

GLOSSARY OF ABBREVIATIONS

AFMA	Agricultural Modernization Act
AT	Agricultural Technician
ATI	Agricultural Training Institute
BGY	Barangay
BEW	Barangay Extension Worker
BLGU	Barangay Local Government Unit
CBFM	Community-Based Forest Management
DA	Department of Agriculture
DFS	Diversified Farming System
FFS	Farmers Field School
FSC	Financial Service Center
FTG	Farmers Training Group
IRA	Internal Revenue Allotment
ISFP	Integrated Social Forestry Program
LOI	Letter of Instruction (from Office of the President)
MAFC	Municipal Agriculture and Fishery Council
MAO	Municipal Agricultural Officer
MLGU	Municipal Local Government Unit
OMAG	Office of the Municipal Agriculturist
OPAG	Office of the Provincial Agriculturist
PLGU	Provincial Local Government Unit
PO	Peoples Organization
RA	Republic Act
RAFID	Regional Agriculture and Fishery Information Division
RDE	Research Development Extension
RFU	Regional Field Unit

RIARC	Regional Integrated Agricultural Research Center
RIFRC	Regional Integrated Fishery Research Center
RO	Religious Organizations
SB	Sangguniang Bayan
SUC	State Universities and Colleges
UBA	Upland Barangay Association
UCO	Upland Community Association
UDP	Upland Development Program

EXECUTIVE SUMMARY

The implementation of RA 7160 (Local Government Code) and 8435 (AFMA) have placed the responsibilities of agricultural and environmental development on the MLGUs. The new order of national development is to look down rather than look up to the higher levels of government in terms of accountability. Even with the IRA, there has never been the luxury of funds for development in the MLGUs and the available option is to upgrade efficiency of MLGU services for less cost but high outputs.

LOI 1260 (Integrated social forestry stewardship program) and EO 263 (CBFM) allowing the practice of agriculture in the forest domain requires efficient agricultural extension service by the MLGUs to institute proper resource management and to increase farmers' incomes. Additionally, these legal provisions have to be responded with committed political leadership and efficient organizational mechanism by the MLGUs especially that the agriculture sector is the largest employer of people and the heaviest user of natural resources.

The MLGUs as partners in the UDP have successfully pursued the promotion of proper resource management and the enhancement of higher incomes in the uplands. Its initial success however needs a framework or model of extension service for the continuance of the development processes after the conclusion of the UDP.

This model explicitly defines the proven processes of the extension service adapted in the UDP and aims to integrate them with that of the lowland areas. It builds upon the existing extension system used in the lowlands but introduces strategies to ameliorate the system's inadequacies and deficiencies. It puts premium on building the efficiency of the service with reasonable operational cost but high economic returns.

The extension service mechanism in the barangays starts with the ATs who carry the technological packages for introduction to the officers of the BLGUs, UBAs, and UCOs; the BEWs; the members of the FTGs; and, the DFS farmers, for collective planning, message delivery, provision of technical services and technology adoption by the farmers. The mechanism provides the framework of

complementation among the groups and participation by the farmer clientele thru their collective action plan and defined roles. Its dynamics shall be closely monitored by the MAO. The same mechanism shall be followed in the replication areas but the resource base or facility have to be established prior to its operation.

The salient characteristics this extension service model are as follows:

1. Defined administrative structure and accountability from the Mayor down to the ATs
2. Adequate policy, program and financial support
3. Extensive use of groups in technology transfer (BLGU, UBA, UCO, RO/PO, DFS farmers, LCs, FTG, FSC)
4. Specific geographic coverage of ATs and definite schedule of work in barangays. Avoid interruption on ATs' extension work by unplanned conferences and short trainings. For extreme needs such short trainings and conferences have to be made in time with the AT's weekly schedule at the OMAG.
5. ATs to provide annual barangay and household profiles for use in evaluation
6. Modular extension messages on topics agreed between farmers and the ATs
7. Planned and relevant trainings of ATs with field trips
8. Technical support from the PLGUs and DA-RFU in terms of trainings of ATs and providing production manuals out of research outputs
9. Less paper works for the ATs
10. Monitoring of events by the UBA and annual physical evaluation of projects carried out by the extension service by a team (e.g. MPDC, Budget Officer, MAO) organized by the Mayor
11. Implementation of the relevant recommendations by the evaluation team.

The model in its efficient implementation, aims to achieve economic returns for the farmers, enhance local business, and contributes to the coffers of the MLGU. The model's functionality is set for a period of three years after which farmers may have moved up to higher levels of development and oriented towards cost-sharing scheme of extension service.

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MODEL FOR THE INSTITUTIONALIZATION OF THE UPLAND EXTENSION SERVICE BASED FROM THE UDP EXPERIENCE

Introduction

Rationale

Extension service as the software in development programs, plays the pivotal role in goal attainment. In the UDP, it carried out technology transfer that brought economic and social improvements in the program areas. Its sustained-efficiency however is a major concern particularly after the conclusion of the UDP, when the upland development processes are expected to proceed in the program areas and ultimately replicated region-wide.

This document offers a model for the design and management of extension service in the uplands using the experiences of the UDP with the partner institutions. It builds upon the current extension system in the lowlands but introduces the mechanisms to ameliorate the system's inadequacies and deficiencies. The document recognizes the competing priorities for budgetary allocations and therefore put premium on building the efficiency of the extension service with reasonable operational cost but high economic returns. Finally, the document as it explicitly presents the proven processes in carrying out development in the uplands, aims for the integration of the extension service with that of the MLGU's lowlands and the coastal areas.

Foundation of the Model

This extension model takes into account the insights from the review of the current state of extension system under the RA 8435 (AFMA) and RA 7160

(Local Government Code) and information from consultations with farmers, ATs, BEWs, Farmers' Associations in the uplands and instrumentalities of the MLGUs, PLGUs, the Regional Field Units of the Department of Agriculture, particularly the RIARCs, RIFRCs and ATI. It builds upon the existing administrative structure but infused several elements in the following areas: (1) the operational mechanism at the municipal level; (2) the content and delivery of extension messages; (3) the extensive use of organized groups for extension; (4) strong research-extension linkage (5) roles and social responsibilities of stakeholders.

