

DEVELOPING THE AGRICULTURAL EXTENSION DELIVERY SYSTEM FOR THE UPLANDS

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RATIONALE

The implementation of RA 7160 (Local Government Code) and 8435 (AFMA) have placed the responsibilities of agricultural and environmental development on the MLGUs with the support from the DA-RFUs, ATIs and the PLGUs. The new order of development is to look down rather than look up to the national government in terms of accountability.

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. Consequently, strong leadership and efficient organizational mechanism by the MLGUs are quite necessary especially that the uplands when not properly used are the origins of calamities causing economic and social disasters in the lowlands and coastal areas.

Some MLGU 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 framework introduces the proven processes of the extension service used 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 incorporates 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 thru concerted efforts among key players and support institutions (DA-RFU, RIARCS, RAFID, ATI, PLGUs, etc).

Resource Base of the Upland Extension Service

The framework 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), ATI, the SUCs and the national research and extension institutions.

Extension mechanism

The extension service mechanism in the field starts with the ATs who carry the technological packages for introduction to the officers of the BLGUs, BEWs and barangay organizations such as: UBAs; and UCOs; the FTGs; the PO/ROs; the DFS farmers; for collective planning, message delivery, provision of technical services/ technology for adoption by the farmers. The mechanism sets the framework of complementation among the groups and participation by the farmer clientele thru their collective action plan and defined roles. The mechanism and its dynamics shall be closely monitored by the MAO/MA to attain efficiency.

The goals and characteristics of the extension service framework

1. High economic returns for the farmers/fishermen, enhance local business, contributes to the revenues of the MLGU.
2. Defined administrative structure and accountability from the Mayor down to the ATs
3. Adequate policy, program and financial support from the MLGU
4. Extensive use of groups in technology transfer (BLGU, UBA, UCO, RO/PO, DFS farmers, LCs, FTG, FSC)
5. Specific geographic coverage of ATs and definite schedule of work in barangays. Avoid interruption on ATs extension work by unplanned conferences and short trainings but for extreme needs such short

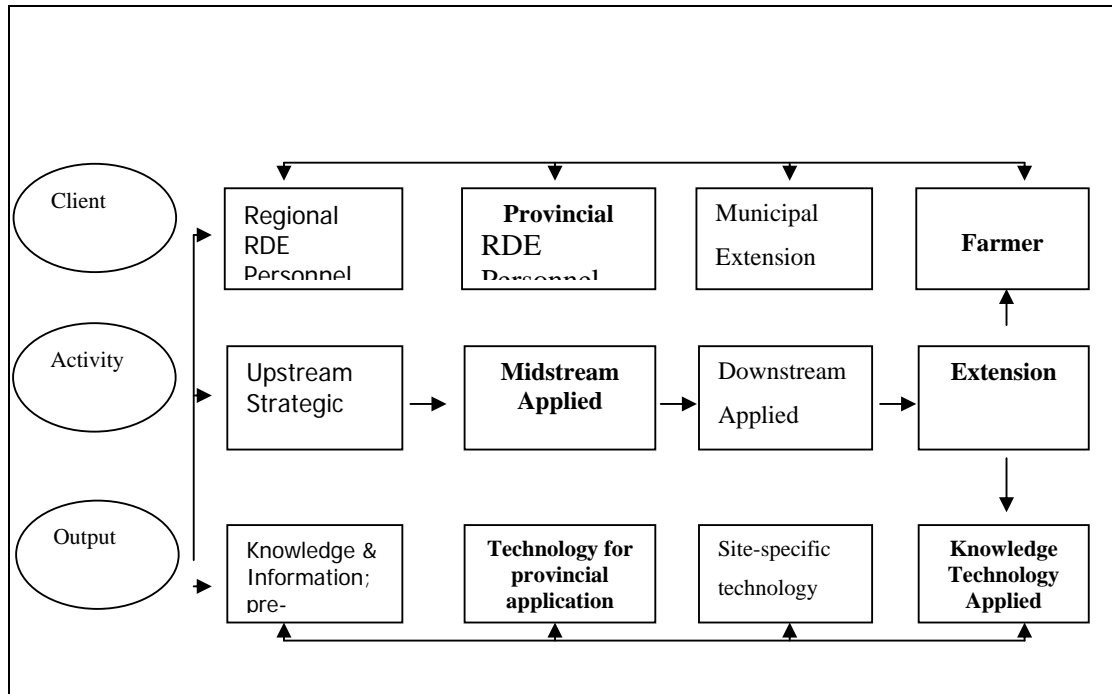
trainings and conferences have to be made in time with the AT's weekly schedule at the OMAG.

