centre is negligible which is concerning issue at the block level. Majority of the respondents (84 %) opined that the best transfers of technology tool in field extension is taking the farmers to

exposure visits and conducting demonstrations. Even though it is known fact that farmers may able gain more knowledge and skill during the outside and real field visits. Besides, ATMA, NFSM and NADP schemes are assisting lot of exposure visits to others states and more of result and method demonstrations.

Further, the perception study (23.80 %) result revealed that the Agricultural DEPOT's are not functioning properly and required inputs are not available during main seasons, the problems raised by the farmers during the trainings, meetings and grievance days are not solved by the extension officials. More than half of the respondents (66.60 %) opined that, the Department is upgraded to provide on-line services and mobile advisories by using ICT tools with the pace of change.

Table 2: Constraints faced by the Extension functionaries in Transfer of Technology (n=84) * Multiple response

Sl. No	Name of the Constraints	Number	Percent	Rank
1.	The targets are fixed by higher officials without the ground reality and potential	65	77.38	II
2.	Lack of cooperation and poor response from the farmers side	74	88.09	I
3.	Insufficient manpower to implement the scheme	45	53.57	V
4.	Inadequate communication from the higher officials	29	34.52	VI
5.	Work pressure from the higher officials	24	28.57	VII
6.	Inadequate sanction of budget for the respective schemes	55	65.47	III
7.	The poor acceptance of the new and improvised technology	50	59.52	IV

From the table 2 and fig.1 it is inferred that, majority (87.50%) of the extension officials faced the problem of poor response from the farmers. Only the progressive and innovative farmers are reactive and they are adapting new technologies. Target fixed by the higher officials and government is not easily achieved by the extension officials because the rate and speed of adaption is dawdling. More than three-fourth (78.12%) respondents felt that the targets are fixed by higher officials without the ground reality and potential. It is expressed that the field extension functionaries has to undertake many activities like preparation of reports in computer, on-line entry of data and bills, attending training and meeting often reduces the routine farmer outreach task. Besides, climate and weather are the contributing factor which affects the production and productivity of crops. Nearly two-third (65.62 %) of the respondent expressed that inadequate sanction of budget for the respective schemes. The government is implementing many schemes for the welfare of

farmers, but there is no proper fund allotment at the time of financial year begins. This builds work pressure among the extension functionaries and resulting lost minute identification of beneficiaries will resulted in the poor adaption level. Almost three-fifth (59.37 %) of the respondents shared that the poor acceptance of the new and improvised technology on comparison with private companies. Mainly Rice, Maize, Cotton crop varieties dominating than the recommended varieties and technologies of TNAU. The research system has to cope-up and come-up with technological needs of farmers and its suitability to the different environment and eco-systems. The other constraints faced by the extension officials were extension system is not having the sufficient number of manpower to implement the scheme; there is no appropriate communication between the higher officials and work pressure from the higher officials which is impediment factors affecting the technology transfer process.

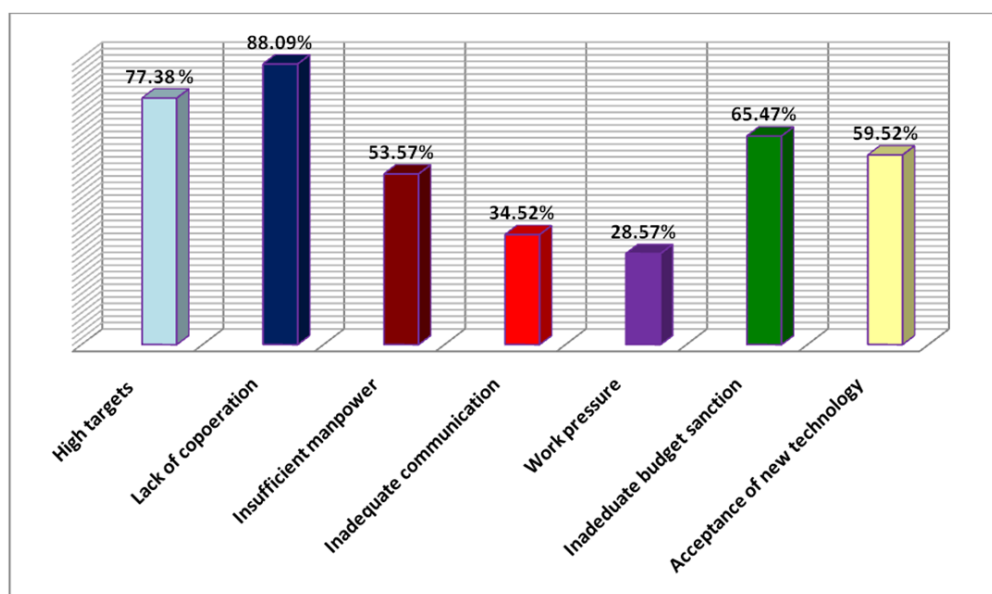
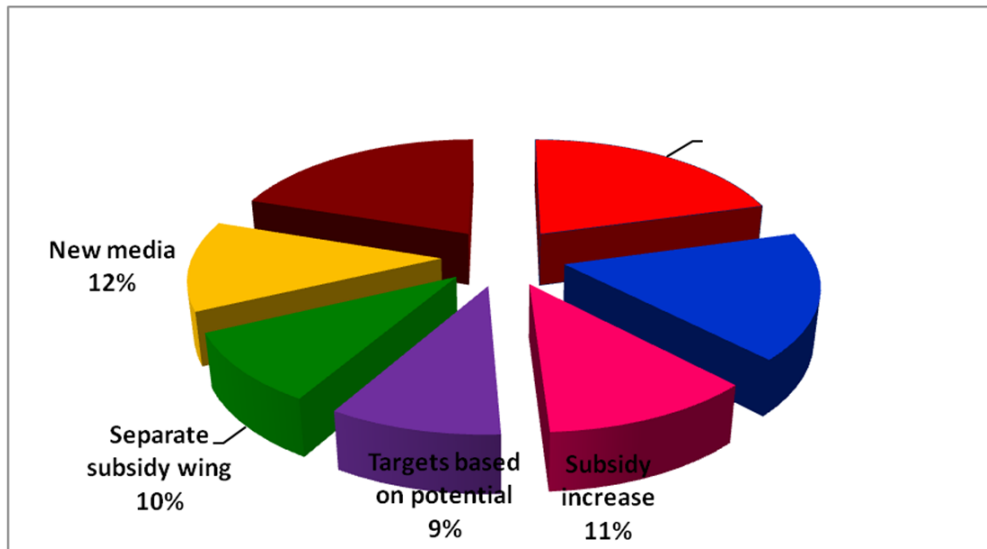


