

Institutional Analysis on Local Level Department of Agriculture, Chaung Oo Township Based on Perception of Staff Concerned with Extension Services

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Abstract

This study was conducted in Chaung Oo Township on September 2015 with two main objectives: (1) to observe the current working situation of Department of Agriculture (DOA) and linkage between Department of Agriculture and Department of Agricultural Research (DAR), private sector, and NGOs, and (2) to describe the institutional management and system of township level DOA according to the perception of respondents from DOA, DAR, private sector and NGO. The primary data were collected from township staff officer from DOA, research officer from DAR and respondents from NGO and private sector using key informant interview. Moreover, primary data were also collected from 27 extension staff with semi structural questionnaire. As the findings, although staffs were updated with technological knowledge by different types of training, plant protection, and seed and in service training were a few. Individual staff had too many farmers to contact and about half of respondents had normal visit to assigned area and able to contact about fifty percent of client farmers. Extension methods such as field day, pamphlets and farmer field school were not common in study area. In study area, current linkage between DOA and DAR, NGOs, private sector was weak. Formal linkage of DOA with private companies was not found except retail shops. Most staff perceived that assigned duties were equally distributed among them and they had work discussion among staff. However, most staff didn't perceive that promotion system was systematic and received opportunity equally. To be improved of DOA, the staff perceived that adequate training provision to staff, adequate number of qualified staff, accessible market and price, efficient and sufficient budget allocation, provision of inputs and local specific technologies, more contacts with farmers in extension activities are required. More provision of training opportunity for all levels of extension staffs and trainings programs based on training needs of extension personnel are es-

Introduction

In Myanmar, about 65% of total population live in rural areas and are employed in the agriculture, livestock and fishery sectors for their livelihood. Agriculture sector plays an essential role for more food production with the growing population as well as for the country to occupy a large part of the export earnings. Agricultural sector's development will be significantly influenced by improvements in production efficiency, which in turn depends on the development of and use of appropriate technologies. Among the institutions under Ministry of Agriculture, Livestock and Irrigation, Department of Agriculture (DOA) is the sole government institution

responsible for providing public extension services to the farmers (MOAI 2016). The Agricultural Extension Division (AED), the biggest division among eight division of DOA, plays an important role in modernizing the agricultural extension sector to promote and support technological innovation and behavioral change to meet farmers' needs.

A number of structural changes and reforms are required to improve the linkages between the agricultural education, research and extension institutions on the one hand, but on the other hand also adjusting the orientation of agricultural policy in general towards the problems and the needs of the farming community. An improved agricultural extension system will be primary mechanism for

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achieving new policy objectives such as income generation, improved quality of agricultural products. Policy changes, institutional reorganization, and the strengthening of organizations are required to enhance extension especially in developing countries. Also in Myanmar, agricultural extension services were centrally controlled by bureaucratically oriented and the organizational framework did not provide for decision-making from below. Sometimes, priorities of research and extension activities do not meet with regional and local need of farmers. Very few research or investigations have been conducted on Myanmar agricultural extension services in the past (Khin Oo 2007).

In this study, there were two main objectives.

- (1) To observe the current working situation of DOA and linkage between DOA and DAR, private sector, and NGOs
- (2) To describe the institutional management and system of township level DOA by the perception of respondents from DOA, DAR, private sector, and NGO.

Research Methodology

Data collection

The survey was conducted in Chaung Oo Township during the period of September, 2015.

Note: KI = key informant interview, SSI = semi structural interview.

Primary data was collected from township staff officer with key informant interview and 27 number of all extension staff with semi structural interview in Chaung Oo, DOA. Primary data were also collected by using KI interview from research officer (Zalote research farm, DAR), unit manager (Pact Myanmar Microfinance Organization), two staff from private agrochemical companies (Awaba and Golden Lion), one output buyer, one processor, three owners of agrochemical retail shops. Secondary data were gathered from various sources such as several books, literatures, articles, journals, thesis, official records of Ministry of Agriculture Livestock and Irrigation and other related publications.

Data Analysis

The collected data (both qualitative and quantitative) was entered into the Microsoft excel pro-

gram. Descriptive statistics methods such as frequency, percentage, mean, standard deviation were applied to identify socio-demographic characteristics, number of trainings attended, working conditions, linkage between organizations, frequency of contact per year, perceptions of different respondents on linkage between DOA and NGOs, private sector, and on institutional management and system of township level DOA.