Resource Base of the Upland Extension Service

The model uses organized groups and structures established by the UDP as resource base or facility to enhance the efficiency of extension service and are as follows: DFS model farms, the BEWs, UCOs, UBAs, FSCs, FTGs, the municipal learning centers and other trained farmers. It also includes technological support institutions like the MLGUs (ATS MAOs), the PLGUs, the DA-RFUs (RIARC and RIFRC), the SUCs and the national research and extension institutions under the DA.

Requisites of Sustainable Extension Service

To enhance relevance and efficiency, the model addresses the major requisites of a sustainable extension service for upland development as follows:

1. Recognition on the urgency of resource management in the uplands by responding to the grim reality that the uplands are the integral part of the biosphere which when not properly used are the origins of calamities causing economic and social disasters in the lowlands and coastal areas.
2. LOI No. 1260 (Integrated social forestry stewardship program) and E.O. 263 (CBFM) allowing farming in the forest domain requires an efficient agricultural extension service for proper resource management.

3. Committed political leadership and efficient organizational mechanism of the MLGU as mandated by the state to develop agriculture and preserve the environment in respective areas, the agriculture sector being the largest employer of people and most extensive user of natural resources.
4. Strong policy and program support
5. Involvement of the farmers and stakeholders in extension activities
6. Well-defined roles and coverage of ATs; planned trainings for ATs
7. Relevant and effective extension messages
8. Coordination and complementation among key players in the extension
9. Economic rewards from the extension service in terms of farmers' increased productivity and profitability

Components of the Upland Extension Service Model

This model is organized with the following components: purpose; mandate; administrative structure, operational structure, resource base and roles of organizations and groups; roles of ATs; geographic coverage of ATs; office of ATs; frequency of ATs work at each barangay; extension message; training of ATs; evaluation of changes brought about by extension service including ATs performance. The model's components are described below.

Purpose

The purpose of this model is carry out technology transfer for agricultural and environmental development in the municipalities as articulated in the respective municipal and barangay development plans. The model also includes the provision of basic services that will enhance technology transfer to the farmers.

Mandate

Section 17 of RA 7160 (Local Government Code) and provisions of RA 8435 (AFMA), mandates the MLGUs to carry out agricultural extension services for purposes of development and welfare of the inhabitants. Those provisions form the basis for this extension service model.

Administrative Structure

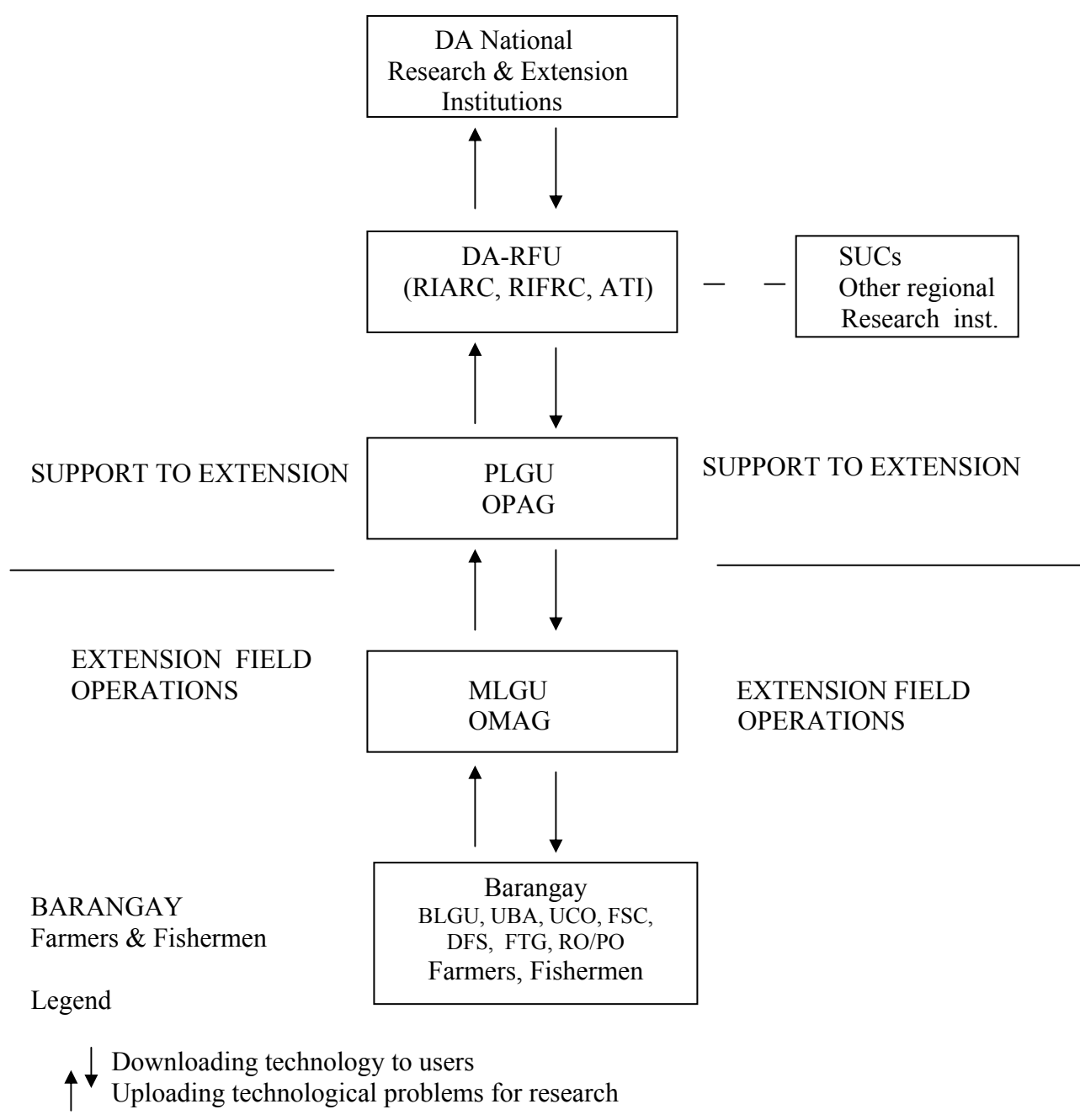
This component defines the roles and relationships among institutions and individuals involved in research and extension operations from the national, regional, provincial, municipal and barangay levels. It defines in detail the roles and relationships of individuals involved in extension work at the municipal and barangay levels where extension operations are carried out.