Fig 1: Constraints felt by extension functionaries in ToT

Table 3: Suggestions offered by the Extension functionaries in Transfer of Technology (n=84) * Multiple responses

Sl. No	Name of the Suggestions	Number	Percent	Rank
1.	Ensure timely release of fund	76	90.47	I
2.	Avoiding last minute information and communication	63	75.00	III
3.	Increasing subsidy and number of beneficiary farmers	42	50.00	V
4.	The targets may be fixed based on the potentials and scope	34	40.47	VII
5.	Formation of separate wings of extension for subsidy and service	35	41.66	VI
6.	New media and traditional media tools to be channelized to popularise the projects and schemes	45	53.57	IV
7.	Providing additional man power to complete the target and scheduled work	73	86.90	II

**Fig 2:** Suggestions offered by extension functionaries

From the table 3 and fig.2, it is inferred that majority (90.47%) of the respondents suggested that ensuring and timely release of fund for various programme at the time of sanctioning and issuance Government Order (GOs). The system is totally working in leisurely in the first half of the financial year and very tidy and hectic in the last six month of the financial year. More than four-fifth (86.90%) of respondents indicated that providing additional man power will support the officials to complete the work and proper record maintenance. It will ensure that the extension officials makes periodic visit to the farmers field, studying the field issues and offer valuable technology advisory. Exactly three-fourth (75.00 %) of the respondents expressed that avoidance of last minute information and communication from both at State and District Head Quarters with immediate report. This matches with the fact that the delay in communication affects already scheduled field visit and programmes. (Pant, K and Singh, U.2014). The extension officials often received sarcastic comments from the farmers that field functionaries never keep up the promise. In this context, more than half (53.57%) of the respondent explained that new media and traditional media tools to be channelized to popularise the new projects and schemes for the benefit of farmers and stakeholders.

The other suggestions are increasing subsidy and number of beneficiary farmers (50.00 %), the targets may be fixed based on the potentials and scope (40.47 %), formation of separate wings of extension for subsidy and service (41.66 %). Besides, few of the schemes implemented in non beneficiaries areas and scheme are not properly reached the real beneficiaries because of political intervenes. Hence, it has to be properly channelized targeting the small and marginal farmers and uplifting the socially downtrodden farming community.

Conclusion

Agriculture extension services in India are predominantly centred on crop husbandry with a pronounced tilt towards Transfer of Technology (ToT). Around 70 per cent of the agriculture R&E budget was allocated for crop husbandry, while 92 per cent of the budget on agriculture extension was allocated to crop husbandry. The other sectors like horticulture, allied agro avenues should also have provided with due importance. Thus decentralize the extension systems are most warranted to solve the day to day complex issues in farm technology transfer domain. That's why ATMA Agricultural technology management Agency approach was brought under operation. Making extension decentralized and demand-driven will really helps to solve the ground problems. The extension reforms strive to reach those groups smallholders, resource-poor, and women farmers which often remain unreached by the existing extension systems, and instead often tend to address the needs of progressive and commercially-viable farmers.

The knowledge level extension functionaries on various schemes and subject matter are important in technology transfer process. For improving the knowledge level of various developmental schemes, providing adequate and periodical training programs in order to disseminate full-fledged knowledge about the schemes in an effective manner to extension officials is essential. Thus, the perception of the extension work force is needed to be considered for a well-functioning agricultural extension and advisory services.

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Reference

1. Devnath A, Saravanan R. Job satisfaction and job autonomy of extension personnel of the public agricultural extension organisation in Tripura state of North East India. *International Journal of Development Research*. 2014; 4:1643-1650.
2. Pant K, Singh U. Need for revamped extension approaches to overcome the constraints in transfer of technology. *Indian Research Journal of Extension Education*. 2014; 1:109-111.
3. Patel DB, Thakkar KA, Patel KS. Perceptions of extension personnel about transfer of technology in north Gujarat. *Gujarat Journal of Extension Education*. 2012; 23:95-98.
4. Verma SR, Sharma FL. Attitude of extension personnel towards application of information and communication technology in agriculture. *Rajasthan Journal of Extension Education*. 2012; 20:102-107.