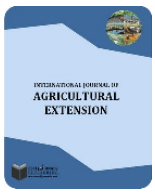

Available Online at ESci Journals
International Journal of Agricultural Extension
ISSN: 2311-6110 (Online), 2311-8547 (Print)
http://www.escijournals.net/IJAE

ENHANCING EFFECTIVENESS OF EXTENSION STRATEGIES: THE CASE OF MADRASAH SA BASAK (MSB) IN LANAO DEL SUR, PHILIPPINES

[a]Leo M. Aguanta*, [b]Judith D. Intong
[a] Department of Agricultural Education and Extension, College of Agriculture, Mindanao State University, Marawi, Philippines.
[b] Department of Agricultural Education and Extension, College of Agriculture, Central Mindanao University, Philippines.

A B S T R A C T

Madrasah Sa Basak (MSB), a community-based and participatory educational campaign for rice production, is an extension program of Mindanao State University (MSU) and Philippine Rice Research Institute (PhilRice). This study was conducted to evaluate the MSB particularly its effectiveness in terms of Meranao rice farmers' awareness, knowledge, adoption of MSB practices and productivity (AKAP) and identify the farmer-related and MSB- related factors that affect the effectiveness of the MSB program. The descriptive-correlational type of research was used and data was gathered from the sixty (60) recipients of the MSB program in the province of Lanao del Sur, Philippines using a structured questionnaire and analyzed with Statistical Package for the Social Sciences (SPSS). The findings revealed that MSB program is highly effective in improving clienteles' awareness and knowledge level as they adopted the recommended MSB practices on a trial basis in attaining farm productivity. The effectiveness of the MSB program among Meranao rice farmers in Lanao del Sur, Philippines is significantly associated with availability of farm inputs, farm size, and appropriateness of MSB strategies. The MSB program is effective when implementing strategies integrate the Islamic principles using group and flexible curriculum to Meranao rice farmers who have bigger farms and are provided with farm inputs. This is an important empirical finding that demonstrates appropriateness of extension strategies in program implementation and the need for re-implementation of the MSB program over a wider coverage in collaboration with different institutions both government and non-government that could provide the varied infrastructure support vital to the effectiveness and sustainability of the MSB program.

Keywords: MSB, AKAP, Effectiveness, Islamic principles, Meranao, Philippines, Rice farmers

INTRODUCTION

Madrasah Sa Basak (MSB) program is one of the successful extension programs in Lanao del Sur Philippines. The MSB is designed to promote rapid technology transfer, and founded on the principles of "to see is to believe" and "learn by doing", with six components such as: on-farm training, take home seed, techno-demo, weekly field meetings, weekly radio broadcast and barangay seed production. Its strategies include clustering into small group, participatory learning, flexible curriculum credibility build up and integration of Islamic principles. The technologies generated by scientist nowadays are so numerous for the rice industry anywhere to be improved sufficiently. For its part, the Philippines should have an advantage over other rice producing countries due to the presence of the International Rice Research Institute in Laguna, Philippines. Nevertheless, rice farming situation in the province of Lanao del Sur, Philippines is backward, in spite of the advances in neighboring provinces. These realities are attributed to poor technology transfer. The cultural features of the Meranao people (the most dominant Muslim tribe in the Philippines) have aggravated the problem of slow technology transfer. Their resistance to changes started during the period of colonialism and continues up to this time. However, their traditional attitudes of dominance and pride are being conquered by humility, respect and credibility to those who are involved in Islamic preaching (Masnar *et al.,* 2003).