The nation's research and extension system

This extension service model for upland development adopts the national research and extension system designed for the AFMA. However it introduces new strategies and procedures internal to the AFMA system.

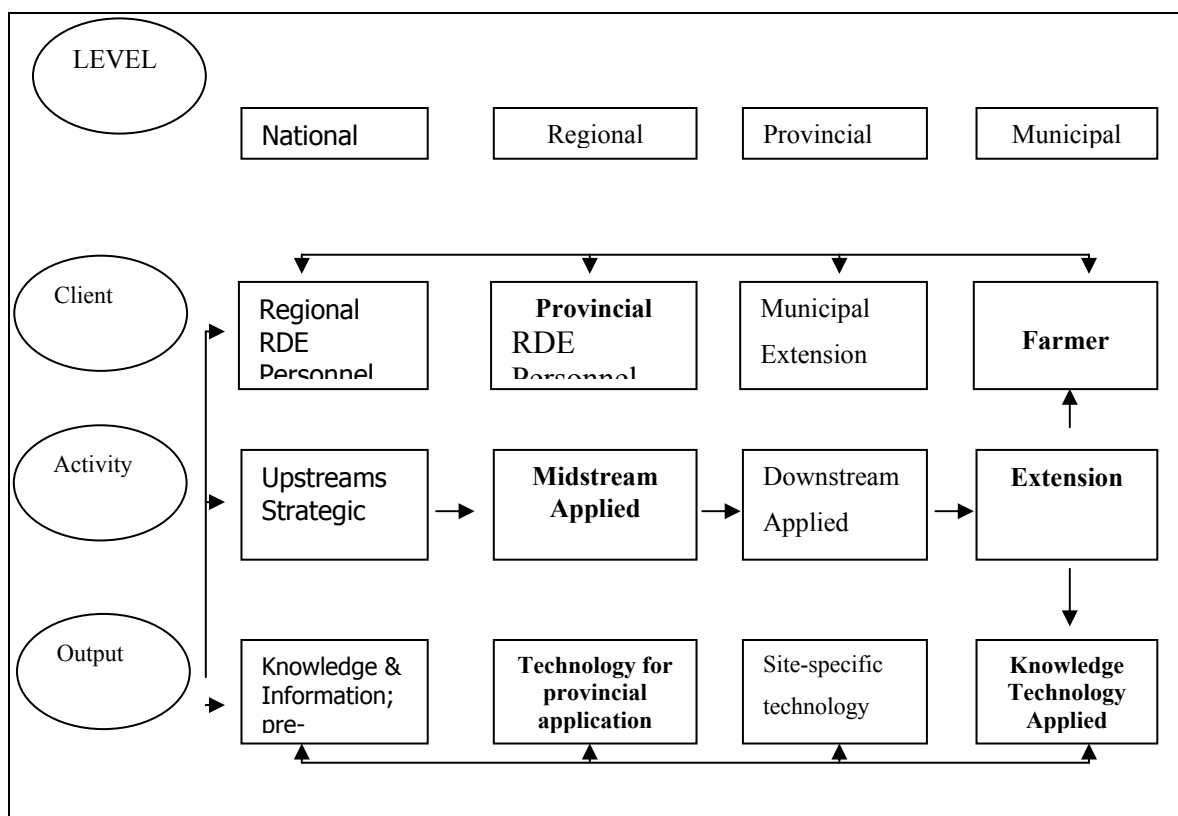
The nation's research and extension system is graphically shown in Figure 1. The system consists of the national research and extension institutions; the regional instrumentalities of the DA-RFU, particularly the RIARCS, FIFRCS and ATI, including the SUCS and other research institutions operating in the region; the provincial instrumentalities of the PLGUs, the municipal instrumentalities of the MLGUs; and the farmers and fishermen in the barangays.

Figure 1. The Nation's Research and Extension System (RDE)



In this system, extension operations with the clientele farmers and fishermen are in the municipal level while the support to extension are provided by the PLGU, the regional and national agencies, as shown in Figure 1 and Figure 2, the continuum of extension and research relationships.

Figure 2. The Research Development Extension (RDE) Continuum and Relationship



Regional Research and Extension System

The regional research and extension agencies form part of the national system and they are as follows: the DA-RFU, particularly the RIARC, RIFRCs and ATI, the

SUCs, other research agencies like the PCA, PCC, etc. They perform midstream applied research on different commodities as support to extension.

Regional researches are coordinated by the RIARC for crops and livestock and the RIFRCs for aquatic commodities. To enhance coordination, regional research agencies have formed consortiums to integrate planning of researches. Coordination is also made operational by furnishing copies of outputs from completed researches to the DA-RFUs as reference in making manuals and techno guides for extension.