6. ATs to provide annual barangay and household profiles for use in evaluation
7. Modular extension messages on topics agreed between farmers and the ATs
8. Planned and relevant trainings of ATs with field trips
9. Technical support from the PLGUs and DA-RFU in terms of trainings of ATs and providing production manuals out of research outputs
10. Minimal paper works by the ATs
11. 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
12. Implementation of the relevant recommendations by the evaluation team.
13. Adequate technical and training support from the DA-RFU, ATI, PLGUs.
14. The framework'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.

REVIEW OF THE CURRENT RESEARCH AND EXTENSION SYSTEM

Figure 1 shows the country's current research and extension (RDE) system's design based on RA 7160 and RA 8435. It presents the continuum of clients, activities and outputs. However there are apparent discrepancies between design and operations like the following: (a) inadequate understanding of the RA 7160 and 8435 on the aspect of extension operations and technical support (b) lack of complementation among RDE key players

Figure 1. The research development extension (RDE) continuum of clients, activities and outputs of the national, regional, provincial and municipal institutions.



THE PROPOSED RDE FRAMEWORK

Major characteristics of the framework

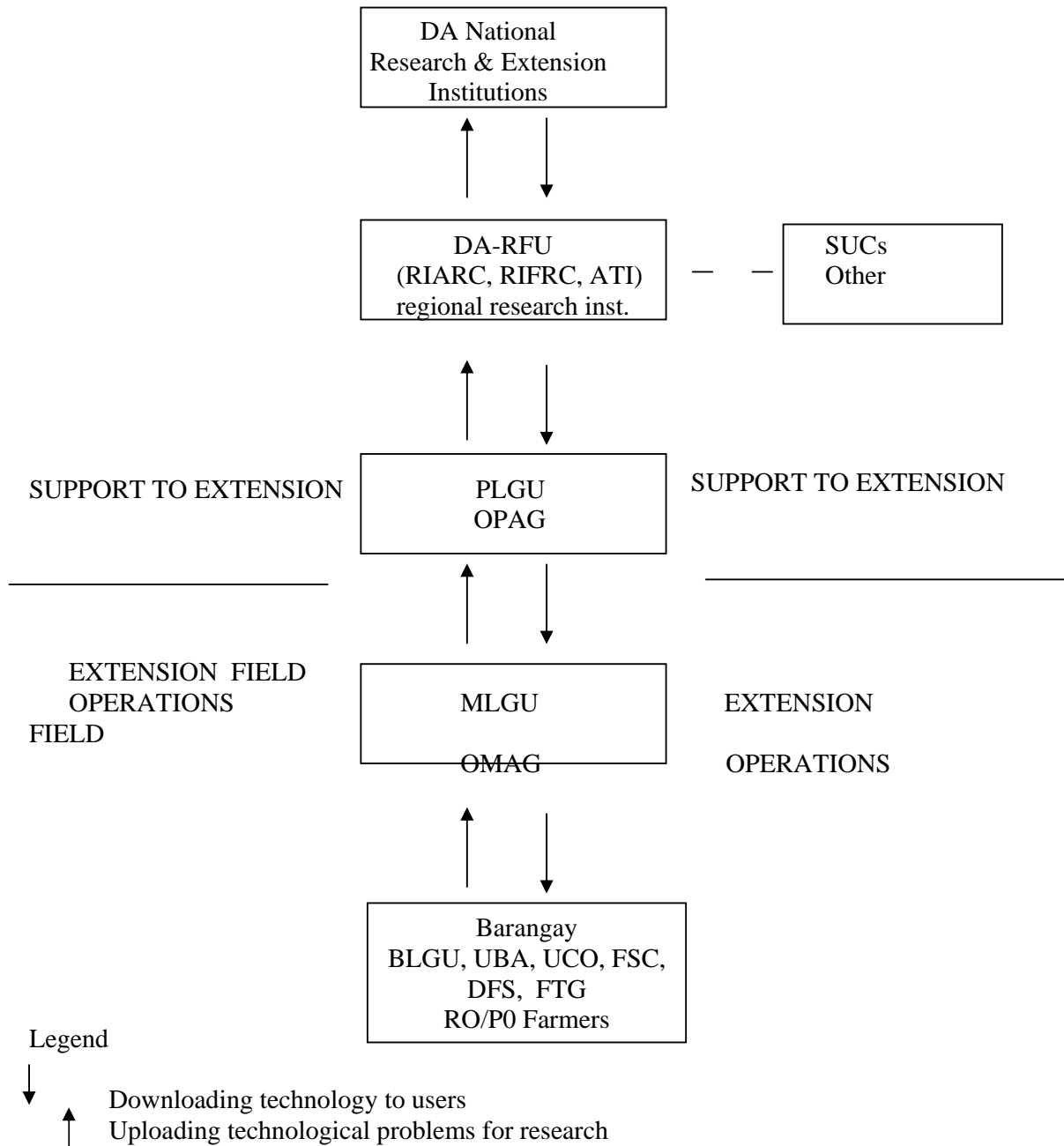
1. Well defined RDE operational and support systems
2. Regular and quality delivery of extension messages
3. Participative planning and implementation of extension activities
4. Promotes conservation of soil and water resources
5. Increases farmers/fishermen's profit and government revenues