The challenge of Meranao culture to extension may be heightened by a history of poorly executed participatory

* Corresponding Author:
Email: leaguanta@yahoo.com

processes when executives call for employee participation with no effective process of involvement, employees are quick to label such activity as placation at best and manipulation at worst. From Drath's view, this history builds a relationship that becomes a "social agreement" that takes time to change (Gallagher 2002). Moreover, Roling (1997) revealed that participation, if it is to become part of extension, most clearly is interactive and empowering. Any pretence to participation will result in little change. Allowing farmers just to come to meetings or letting a few representatives sit on committees will be insufficient. The MSB program is consistent with the statements of Campbell and Barker (1997) that, in the case of program directed to the ethnic group, efforts should consider the socio-cultural factors, which distinguish the group language, food preferences and religious beliefs of the people. The findings of the study of Cristovao and Portela (1997) showed that lack of continual evaluation is a major reason for the frequent failure of development projects and extension activities. It is deemed necessary to study the variables, which measure the effectiveness of the program. This study uses the conceptual theme emphasized by Evenson (1997) which includes farmers' awareness - knowledge -adoption -productivity (AKAP) sequence.

METHODOLOGY

The descriptive-correlational type of research was used to conduct the research study. This type of research is used in order to collect information describing the respondent and program-related factors and determine the type and degree of relationships existed among the key variables of the study.The target population of the study was the Meranao rice farmers in the MSB barangays of Lanao del Sur, Philippines. A complete list of the Meranao rice farmers who were involved in the MSB program during the 2006 dry and 2007 wet seasons was obtained from the Office of the Director of MSU-PhilRice in order to determine a sample size of sixty (60) Meranao rice farmers, who were selected through systematic sampling procedure whereby every Kth number was randomly selected from a list or set of direction (Gay & Mills, 2006). The sample size was determined by using McCall (1980) table "selecting sample size" at the 0.05 percent error rate. The data of the study are gathered using a semi – structured questionnaire, which were translated into Meranao dialect, subjected for content validity among the proponents and implementers of MSB program at MSU-PhilRice and was pre –tested for reliability with coefficient alpha=0.9498 indicating high reliability of questions used in data gathering. Prior to the conduct of the study, the completion of the entry protocol was duly considered. The home visit and face- to- face interview with the respondents were conducted. Farm visit was done only in a limited extent in order not to disturb the respondents while working on their farm. The difficulty of finding respondents during working hours led the researcher and enumerators to conduct interview after the noon prayer as Muslims pray five times a day. Thus, knowledge of the location of Mosque in every barangay is indeed helpful. The data collection is also facilitated by the relatives of enumerators residing in the barangay by helping locate the house of the respondents and accompanying the researcher and enumerators during the interview.

In describing the general characteristics of the respondents and effectiveness of the MSB program, percentages, frequency counts, mean and standard deviation are used. Effectiveness of MSB program is measured based on the mean of the following outputs and effectiveness ratings:

a. Awareness, Knowledge, Adoption and Production are measured using five-point Likert-scale:

5	fully aware/fully knowledgeable/fully adopted
4	highly aware/highly knowledgeable/adopted on trial basis
3	moderately aware/moderate knowledgeable/thinking to adopt
2	poorly aware/poorly knowledgeable/still evaluating to adopt
1	not aware/not knowledgeable/decided not to adopt

b. Production in rice farming is measured using the PhilRice Handbook (2006).

The following categories with effectiveness rating are used: very high (5), high (4), moderately high (3), low (2), and very low (1).

The t-test is used to determine the change in knowledge level of the Meranao rice farmers on MSB practices before and after MSB program. The correlation analysis is employed to determine the relationship between the selected independent variables with the dependent variable. All tests of significance were set at 0.05% level and analyzed using SPSS.

RESULTS AND DISCUSSION

Farmer–Related Factors: findings revealed that the Meranao rice farmers aged 40 years old who have taken basic education (79%), cultivating 2.46 hectares within16

years of farming experience and farm inputs available outside (97%) of the barangay (Table 1). MSB recipients were middle aged and functionally literate, capable of adopting the MSB practices. They are experienced farmers who are cultivating small farms. The farm inputs like fertilizers, seeds and chemicals are largely unavailable within the barangays of Lanao del Sur, Philippines. The MSB however, provided farm inputs to the rice farmers.