The Provincial Research and Extension System

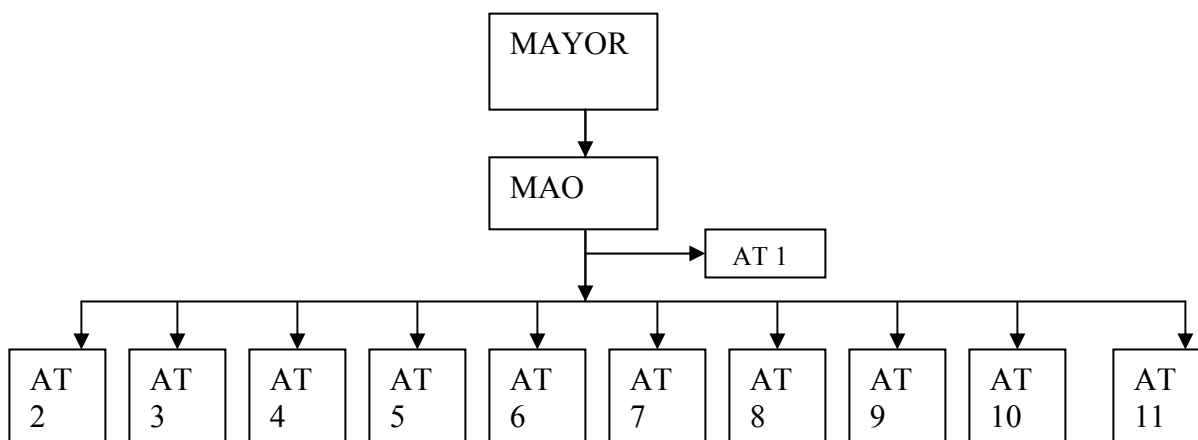
The PLGUs are tasked to conduct downstream site-specific research. They are also tasked to interpret, multiply and distribute manuals to the MLGUs. The PLGU personnel may act as Subject Matter Specialists when technical problems arise at the field.

The Municipal Administrative Structure for the Extension Service

This model introduces a deterministic extension service structure at the municipal level as the area of extension operations. It places the municipal extension organization in a single line of command from the municipal executive to the MAO and to the ATs who are technically supported by subject matter specialists from the OMAG and the OPAG and aided by the BEWs, the DFS model farmers, the BLGUs, UCOs, UBAs, FTGs and other organized groups of farmers in the uplands. In this model, the ATs have definite barangay coverage, regular weekly schedule of doing extension work in the assigned barangays with modular messages on subject areas agreed between himself and the farmers.

A sample municipal administrative structure of the extension service for the uplands, lowlands and coastal areas is shown in Figure 3.

Figure 3. The Sample Municipal Administrative Structure of Extension Service



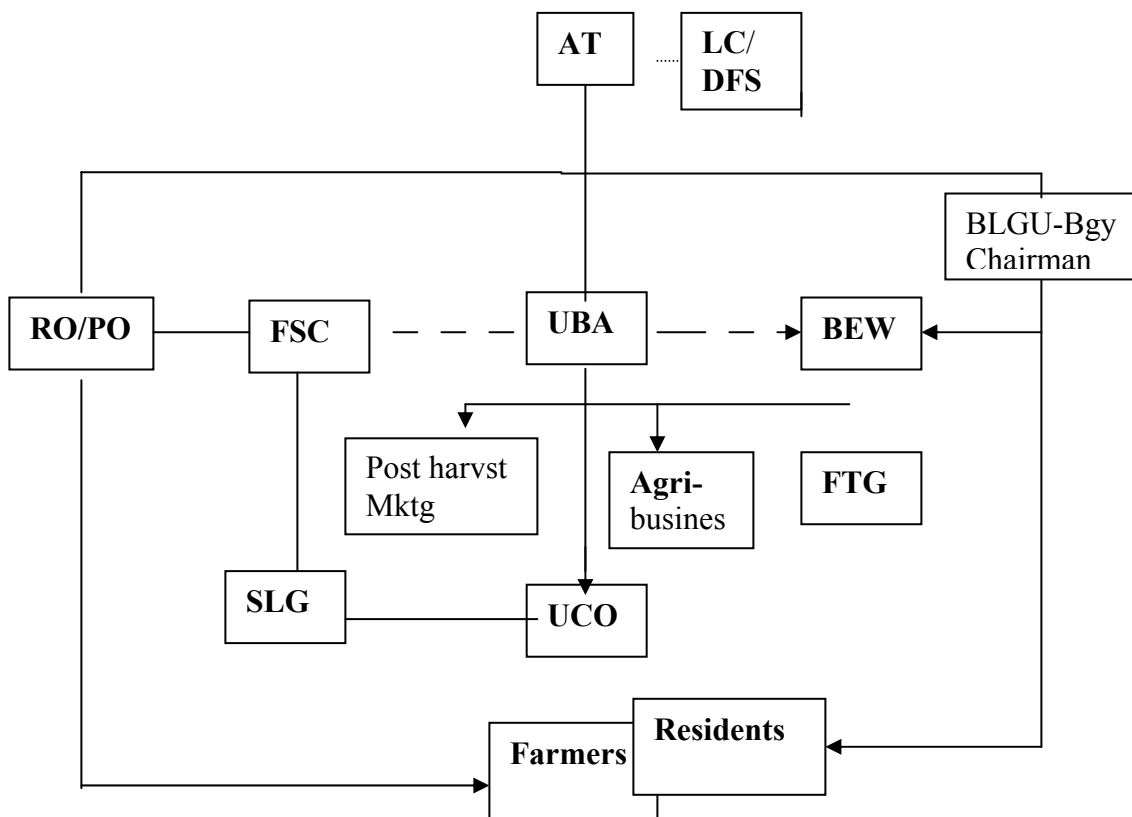
The Barangay Operational structure for the extension service

The operational structure in Figure 4 depicts the mechanism and dynamics of the extension service in the barangay. The structure's dynamics starts with the AT who carries the technological packages and introduces such packages to the officers of the BLGU, UBA, and UCO; the BEW; the members of the FTG; and, the DFS farmer, for the coordinated delivery of extension messages to the farmers. The structure also works upward from the farmers or residents who impinge on the aforementioned officers for their needed extension messages and services. The structure puts the DFS farmer with his farm as the learning center to serve as venue for learning activities and sources of planting materials, or the BLGU may put up its learning center so long as it can sustain the operations.