Extension operations and support in the RDE system

Pursuant to RA 7160 and 8435, the extension field operations shall be done by the MLGUs and supported by the PLGUs, DA-RFUs (RIARCS, RAFID), ATI, other DA-attached agencies and SUCs, in terms of technology, training

and some financial assistance . Figure 2 presents the extension operations and support in the RDE system.

Figure 2. The extension operation and support in the RDE system



As shown in Figure 2, the extension operations at the MLGUs are supported by research system from the PLGU and DA-RFU 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 initiates the production of manuals from appropriate research findings with assistance from RFU-RAFID
3. RIARC/RIFRC provides copies of manuals to the PLGUs
4. PLGUs interpret technically/culturally, multiply and distribute manuals to the MLGUs
3. MLGUs interpret and demonstrate the ground application of the technologies
In the manual to the BEWs, UCOs, UBAs, DFS farmers and the FTG's who shall help fellow farmers apply the technology.

Uploading field problems for research

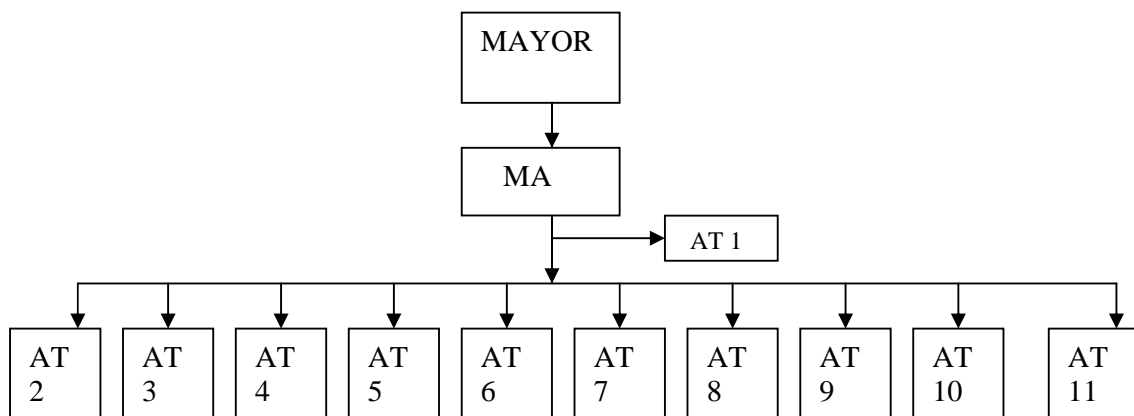
1. Farmers pass on field problems to BEWs/UCOs/UBAs or directly to ATs.
2. ATs submit problems requiring research to PLGUs
3. PLGUs upload field problems requiring research to the RIARS/RIFRCs

Structure of Extension Operations at the MLGU Level

Municipal administrative structure

Figure 3 shows the suggested municipal administrative structure of the extension service operations in a single line of command from the mayor to the MAO/MA and the ATs for optimum efficiency.