Table 1. Frequency distribution of Meranao Rice Farmer – Related Factors.

	Frequency	Percentage
Age		
20-29	7	11
30-39	24	40
40-49	19	32
50-59	10	17
Mean = 40		
Level of Education		
Basic Education (K-12)	47	79
Higher Education (College)	13	21
Farm Experience (in years)		
1-9	16	27
10-19	19	32
20-29	20	33
30-39	04	07
40-49	01	01
Mean 16		
Farm Size in Hectares		
1.0-1.99	16	27
2.0-2.99	24	40
3.0-3.99	07	11
4.0 and above	13	22
Mean=2.46		
Availability of Farm Inputs		
Within the barangay	02	03
Outside the barangay	58	97

MSB Related Factors: Among the four MSB-related factors, the Meranao rice farmers assessed MSB principles as highly acceptable (Mean = 4.54), and MSB strategies as highly appropriate (Mean = 4.53) (Table 2). The Meranao rice farmers looked at the MSB program based on the principles it stand for and the strategies on how the program is being implemented. For instance, the MSB embraces the principles of to see is to believe and learning by doing, while its strategies includes the integration of Islamic principles, participatory learning, flexible curriculum, credibility build up and clustering into small groups. Meranao rice farmers relate rice farming activity to Islamic faith, like the practice of zakat (alms giving) after a bountiful harvest. For them, technology or innovation can be easily adopted if it is consistent or in accordance with Islamic principles. They prefer small group during seminar and training for effective communication and learning necessary for technology adoption.

Awareness of the MSB program: The average weighted mean (AWM) of 4.26 reveals that Meranao rice farmers are highly aware of the technology included in the MSB program: good quality seeds (AWM=4.33), high yielding varieties (AWM=4.32), straight row planting (AWM=4.37), integrated pest management (AWM=4.18) and integrated nutrient management (AWM=4.10) (Table 3). The findings show that technology package of MSB is widely disseminated among MSB Meranao rice farmers. Extent of awareness of any technology is necessary for its adoption.

Table 2. MSB –Related Factors.

Indicators	Average Weighted Mean	Adjectival Meaning
Acceptability of MSB principles		
To see is to believe	4.53	Highly acceptable
Learning by doing	4.55	Highly acceptable
Mean	4.54	Highly acceptable
Appropriateness of MSB Strategies		
Integration of Islamic principles	4.63	Highly Appropriate
Participatory learning	4.57	Highly Appropriate
Clustering into small groups	4.48	Appropriate
Flexible curriculum	4.50	Appropriate
Credibility build up	4.45	Appropriate
Mean	4.53	Highly Appropriate
Usefulness of MSB Components		
On-farm training	4.61	Most Useful
Take home seed	4.45	Useful

Continue…

Techno-demo	4.33	Useful
Weekly Field Meetings	4.40	Useful
Weekly radio broadcast	4.27	Useful
Barangay seed production	4.18	Useful
Mean	4.37	Useful
Competence of the MSB Implementers		
Credibility in Islamic preaching	4.37	Competent
Ability to explain topics clearly	4.30	Competent
Skills in field works	4.45	Competent
Ability to assist participants in every activity	4.35	Competent
Mean	4.37	Competent

Legend:
4.51 – 5.00 - Highly Acceptable/Highly Appropriate/Most Useful/ Highly Competent
3.51 – 4.50 - Acceptable/ Appropriate/Useful/ Competent
2.51 – 3.50 -Undecided
1.51 – 2.50 -Less Acceptable/ Less Appropriate/Less Useful/Less Competent
1.0-1.50 -Not Acceptable/Not Appropriate/Not Useful/Not Competent

Table 3. Awareness on the MSB practices in Lanao del Sur, Philippines.