The structure consists of two sets of organizations working together in the barangay: (1) the BLGU for governance and (2) the UBA-FSC for livelihood. It provides the mechanism for the BEW who is administratively under the BLGU, to work with the UBA- FSC. Its dynamics in the field work through the roles of the resource base or extension service facility which are described in the succeeding

pages. The same structure shall be followed in the replication areas but the resource base or facility has to be established prior to the functioning of the mechanism.

Figure 4. The Barangay Operational Structure of the Upland Extension Service



Roles of the MLGU and BLGU Officials/Personnel, Barangay-based Associations, Groups and Individuals

Roles of the municipal executive (Mayor)

Provisions of RA 7160 and 8435 define the agricultural and environmental development functions of the MLGUs. Those legal instruments point to the Mayor of the MLGU being the head of the political subdivision of the republic, to translate national goals in his area of responsibility, particularly on the agricultural and environmental development. Additionally, Section 17 of RA 7160 stipulates that the MLGU has to provide extension services for agricultural and environmental development which are supported by Section 444 pertaining to power, duties and responsibilities of the Mayor. Those provisions are impetus for the Mayor's performance and the corresponding outputs as the legacy from the service.

Roles of the MAO

Under the direct supervision of the Mayor, the MAO has to plan and implement agricultural projects including soil and environmental conservation. The MAO supervises the ATs assigned in the uplands, lowlands and coastal areas and provides technical and moral support in project implementation. The MAO shall identify training needs of the ATs and request the PLGU and the DA-RFU to package and conduct the trainings.

The MAO shall be evaluated on the overall performance of agricultural and environmental projects of the municipality.

Roles of the Barangay Captain

As the head of the BLGU, the barangay captain is concerned with development and well-being of his constituents. He is in a strong position in the BLGU structure to provide policy and program support to upland development particularly in the adoption of technological messages.

Roles of ATs

The ATs are directly involved in extension operations with the clientele in the field. Although the basic functions of ATs are on the management of the teaching-learning processes, this model includes the provision of some services by the ATs to enhance technology transfer to the clientele. In the context of upland development, the ATs role are as follows:

1. Implement the cooperative extension service mechanism with the BLGU, the
barangay organizations and the farmers.
2. Prepare annual barangay and household profiles for data base.
3. Provide assistance in farm planning
4. Prepare learning modules for the farmers' classes
5. Conduct farm classes with farmers, women, out-of-school youths
5. Conduct periodic trainers' trainings to the BEWs and members of the FTGs to enable them to respond to farmers' consultation on urgent farm problems while the AT is at the other barangays.
7. Coaching the BEWs, UBAS, UCOS, DFS farmers, FTGs on agri-business, post harvest, marketing, savings mobilization and others
8. Conduct field demonstrations
9. Attend to consultations at farmers field
10. Assist farm organizations in the maintenance and upgrading their capabilities
11. Assist farmers in the preparation of loan and marketing documents

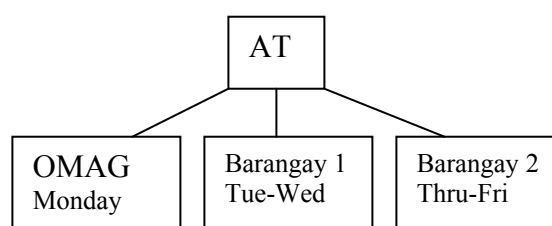
12. Assist farmers in securing tenurial instruments
13. Liaison work for linkages with processors and institutional buyers of products
14. Act as liaison man to the MLGU offices thru the MAO.

Geographic coverage of ATs - For efficiency of extension operations, the ATs shall have definite number of barangays to cover. The ATs and the MAO shall agree on the AT's coverage based on the barangay's technological needs and distance from MLGU center. One AT may cover several barangays to work on specialized functions or commodities, say fisheries or livestock, as designated AT 1 in Figure 3.

Office and Time Allocation by the ATs - The ATs shall strictly hold office one day per week at the OMAG and four days per week at the offices of the barangays covered. As previously mentioned, one AT may be stationed permanently at the OMAG to cover several barangays for specialized commodities.

The ATs shall allocate equitable time but at least one day per week for all the covered barangays. The AT's time shall be scheduled per agreement with farmers, UCOs, UBAs, BEWs, DFS farmers, FTGs, to hold farmers' classes, consultations, field demonstrations or any assistance to facilitate adoption of technology. Figure 5 shows a sample of ATs time allocation for the two upland barangays and for the OMAG.

Figure 5. A sample of Office and Time allocation of the AT for the OMAG and Two Covered Barangays



Roles of the Barangay Extension Worker (BEW)

They are appointed, paid on minimal honorarium basis and under the administrative supervision by the Chairman of the BLGU. They received adequate trainings and study tours to good farms in and outside the region which made them ready for extension work under the spirit of voluntarism. In close coordination with the AT and the barangay organizations the BEW's role are the following:

1. Assist farmers in the putting up of DFS
2. Assist farmers on the layout of contours lines in the field
3. Attend to farmers' consultation on urgent farm problems.
4. Advise farmers on production and pest/disease control of upland commodities
5. Report to barangay office in time of the AT's scheduled visit to the barangay

Roles of the Upland Barangay Association (UBA)

This is established in every barangay in the program areas and is the umbrella organization for livelihood activities. In this model, the UBA's roles in the extension service are to coordinate or work closely with the following groups and individuals:

1. The AT, the BLGU chairman, the BEW, the FTG and the DFS farmer for the

coordinated delivery of extension messages and services.

2. The UCOs which are directly working with the farmers in the sitios
3. The FSC for financing micro enterprise
4. The BLGU Chairman and officers for policy and program support
5. The bagsakan center if any
6. All stakeholders in the barangay for the planning and implementation of CWP.