Figure 3. The suggested municipal administrative structure for the agricultural extension service operations



Geographic and time allocation structure of ATs

Geographic coverage of ATs

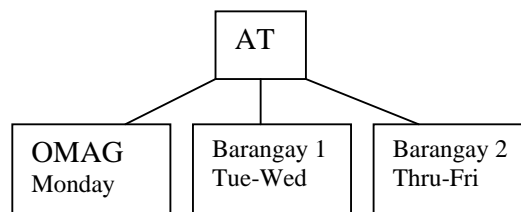
For efficiency of extension operations, the ATs shall have definite number of barangays to cover. The ATs and the MAO shall agree on the AT's coverage based on the barangay's technological needs and distance from MLGU center. One AT may cover several barangays to work on specialized functions or commodities,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

Office and time allocation structure of 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 or more ATs 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 4 shows a sample of ATs time allocation for the two upland barangays and for the OMAG.

Figure 4. A sample of Office and Time allocation of the ATs for the OMAG and Two Covered Barangays



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.

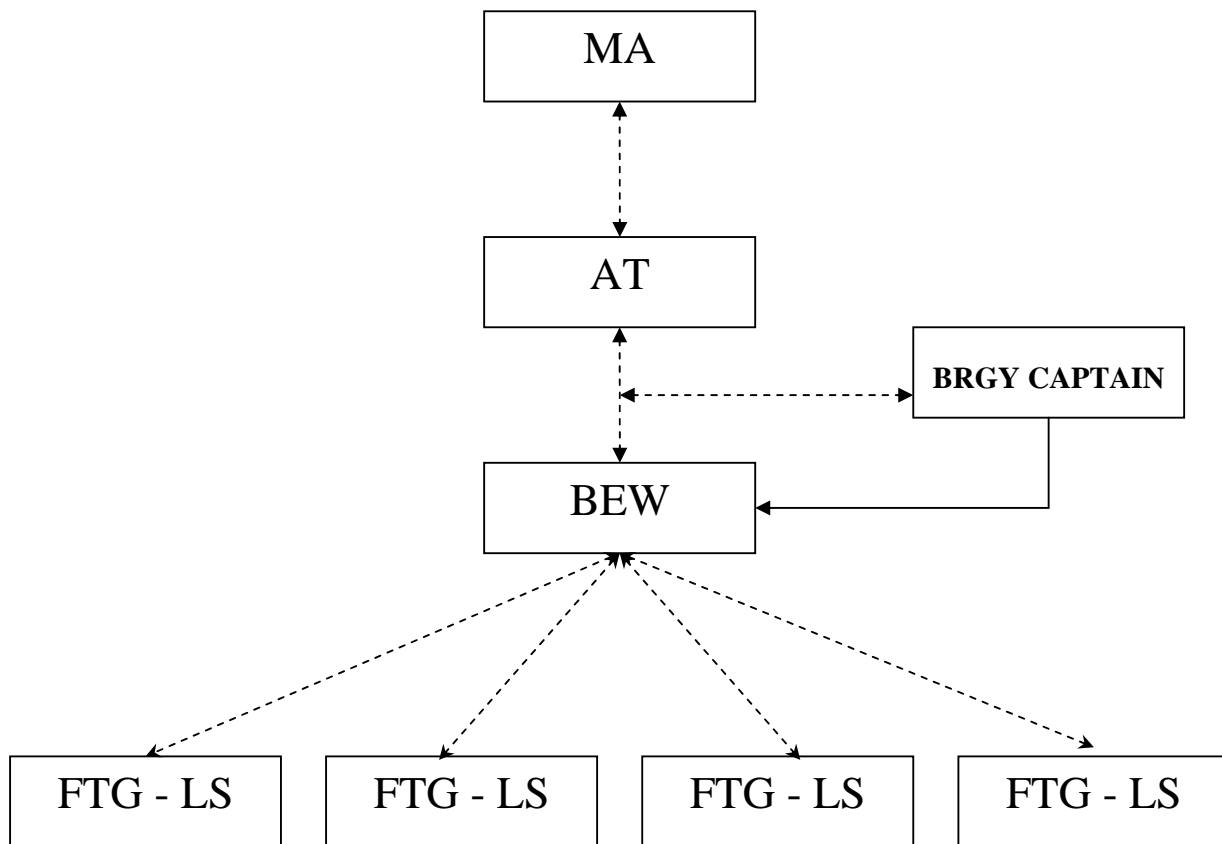
The current trainings of ATs which are unplanned and on piece-meal manner shall be discouraged in favor of a planned and continuous training of more than a week with field trips to the suitable parts of the country. Likewise conferences outside the interests of the barangay shall be discouraged so as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