MSB practices	Average Weighted Mean	Adjectival Meaning
a. Good Quality Seeds	4.33	Highly Aware
b. High Yielding Varieties	4.32	Highly Aware
c. Straight Row Planting	4.37	Highly Aware
d. Integrated Pest Management	4.18	Highly Aware
e. Integrated Nutrient Management	4.10	Highly Aware
Mean	4.26	Highly Aware

Legend:
4.51 – 5.00-Fully Aware
3.51 – 4.50-Highly Aware
2.51 – 3.50-Moderately Aware
1.51 – 2.50-Poorly Aware
1.00 – 1.50-Not Aware

Knowledge on MSB practices: There is a significant difference on the change of knowledge level of the Meranao rice farmers before and after MSB program especially on the use of High Yielding Varieties ($p<.01$) , Straight Row Planting ($p<.01$) and Integrated Nutrient Management ($p<.01$) (Table 4). This implies that MSB program has enhanced the understanding of the Meranao rice farmers on the importance of using High Yielding Varieties, Straight Row Planting and Integrated Nutrient Management to attain maximum yield.

Adoption of MSB practices: All (100%) of the MSB practices were adopted by Meranao rice farmers on trial basis. Thus, none of the practice was rejected (Table 5). Respondents were still on the trial stage of the adoption process. It can be concluded that MSB program has not been fully adopted yet by the Meranao rice farmers.

Table 4. Knowledge on MSB practices before and after MSB in Lanao del Sur, Philippines.

MSB practices	Mean		SD		t-value	Sig*
	Before MSB	After MSB	Before MSB	After MSB		
Good Quality Seeds	3.72	4.11	0.60	0.89	-2.79	0.01
High Yielding Varieties	2.48	4.23	0.60	0.73	-14.41	0.00
Straight row planting	1.88	4.35	0.63	1.05	-15.66	0.00
Integrated Pest Management	3.04	3.16	0.55	0.56	-1.207	0.32^{ns}
Integrated Nutrient Management	2.96	3.9	0.55	0.81	-7.40	0.00
Mean	2.82	3.95	0.38	0.52	-13.72	0.00

*Scale: not knowledgeable=1, poorly knowledgeable=2, moderately knowledgeable=3, highly knowledgeable=4, fully knowledgeable=5, * Significant at .05 level, ** Significant at .01 level, ns= Not Significant

Table 5. Adoption of MSB practices by Meranao rice farmers in Lanao del Sur, Philippines.

MSB Practices	2006 Dry Season		2007 Wet Season	
	Average Weighted Mean	Adjectival Meaning	Average Weighted Mean	Adjectival Meaning
Good Quality Seeds	4.33	Adopted on trial basis	4.35	Adopted on trial basis
High yielding Varieties	3.86	Adopted on trial basis	4.24	Adopted on trial basis
Straight row planting	3.59	Adopted on trial basis	3.58	Adopted on trial basis
Integrated Pest Management	3.57	Adopted on trial basis	3.60	Adopted on trial basis
Integrated Nutrient Management	3.67	Adopted on trial basis	3.78	Adopted on trial basis
Mean	3.80	Adopted on trial basis	3.91	Adopted on trial basis

Legend:
- 4.51 – 5.00-Fully Adopted
- 3.51 – 4.50-Adopted on trial basis
- 2.51 – 3.50-Thinking to adopt
- 1.51 – 2.50-Still evaluating to adopt
- 1.00 – 1.50-Decided not to adopt

Production (cav/ha) of the MSB Meranao rice farmers: The production levels of the respondents are categorized into: below 100 cavans per hectare and 100 cavans or more per hectare.