UBA's role are articulated in its three committees namely: agr-business committee, the post-harvest and marketing committee and the FTG.

The Roles of the Agri-business Committee in the UBA – The roles of the agribusiness committee in the UBA are in the promotion of the following endeavors:

1. Upland commodity production and improvement with soil conservation
2. Agribusiness farming in the uplands
3. Farm record keeping
4. The proper use of production loans and repayment
5. Simple economic analysis in upland farm enterprises
6. Savings consciousness and profit recycling

Roles of the Post-harvest and Marketing committee – The roles of this committee are as follows

1. Promote updated procedures in product handling, storage and processing
2. Compile listings of product processors
3. With the UBA chairman, establish linkages with processors
4. With the UBA chairman, establish market linkages
5. Enhance effectiveness of bagsakan centers
6. Promote group acquisition of inputs and marketing of products

Roles of the Farmers Training Group (FTG) - The FTG consists of 4 to 5 farmers in the UBA who participated extensive field visits to good farms and trainings on technologies suited to the uplands. Aside from serving as critical mass of learned farmers, they shall also serve as trainers and channel of extension message delivery in the barangay.

Roles of the Upland Community Organization (UCO)

This is the basic farm organizations in the sitio. In this model, the officers and members are tasked to do the following:

1. Plans and implements CWP in their individual farms.
2. UCO chairman to ensure the establishment of DFS with soil conservation measures
3. UCO officers to recommend to ATS thru the UBA, the strategies and the needed extension messages
4. UCO officers to provide feedback to UBA regarding UCO concerns

Roles of the Financial Service Center (FSC)

They are organized by financial institutions like local banks or coops and hence recognized to do financial transactions with them. They provide loans from capital buildup funds, savings, seed capital and the UDLF. They accept savings from the SLG members who in turn are qualified to apply for membership with the FSC upon putting up the CBU. In this model, the FSC has to work closely with the UBA to support agri-business farming and micro enterprise endeavors.

Roles of the DFS model farmers

In this model, the DFS farms shall serve as the venue for learning activities and the source of planting materials in the sitio. The DFS farmer shall be good channel for the delivery of extension messages, having been trained for the purpose. Some DFS farms may be developed into a municipal learning center to serve bigger number of learners from within and outside the municipality.

Functions of the Municipal Learning Center

This facility is designed to serve as the venue for learning activities and source of planting materials. With its training hall, demonstration sites and nurseries, the facility as designed will accelerate technology transfer for upland development. The municipal learning center may be developed collectively by the community at a selected DFS farm or at a barangay site with BLGU support.

Extension Message

Agricultural extension is basically educational in function. Its scope may vary but it is expected to inform, advise and educate the target audience in practical manner. Its function is carried through extension messages which requires relevance in content and efficiency in delivery.

Criteria for relevance

The context in which farmers live and operate their farms are the key factors to consider in the introduction of technology and delivery of relevant extension messages. Adherence to these factors makes high acceptance and adoption of extension messages by the clientele.

The upland areas shared less or even none from the current extension service outside the UDP. Generally, the upland areas are undeveloped with people left behind the beneficial production methods, so that the introduction of technologies and messages may consider the following:

- Low cost, low risk technology
- Land-saving technology like the DFS
- Higher productivity and profitability than previous practice
- Extension messages in simple format
- Planning extension messages with maximum clientele participation

Structure of Messages

Message content requires the expository order or structure that would be easily absorbed by the clientele. Based from the interview with stakeholders, the modular extension messages similar to the FFS and using the self-discovery concept of learning shall be adopted in this model. Each modular topic shall not take more than one hour discussion during the weekly visit of the AT to the barangay while the hands-on side of the message shall be done by the farmers themselves in their farms. The modular extension messages requires the formulation of curriculum for the commodities agreed between the clientele and the AT. Generally, modular messages on curriculum format may be prepared for the following commodities and functional areas:

Crop production including IPM

- Corn
- Vegetables
- Mango
- Durian
- Bananas
- Abaca

Livestock/ poultry production

- Goats
- Cattle
- Chickens

Soil conservation

- Slope treatment –oriented practices (STOP)
- Contour tillage and alley cropping
- Establishing hedgerows and natural vegetative strips

Post harvest, storage and marketing

Agribusiness

- Record keeping
- Farm budgeting
- Savings and profit recycling

Enhancing efficiency of UCOS, UBAS, FSC

Refocusing the roles of officers and members
Leadership and social responsibilities

Research-Extension Linkage

As shown in Figure 1 this model stresses the strong research-extension linkage thru the downloading technologies to users in the field and uploading field problems for research .

Downloading technologies

1. RIARC/RIFRC with the regional research consortiums shall gather appropriate research findings from different research institutions in the region, including their completed in-house researches.
2. RIARC/RIFRC initiate the production of manuals from appropriate research findings with assistance from RFU-RAFID
3. RIARC/RIFRC provide copies of manuals to the PLGUs
4. PLGUs interpret technically/culturally, multiply and distribute manuals to the MLGUs
5. MLGUs interpret and demonstrate the ground application of technologies in the manual to the BEWs, UCOs, UBAs, DFS farmers and members of the FTG who shall help fellow farmers apply the technology.

Uploading field problems for research

1. Farmers pass on field problems to BEWs/UCOs/UBAs or directly to ATs
2. ATs submit problems requiring research to PLGUs
3. PLGUs upload field problems requiring research to the RIARS/RIFRCs

Training of ATs

The ATs can make or unmake the efficiency of the extension service. As the source of the extension messages, the ATs shall be motivated and well-trained.

The current AT's trainings which are unplanned and on piece-meal manner shall be discouraged in favor of a planned and continuous training of more than a week with field trips to the suitable parts of the country. Likewise conferences outside the interests of the barangay shall be discouraged so as not to robbed the time allotted for extension work.