Results and Discussion

Demographic characteristic of all extension staff from DOA, Chaung Oo Township

The results of this research show that the average age of all extension staff was 35 years with the oldest 59 years and the youngest 21 years old. In gender status, female was 71% and male was 29% of the respondents. Based on marital status, single (58%), married (39%) and widowed (3%) were found. In the study area, the education levels of all extension staff were observed at higher percentage in diploma certificate (84%), agricultural high school level (13%) and B.Agr.Sc (3%) respectively. Average service years were 30 years for township staff officer, 24 years for deputy staff officer, 11

Table 1. Demographic characteristics of all extension staff from DOA, Chaung Oo Township

Item	Position					
	TSO (N = 1)	DSO (N = 4)	ASO (N = 11)	DASO (N = 11)	AS (N = 4)	All (N = 31)
Age (Year)						
Average	54	49	37	30	22	35
Maximum	0	59	44	34	24	59
Minimum	0	41	27	23	21	21
Gender (%)						
Male	0	2 (50)	3 (27)	4 (36)	0	9 (29)
Female	1	2 (50)	8 (73)	7 (64)	4 (100)	22 (71)
Marital status (%)						
Single	0	1 (25)	7 (64)	7 (54)	3 (75)	18 (58)
Married	0	3 (75)	4 (36)	4 (36)	1 (25)	12 (39)
Widowed	1	0	0	0	0	1 (3)

Note: Figure in the parentheses represents percentage

TSO = Township Staff Officer, DSO = Deputy Assistant Officer, ASO = Assistant Staff Officer, DASO = Deputy Assistant Staff Officer, AS = Apprentice Staff

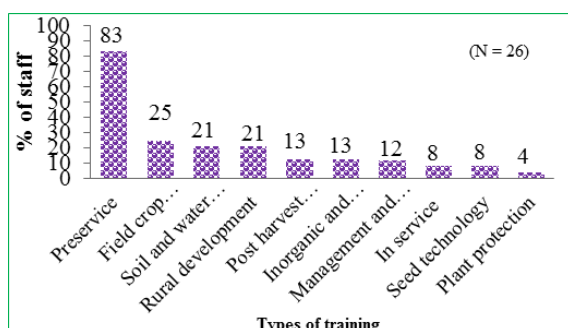


Figure 1. Training experiences of extension staff, Chaung Oo Township

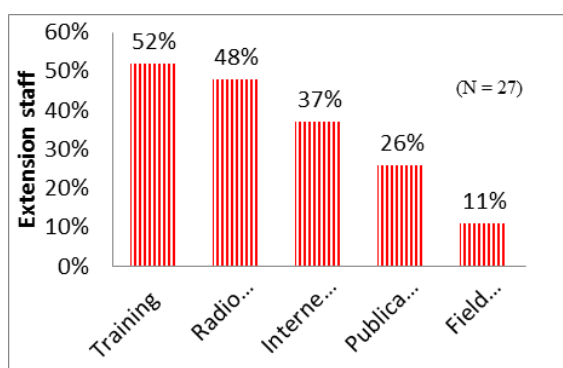


Figure 2. Ways of updating technological knowledge

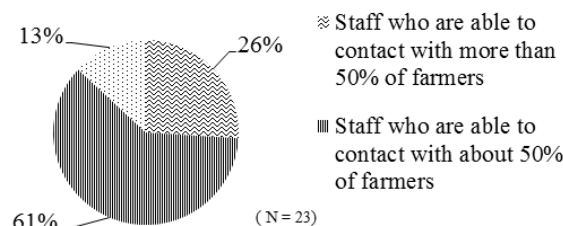


Figure 3. Field extension staff who are able to contact with farmers for extension activity in assigned area

years for assistant staff officer, 3 years for deputy assistant staff officer, and 1 year for apprentice staff (Table 1).