The training needs shall be identified by the MAO/MA 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.

The Municipal Extension Network For The Extension Service Operations

As shown in Figure 5, the extension service operations in the municipalities particularly in the barangays are participated by the ATs, officers of the BLGUs, the BEWs, the FTGs with learning sites (LS) and farmers.

Figure 5. Municipal Extension Network
Operational Structure



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 MLGU. 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/MA

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 development 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 and 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 the barangay and household profiles for data base.
3. Provide assistance in farm planning
4. Conduct farm classes with farmers, women, out-of-school youths in the barangay
5. Prepare learning modules for the farmers' classes
6. Conduct farm classes with farmers, women, out-of-school youths
7. 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.
8. Coaching the BEWs, UBAS, UCOS, DFS farmers, FTGs on agri-business, post harvest, marketing, savings mobilization and others
9. Conduct field demonstrations
10. Attend to consultations at farmers field
11. Assist farm organizations in the maintenance and upgrading their capabilities
12. Assist farmers in the preparation of loan and marketing documents
13. Assist farmers in securing tenurial instruments
14. Liaison work for linkages with processors and institutional buyers of products
15. Act as liaison man to the MLGU offices thru the MAO.

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
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 framework, the officers and members are tasked to do the following:

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

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 framework, 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.

Roles of the Extension Support Institutions

Institutions which provide direct support to extension operations, are the DA-RFUS (RIARCS, RAFID) ATIs and the PLGUs. Their major functions are presented below.

DA-RFUs

1. Coordinate research activities of institutions in the region
2. Download research outputs in the form of manuals to users in the PLGUs
3. Conduct researched on technical and social, marketing problems uploaded from the field
4. Conduct midstream applied research

ATI

To provide training services to the ATs and in special cases, the farmer/fishermen clientele.

PLGUs

1. To conduct technical updating of ATs
3. Multiply and download appropriate technologies from the DA-RFU and other research institutions to the MLGUs.
4. Provide Subject Matter Specialists (SMS) services for the MLGUs

5. Conduct site-specific applied researches

Extension Message

Agricultural extension is basically a continuing education 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:

- Multiple goals of production and soil conservation
 - Diversified farming system (DFS)

- Farm commodity production including IPM
 - Grain crops
 - Vegetables
 - Fruits
 - Fibers
 - Goats
 - Cattle
 - Chickens

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

- Agrkibusiness, post harvest, storage and marketing

 - 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

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 activities of the AT 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

Framework for the Project Evaluation: criteria and sample types of evidence

<u>Evaluation Criteria</u>	<u>Sample types of evidence & changes (Quantitative/Qualitative)</u>
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 whether 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. Changes in quality of life and standard of living of upland households 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 may 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 and implement monitoring forms thru the BLGU in line with the criteria and evidences to be collected.

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 or executive order by the mayor 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 Upland Extension Service Framework

As previously stated, this framework puts premium on building the optimum efficiency of the extension service in carrying out agricultural 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 personnel benefits of ATs recruited based on merits and qualifications. 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 MOOE should be properly considered in budget preparation each year.

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

GLOSSARY OF ABEVIATIONS

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
RDE	Research Development Extension
RFU	Regional Field Unit
RIARC	Regional Integrated Agricultural Research Center
RIFRC	Regional Integrated Fishery Research Center
RO	Religious Organizations
SMS	Subject Matter Specialist
SUC	State Universities and Colleges

UBA	Upland Barangay Association
UCO	Upland Community Association
UDP	Upland Development Program