The training needs shall be identified by the MAO who shall request the packaging and conduct of the trainings by the instrumentalities of the PLGU and DA-RFU. Such training arrangements will make trainings beneficial, rewarding and motivating to the ATs.

Project Monitoring and Evaluation

The extension service shall carry out projects identified in the BDP. Thru evaluation, its performance and impact on the projects are measured, which in the case of negative consequences shall require new approaches, strategies and messages.

The monitoring and evaluation shall not require heavy documentation, as they use the barangay/household profiles made at the beginning of each calendar year

and the achievements in the field during the evaluation period. The extension activities shall be recorded by the UBA.

Advantages of conducting formal evaluation

The formal evaluation of the project inputs, processes and outputs shall provide information to the MLGU management as follows:

1. Evaluation results are useful guide and direct future actions
2. Evaluation results can help improve on-going projects
3. Evaluation results are indispensable for purposes of accountability
4. Since it requires systematic approach, it develops professionalism
5. Can serve as important public relations

Framework for the Project Evaluation

The framework covers the criteria and sample types of evidence derived from the UNDP manual as follows:

Evaluation Criteria

Sample types of evidence & changes

1. Inputs	Number of trainings, demonstration sessions etc. made by AT. Quality of support from MAO. Policy and financial support from MLGU
2. Activities	Learning situations set up. Subject matters taught.
3. People Involvement	Percentage of upland farmers participating in project, e.g. attend sessions
4. Reactions	Number of upland farmers indicating extension messages are useful
5. KASA change	Changes in knowledge, attitude, skills and aspiration of upland farmers
6. Practice change	Number of upland farmers adopting improved agricultural, soil conservation and environmental practices; number of households with increased area of cultivation; number of farmers practicing DFS.
7. End results	Attainment of ultimate objectives. <ol style="list-style-type: none"> 1. Changes in quality of life and standard of living of upland households 2. Established soil conservation measures: hedgerows, terraces, agro-forestry

Frequency and Persons to Conduct the Evaluation

The evaluation shall be conducted annually during the summer months by a committee organized by the Municipal Mayor. The evaluation committee shall be composed of the MPDC, the agriculture committee chairman of the SB, the treasurer, the Budget Officer, the BLGU chairman and the UBA chairman. The committee shall also prepare evaluation forms in line with the criteria and evidences to be collected prior to the fieldwork.

Policy and program support

The efficiency of the upland extension service shall depend on policy and program support by the MLGU and the BLGU. Efficiency measure of support is thru legislation by the SBs on the adoption of the extension service mechanism and provision of funds for its execution in the field.

Financing Agricultural and Environmental Development Using the Extension Model

As previously stated, this model puts premium on building the optimum efficiency of the extension service in carrying out agricultural and environmental development programs. Its efficiency however requires adequate budgetary support for personal services, maintenance and other operating expenses, and some capital outlays.

Personal Services - Personal services cover the salaries, wages and regular personnel benefits for the ATs who shall be provided with tenure of employment to

achieve efficiency. Its costs depends on the MLGU's number of barangays and their relative distances. Moreover, personal services allotment shall be adequate and commensurate to the defined responsibilities of the ATs. Furthermore, it shall cover the cost of technical services for planned trainings and awards for performance based on the annual evaluation.

MOOE - The MOOE component in the budgetary allocations for the extension service includes supplies and materials in the conduct of trainings, fuel or transportation allowance for the ATS and planting materials. The budget for MOOE should be well planned by the MAO for consideration in budget preparation each year.

Capital Outlay - Depending upon the needs of the project, capital outlay shall be considered in the budget preparation stage.

MODEL IMPLEMENTATION

The model and its field operations in the barangay is depicted in Figure 4 while its support system is shown in Figure 1 involving the instrumentalities of the PLGU, DA-RFU and national RDE agencies. The model does not entail drastic rise in cost of operations but is designed to build the efficiency of the extension service and the quality participation of the farmer clientele with the BLGU, UBA, UCO, Learning Centers, DFS farms and FTG. The model's components are clearly specified particularly the administrative structure, roles of key players primarily the ATs; geographic coverage and schedule of ATs; extension message and mode of delivery; complementation among groups and organizations in the delivery of services; project

supervision and support by the MAO and the Mayor with the SB; and, regular physical evaluation in the field.

The model in its efficient implementation, aims to achieve economic returns for the farmers, enhance local business, and contributes to the coffers of the MLGU. The model's functionality is set for a period of three years after which farmers may have moved up to higher levels of development and oriented towards cost-sharing scheme of extension service.

The steps in the implementation of this model are as follows:

- I Conference with MLGU key players in the extension service from the Mayor, MAO, AT to the BLGU Chairman to define the following: (1) administrative structure, operational mechanism and the support system from the PLGU, DA-RFU and the national RDE agencies (2) project evaluation on those carried out by the extension service, its frequency, criteria and the evaluators (3) training support for ATs.
- II. Conference with the OMAG, OPAG, DA-RFU, RIARC, RIFRC, ATI, DA National representatives on their supportive roles to extension operation at the municipal/barangay levels.
- III. Execute memo of agreement on supportive roles of OPAG, DA-RFU to the MLGU on the training of ATs, downloading of technologies in the form of manuals and other technical support services.
- IV. Specify AT's geographic coverage and weekly schedule of work in the OMAG and barangays, which should be agreed between the MAO and the AT. One day at the OMAG and four days each week at the offices of the barangays covered respectively, except those ATs permanently stationed at the OMAG office to cover several barangays on specialized commodities and functions.