Trainings experience and knowledge on extension approach of all extension staff

Table 2. Trainings attendance of all extension staff

No. of trainings	TSO (N = 1)	DSO (N = 4)	ASO (N = 11)	DASO (N = 11)	AS (N = 4)	All (N = 31)
Average	3	3	3	1	0	2
Maximum	0	5	5	2	0	5
Minimum	0	2	2	0	0	0

Table 3. Extension staff' aspirations on job and moti-

Item	Position				
	DSO (N = 4)	ASO (N = 10)	DASO (N = 9)	AS (N = 4)	All (N = 27)
Aspiration					
To get high position in DOA	1 (25)	4 (40)	6 (67)	1 (25)	12 (45)
To go aboard for further study	0	0		3 (75)	3 (11)
To get successes in work	1 (25)	1 (10)	1 (11)	0	3 (11)
To run a private agricultural enterprise	2 (50)	5 (50)	2 (22)	0	9 (33)
Motivation for further study					
No motivation	3 (75)	7 (70)	5 (56)	1 (25)	16 (59)
Motivation	1 (25)	3 (30)	4 (44)	3 (75)	11 (41)

Note: Figure in the parentheses represents percentage

Table 4. Number of assigned villages, contact farmers and field visits of a field extension staff

Item	Position				
	DSO (N = 4)	ASO (N = 9)	DASO (N = 6)	AS (N = 4)	All (N = 23)
Assigned villages					
Average	14	4	4	1	5
Maximum	26	7	5	2	26
Minimum	4	2	3	1	1

Average number of trainings attended by all extension staff was 2 with maximum 5 and minimum 0. Training experiences were so much different according to position (Table 2). In training experience, 83% of staff had pre-service training experience because it was compulsory training for them. The common types of training were field crop (25%), soil and water and rural development (21%). On the other hand, in service (8%), seed technology (8%) and plant protection (4%) training were in few (Figure 1).

Ways of updating technological knowledge and motivation for personal improvement

In Figure 2, common ways of updating technological knowledge by extension staff were training (52%), radio and TV (48%) and internet sources (37%) can be observed respectively. Most respondents expected to get high position (45%), and intended to run a private agricultural enterprise (33%). On the other hand, 11% of respondents had the ambitious for further study in abroad and to get successes in work. Only 41% of respondents had

Table 4. Number of assigned villages, contact farmers and field visit to assigned villages of field extension staff (Contd ;)

Item	DSO (N = 4)	ASO (N = 9)	DASO (N = 6)	AS (N = 4)	All (N = 23)
No. of contact farmers					
Average	10	13	8	6	10
Maximum	15	30	15	10	30
Minimum	6	5	4	4	4
Field visit					
During crop season	1 (25)	5 (56)	3 (50)	2 (50)	11 (48)
Regular	3 (75)	4 (44)	3 (50)	2 (50)	12 (52)

Table 5.Types of extension method used by field extension staff

Methods	DSO (N = 4)	ASO (N = 9)	DSSO (N = 6)	AS (N = 4)	All (N = 23)
Group meeting at village tract	4 (100)	9 (100)	6 (100)	4 (100)	23 (100)
Farm and home visit	4 (100)	9 (100)	6 (100)	4 (100)	23 (100)
Farmer field school	0	1 (11)	2 (33)	0	3 (13)
Demonstration	1 (25)	9 (100)	6 (100)	3 (75)	19 (83)
Pamphlets	3 (75)	3 (33)	0	0	8 (35)
Field day	0	5 (56)	1 (17)	0	6 (26)

motivation for further study to upgrade their educational level (Table 3).

Working condition of extension staff

Assigned villages for individual field extension staff was 5 villages in average with maximum 26 villages and minimum 1 village. Each field extension staff had 10 contact farmers in average with maximum 30 and minimum 4. In field visit of field extension staff, 52% of staff had regular normal visit to assigned area and 48% visited only in crop season (Table 4). Based on the facts mentioned above, 61% of staff were able to contact with about 50 % of their total clients farmers in assigned area (Figure 3) and main reasons for contacting farmers were to conduct, and observe demonstration (78%) and to record and data collection (61%) (Figure 4). Types of extension methods used by extension staff can be observed (Table 5). Common methods used were group meeting at village tract (100%), farm and home visit (100%), followed by demonstration (83%), and while pamphlets, field day and farmer field school methods were used by a few percent of staff.

Extension linkage with DAR, private sector, and

NGOs

Linkage between field extension staff and DAR, private sector, and NGOs can be seen (Figure 5). Field extension staff had contact with DAR (52%), private sector (35%) and NGOs (26%). Average frequency of contact between field extension staff and DAR as well as private sector was 2 times per year and average contact frequency between staff and NGOs was one time per year.