Based on the PhilRice Handbook on Palay Check System (2006), the average yield of the high yielding varieties promoted by the MSB program is 100 cavans/ha/cropping season. Based on this category, a little more than two-thirds (68%) of the respondents produced 100 cavans or more yield per hectare during the 2007 wet season. While nearly one – third (32%) of them have attained production level below 100 cavans per hectare during the same season. On the other hand, nearly two – thirds (62%) and a little more than one – third (38%) of the respondents have production level below 100 cavans per hectare and 100 cavans or more per hectare during the 2006 dry season, respectively (Table 6). This means that the production of the respondents was comparatively higher during the 2007 wet season than 2006 dry season. This is attributed to the availability of water during the rainy season and the absence of irrigation during the dry season.

Table 6. Production (cav/ha) of the MSB Meranao rice farmers during the 2006 dry and 2007 wet seasons.

Indicators	2006 Dry Season		2007 Wet Season	
	Frequency	Percentage	Frequency	Percentage
Below 100 cavans per hectare	37	62	19	32
100 cavans per hectare	23	38	41	68
Mean	96.94			

Effectiveness of the MSB Program: The MSB program is highly effective in promoting awareness, knowledge and adoption of the MSB technology package among Meranao rice farmers in Lanao del Sur (Table 7).

The data imply that the Madrasah Sa Basak program has strengthened the consciousness and understanding of Meranao rice farmers to apply or incorporate the MSB practices in their farming system. According to Rogers (1995) Knowledge of an innovation is usually preceded by awareness of a need, and it is need- awareness that precipitates active knowledge seeking behavior in order to address the need by adopting innovation. Increased awareness and knowledge are generally considered prerequisites to the adoption of new practices and technologies. As consequences, they have benefited from the program to some extent in terms of productivity.

Factors Associated with the Effectiveness of MSB: Results show that the effectiveness of the MSB program is significantly associated with the farm size ($p<.05$), availability of farm inputs ($p<.05$), and appropriateness of the strategies ($p<.05$) with respective correlation coefficient of -.298, .278, and .299.

The findings imply that availability of farm input, farm size and appropriateness of the strategies play a significant role in the effectiveness of the MSB program. In rice farming, accessibility to farm inputs is imperative to boost farm production. However, findings show unavailability of farm input within the

MSB barangays. The MSB program however, advocated Take Home Seed, Techno- Demo and Barangay Seed Production to facilitate access to some farm inputs. On the other hand, farm size can impinge on the use of technology and the betterment of lives of farmers' family. The data show that the Meranao rice farmers have small farm size of 2.46 hectares. Appropriateness of the strategies affects how the MSB program is being carried out making all activities meaningful and relevant to the attainment of its goals and objectives. Meranao rice farmers prefer the integration of Islamic principles in the MSB program, its use of participatory learning and flexible curriculum.

Table 7. Summary results on the effectiveness of MSB program.

Measure of Effectiveness	Mean Score	Adjectival Meaning
Awareness	4.26	High
Knowledge	3.95	High
Adoption	3.80	High
Productivity	3.12	Moderately High
Mean	3.78	Moderately High

Legend:
4.51 – 5.00 - Very High
3.51 – 4.50 –High
2.51 – 3.50 - Moderately High
1.51 – 2.50 - Low
1.00 - 1.50 - Very Low

Table 8. Factors associated with the effectiveness of the MSB Program.

Variables Entered	Coefficient of Probability	Correlation
Farmer - Related Factors		
Age	.079	.553.ns
Educational Attainment	.010	0.940ns
Farming Experience	.181	0.169ns
Farm Size	-.298	0.022*
Availability of Farm input	.278	0.033*
MSB -Related Factors		
Acceptability of the principles	.180	0.173ns
Usefulness of the components	.369	0.102ns
Appropriateness of the strategies	.299	0.021*
Competence of MSB Implementers	.070	0.106ns

** p< 0.01 level (2 – tailed)
* p<.05 (2 - tailed)
Ns, not Significant

CONCLUSIONS AND RECOMMENDATIONS

The Meranao rice farmers rated the MSB program as highly effective in improving their awareness, knowledge level as they adopted the recommended MSB practices on a trial basis in attaining rice farming productivity. The effectiveness of the MSB program among the Meranao rice farmers is significantly associated with availability of farm inputs, farm size, and appropriateness of MSB strategies. Thus the MSB program is effective when implementing strategies integrate the Islamic principles using group and flexible curriculum to Meranao rice farmers who have bigger farms and are members of farmers' organizations.