- V. Ascertain roles of ATs
1. Implement the cooperative extension service mechanism with the BLGU, the barangay organizations and the farmers.
 2. Conduct farm classes with farmers, women, out-of-school youths in the barangay
 3. Prepare learning modules which are of interest of the farmers
 4. Conduct periodic trainers' trainings to the BEWs and members of the FTGs to enable them to respond to farmers' consultation on urgent farm problems while the AT is at the other barangays.
 5. Coaching the BEWs, UBAS, UCOS, DFS farmers, FTGs on agri-business, post harvest, marketing, savings mobilization and other subject areas.
 6. Conduct field demonstrations
 7. Attend to consultations at farmers field
 8. Assist farm organizations in the maintenance and upgrading their capabilities
 9. Assist farmers in the preparation of loan and marketing documents
 10. Assist farmers in securing tenurial instruments
 11. Liaison work for linkages with processors and institutional buyers of products
 12. Act as liaison man to the MLGU offices thru the MAO.
- VI. Orient the key players or resource base in the barangays, (UBA, UCO, DFS farmers, BEW, FSC, LC, FTG, BLGU, RO/PO) on their roles and areas of complementation in message and service delivery to farmers.

A. Define Roles of the Barangay Extension Worker (BEW)

1. Assist farmers in the putting up of DFS
2. Assist farmers on the layout of contours lines in the field
3. Attend to farmers' consultation on urgent farm problems.

4. Advise farmers on production and pest/disease control of upland commodities
5. Report to barangay office in time of the AT's scheduled visit to the barangay

B. Define Roles of the Upland Barangay Association (UBA)

Work in coordination with the following groups and individuals:

1. The AT, the BLGU chairman, the BEW, the FTG and the DFS farmer for the coordinated delivery of extension messages and services.
2. The UCOs which are directly working with the farmers in the sitios
3. The FSC for financing micro enterprise
4. The BLGU Chairman and officers for policy and program support
5. The bagsakan center if any
6. All stakeholders in the barangay for the planning and implementation of CWP.

UBA's role are articulated in its three committees namely: agr-business committee, the post-harvest and marketing committee and the FTG.

C. Define the Roles of the Agri-business Committee of UBA

The roles of the agribusiness committee in the UBA are in the promotion of the following endeavors:

1. Upland commodity production and improvement with soil conservation
2. Agribusiness farming in the uplands
3. Farm record keeping
4. The proper use of production loans and repayment
5. Simple economic analysis in upland farm enterprises
6. Savings consciousness and profit recycling

D. Define the roles of the Post-harvest and Marketing committee of UBA

1. Promote updated procedures in product handling, storage and processing
2. Compile listings of product processors
3. With the UBA chairman, establish linkages with processors
4. With the UBA chairman, establish market linkages
5. Enhance effectiveness of bagsakan centers
6. Promote group acquisition of inputs and marketing of products

E. Define the Roles of the Farmers Training Group Committee of UBA

1. Conduct trainings to farmers
2. Attend to neighborhood consultations on farm problems

F. Define the Roles of the Upland Community Organization (UCO)

1. Plans and implements CWP in their individual farms.
2. UCO officers to ensure the establishment of DFS and soil conservation measures
3. UCO officers to recommend to ATS thru the UBA, the strategies and the needed extension messages
4. UCO officers to provide feedback to UBA regarding UCO concerns

G. Define the roles of the Financial Service Center (FSC)

1. Accept savings from SLG members.
2. Provide loans to agri-business and micro-enterprise projects

H. Define the roles of the DFS model farmers

In this model, the DFS farms shall serve as the venue for learning activities and the source of planting materials in the sitio. The DFS farmer shall be good channel for the delivery of extension messages, having been trained for the purpose. Some DFS farms may be developed into a municipal learning center to serve bigger number of learners from within and outside the municipality.

I. Define the functions of the Municipal Learning Center

This facility is designed to serve as the venue for learning activities and source of planting materials. With its training hall, demonstration sites and nurseries, the facility as designed will accelerate technology transfer for upland development.

VII. Put into action the respective roles and complementation in the extension mechanism

The mechanism starts with the AT who carries the technological packages and introduces such packages to the officers of the BLGU, UBA, and UCO; the BEW; the members of the FTG; and, the DFS farmer, for the coordinated planning, delivery and putting into practice the extension messages to the farmers. The mechanism also works upward from the farmers or residents who impinge on the aforementioned officers for their needed extension messages and services. It puts the DFS farmer with his farm as the learning center to serve as venue for learning activities and sources of planting materials.

The mechanism consists of two sets of organizations working together in the barangay: (1) the BLGU for governance and (2) the UBA-FSC for livelihood.

It shall operate in concerted and complementary manner based on their integrated action plan. Its dynamics shall be closely monitored by the MAO. The same mechanism shall be followed in the replication areas but the resource base or facility have to be established prior to the functioning of the mechanism.

The extension activities shall be recorded by the UBA while evaluation shall be done annually by a team organized by the mayor for policy and program agenda. Planned trainings of AT shall be done annually.

APPENDICES

Appendix A

Sample Learning Module for Vegetables As Topical Guide for Curriculum Development*

Module 1 Economics and nutrition

Importance of producing the crop's economic and nutritional value

Module 2 Planning and Budgeting

Farm planning

Budgeting: cost and return analysis(production, expenses, profit)

Module 3 Varieties and soils

Cultivated varieties

Importance of seed selection

Soil and climate adaptation of the crop

Module 4 Cultural management

Land preparation

Seed treatment

Seed inoculation (if necessary)

Planting orientation

Fertilizer application: basal and side dressing

Planting methods: seeding rate, plating distance

Time of planting and irrigation

Hilling-up

Trellis application (for vine crops)

Module 5 Pest control

Botanical

Biological

Cultural

Organic farming

Mechanical

Chemical

* Based from PCARRD. Philippine Recommends Vegetable Crops

Module 6 Disease control

- Botanical
- Biological
- Cultural
- Mechanical
- Organic farming
- Chemical

Module 7 Weed control

- Kinds of weeds
- Cultural
- Mechanical
- Chemical

Module 8 Harvest and post harvest handling

- Time of harvesting
- Methods of harvesting
- Classification/Grading
- Packaging
- Post harvest pest and diseases and their control
- Storage system
- Transport system