Reasons of making linkage between DOA and DAR

Regarding with linkage between DOA and DAR, 81% of staff had perception on making linkage. Most staff perceived that linkage was needed to do more cooperation, and exchange of experiences between DOA and DAR at the township level (38%) and to get quality seed and new variety sufficiently (35%). Moreover, some staff contacted with DAR to learn good cultural practices and to conduct yield trials more than before (15% and 12%). Based on KI interview, 54 years old, female staff officer of DOA perceived that DOA and DAR needed more contact and more coordination such as close observation and suggestions on field trials. DOA staffs needed to get detail information on crop variety for more convenient in carrying out farm trials. Perception of 55 year old, male, research officer of DAR was the need to be strong linkage between extension -farmers-research.

Perception of respondents from DOA and NGO on linkage between DOA and NGOs

According to the perception of DOA staff officer (54 years old, female) and unit manager (41 years old, female) from Pakt Myanmar, two institutions had no collaboration in giving extension services to farmers and had a few contact in giving some data such as total loan per year. Although DOA in study area had some contacts and coordination with other NGOs/INGOs in conducting joint project on farmers' fields, the DOA (township level) needed to have more collaboration with local and international organizations. Perception of the staff officer was that NGOs/INGOs needed to give more supporting to farmers not only variety or seed but also some parts of production cost because farmers need more labor in conducting projects.

Therefore it is required to receive feedback from NGOs/INGOs regarding joint projects such as varietal test.

Perception of respondents from DOA and private sector on linkage between DOA and private sector

According to key informant interview, perception of staff officer (54 years old, female) was that DOA in Chaung Oo Township didn't connect with agrochemical companies because of their different institutional objectives. The DOA staff contacted agrochemical retail shops in the case of license for agrochemical sale, Certificate of Pesticides Application (CPA) trainings and quality check on agrochemical products. Perceptions of two staff from two private agrochemical companies (30 years old and 34 years old, male) was they had not formal contact with DOA and no coordination in giving extension services to farmers. The reason was that

they had not same business in two institutions. They had a few personal contacts with friends from DOA in getting township profile and sown acres by crops and in discussion on agrochemical products. Output buyer (52 years old, male) responded that there was a few contact with DOA in buying and selling of products. Oil miller (56 years old, male) said that it was no contact with DOA.

All extension staff' perception on working environment

According to their working environment, 59% of staff didn't agree that they had top down linkage with the supervisor in their institution. Most staff thought that they received assigning equal duties (74%). However, most of the staffs from township level (56%) received uneven opportunity among same level from DOA and promotion system was mostly based on working performance (45%). They agreed on that they had group discussion about work (85%).

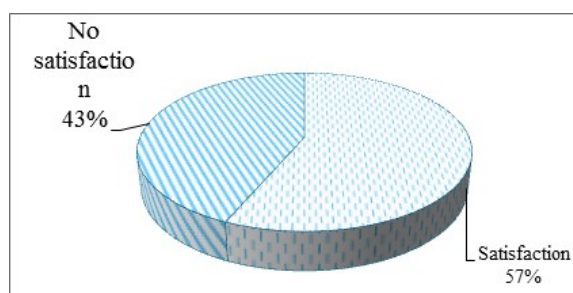


Figure 6. Satisfaction of field extension staff' on delivering extension services to farmers

Table 9 Extension staff' perception on improving agricultural extension at townshiplevel (N = 27)

Perception	No.	Percent
Need to upgrade the quality of extension staff by conducting trainings	26	96
Need to provide adaptable technologies, improved seeds adequately	21	78
Need to provide credit or inputs for persuading farmers for involving in extension activities	19	70
Need to have more contacts with farmers and to carry out suitable extension activities such as group meeting, demonstration	11	41
Need to have market for crop	4	15
Need to find more effective extension strategies and system	4	15

Satisfaction and perceptions on the problems of extension work

About 57% of staff satisfied on delivering extension services to farmers and 43% of staff had no satisfaction on that matter (Figure 6). In Table 9, the values of the extension staff' perceptions on their work are shown in descending order. In each item, four levels of the staff' perceptions namely strongly agree, agree, disagree and strongly disagree were given as their indications, and the scaling was done by assigning 4, 3, 2 and 1, respectively. Mean value of 3 and above indicated that the respondents agreed on lack of suitable market and price, no incentive for extension staff, budget constraints, and poor transportation facilities. They also agreed that extension staff' number were inadequate and too many farmers to give advice for doing extension work effectively. Another problem faced by extension staff was weak trusts of farmers on DOA and most farmers are illiterate.