The overall findings of the study suggests a need to re-implement the MSB program increasing its coverage and considering strategies that could sustain the program among Meranao rice farmers in Lanao del Sur. The MSB implementers together with the local government units in the province of Lanao del Sur, Philippines should establish linkage with the agribusiness sector to provide market support as regards farm inputs necessary in the practice of the MSB program. Efforts should be exerted so that all farmers should have equal access to input/output market to achieve equitable sharing of the outcomes of the program among its participants. For effective extension delivery system, the MSB program needs to be implemented within the bounds of the Islam religion using group/participatory approach and a problem – centered curriculum. There is also a need to improve the land tenure system among Meranao rice farmers to boost their production.

REFERENCES

Campbell, D.A. & Barker, S.C. (1997). Selecting appropriate methods in program delivery. In B.E. Swanson, R.P. Bentz& A.J. Sofranko (Eds.), Improving Agricultural Extension: A Reference Manual (pp 67-72).Food and Agriculture

Organization of the United Nations: Rome, Italy. FAO

Chamala, S. & Shingi, P.M. (1997). Establishing and Strengthening Farmer Organizations. In B.E. Swanson, R.P. Bentz& A.J. Sofranko (Eds.), Improving Agricultural Extension: A Reference Manual (pp 193-202).Food and Agriculture Organization of the United Nations: Rome, Italy. FAO

Cristovao A., Koehnen, T. &Portela, J. (1997). Developing and Delivering Extension Programmes. In B.E. Swanson, R.P. Bentz& A.J. Sofranko (Eds.), Improving Agricultural Extension: A Reference Manual (pp 57-66).Food and Agriculture Organization of the United Nations: Rome, Italy. FAO

Evenson, R. (1997). The Economic Contribution of Agricultural Extension to Agricultural and Rural Development. In B.E. Swanson, R.P. Bentz& A.J. Sofranko (Eds.), Improving Agricultural Extension: A Reference Manual (pp 27-38).Food and Agriculture Organization of the United Nations: Rome, Italy.FAO

Gallagher, T.J. (2002). Employee Participation in Decision Making in Extension: A Ladder of Participation to Reduce Cynicism. Journal of Extension (on-line), 40(5), Retrieved from; http://www.joe.org/joe/2002october.

Gay, L. R. & G. E. Mills, (2006). Educational Research: Competencies for Analysis and Applications (8th ed.). Upper Saddle River, N.J.: Merrill/Prentice Hall.

Masnar, A.O., Macabalang, B.S. & Dimala, A. (2003). Madrasah SaBasak: A Participatory Field School for Meranao Rice Farmers. Mindanao Journal, 26(5). 130-133.

McCall, C. (1980). Sampling and Statistic Handbook for Research in Education. National Education Association. USA.

Pinoy Knowledge Bank. (2013). Palay Check System. http://www.pinoyrkb.com. Retrieved on 15.01.2013.

Rogers, E.M. (1995). Diffusion of Innovations. 4th Edition. New York,NY: The Free Press

Rola, AC., Jamias, S. & Quizon, J. (2002). Do Farmers Field School Graduates Retain and Share what they learn? An investigation in Iloilo, Philippines. Journal of International Agricultural and Extension Education, 9(1)65–76.

Roling, N. (1997). Extension's Role in Sustainable Agricultural Development. In B.E. Swanson, R.P. Bentz& A.J. Sofranko (Eds.), Improving Agricultural Extension: A Reference Manual (pp 181-192).Food and Agriculture Organization of the United Nations: Rome, Italy.