Comments and suggestions of extension staff on improving extension at township level

All extension staff' perception on improving agricultural extension can be seen on Table 9. Most staff perceived that the capacity of staff needed to

upgrade, thus they need more training experiences and technological knowledge (96%). 78% of staff perceived that DOA should provide local specific technologies, improved seeds and varieties to farmers adequately. They also perceived that provision of credit or inputs to farmers for persuading their participation and to get interest in extension activities because DOA staff had nothing to give input resources to farmers in carrying out extension activities (70%). Some staff comments were DOA should have more contact activities and carry out demonstration with farmers because of farmers believe on seeing (41%), more effective extension strategies and system (15%) and suitable market for crop (15%).

Perception of respondents from DOA, DAR and NGO on institutional management and system of township level DOA

Key informant interviews were conducted to examine the perception of respondents from DOA, DAR and NGO. Staff officer (54 years old, female, Department of Agriculture) perceived that only some farmers interested in extension activities and technologies given by DOA because technologies given were not useful and suitable to real conditions. DOA should have more contacts and activities with farmers because farmers believe on seeing. More provisions such as inputs or credit to farmers in carrying out meeting and extension activities such as demonstration and variety trial are necessary. Moreover, for extension staff, they need more training experiences and it is needed to raise the educational level of staff. Perception of unit manager (41 years old, female, Pakt Myanmar) was that at township level, it is needed to make the strength stronger of staff and to have more contact with farmers. Rural farmer need more credit because agricultural loans for farmers got from Myanmar Agricultural Development Bank was not enough. According to the perception of research officer (55 years old, male, DAR), DOA staff should supervise field trials carefully and it is essential to know farmers' conditions and their needs more closely and precisely.

Perception of respondents from private sector on institutional management and system of town-

ship level DOA

Perceptions of output buyer, respondents from agrochemical retail shops and agrochemical companies were DOA need to have close contact and conduct group meeting with farmers carefully. Moreover, DOA extension activities should be accompanied with provision of inputs to farmers for persuading them in these activities, for example group meeting. Most farmers use traditional techniques in their crop production, they have weak knowledge in post-harvest technologies and agrochemicals usage. It is really needed for farmers to know and use modern new technologies. Moreover, it is necessary to distribute quality seed adequately and farmers need more credit for their crop production, suitable market and price. Moreover, some DOA staff needs experience in contacting and dealing with farmers.

Conclusion and Recommendation

In the study, female extension staff percent was higher than male percent according to gender issue and most were single. Most extension staff was diploma holders. Staff updated technological knowledge with different types of trainings, but training experiences were received regardless of position. PP and seed technology trainings were very few. Moreover, most staff had no motivation for further study to raise their education level. At the DOA township office, individual staff had too many farmers to contact for technological transfer. About half of extension staff had normal regular trip to assigned area and they were able to contact about half of client farmers and their main reason to contact farmers was to conduct and observe demonstration farms and to record and collect data. A few percent of staff used farmer field school, field day and pamphlets.

Based on the results of SSI and KI interviews of respondents from DOA, DAR, NGOs and private sector, current linkage between DOA and DAR needed to be strong. Linkage with NGO/INGOs was weak. Formal linkage of DOA with private company was not found except with retail shops. Perspectives of DOA on working environment: most staff perceived their assigned duties were equally distributed, and they had work discussion. However, some disagreed on fact that current promotion system was

merit based promotion and received opportunity equally. Perspectives of respondents from different institution on DOA can be categorized into two issues. Firstly, in concerning with extension staff, adequate provisions to extension staff are required and it is also needed to raise number of qualified staff in terms of academic background, technological knowledge and communication skill. Secondly, in concerning with extension work, efficient and sufficient budget allocation is required in functioning extension activities and services. Provisions of inputs and local specific technologies to farmers are necessary. More contact and extension activities with farmers are required.

Based on the findings, more provision of training opportunity and trainings programs focused on training needs of staff are essential. Extension program planning with consideration of man power requirement at township level is also required. Institutional strengthening and capacity building at the township level are required. Methods such as FFS and field day, mass media that all level of farmers can participate and improve their knowledge should be used increasingly in present extension services. The connection and flow of information between extension and research should be increased to meet actual needs of farmers. For improvement of agricultural extension in efficiency, effective coordination and contact between public-private extensions is essential. Suitable career paths including well defined promotion system and opportunities on systematic basis are required in extension organization. A careful planned system of adequate field allowance and housing and transport facilities should be developed. It is essential to create an accessible market and price for farmers. An effective extension strategy is required to adopt bottom-up participatory approaches with farmers to identify their livelihood systems and knowledge and technological needs.

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