

FARM MANAGEMENT IN EXTENSION IN THE PHILIPPINES

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I. BACKGROUND AND INSTITUTIONAL SETTING

A. The Extension and Training System in the Philippines.

1. **Agricultural Extension.** The Philippines agricultural extension system is complicated by the numerous institutions which are actively involved in or having some responsibilities for agricultural extension. Apart from the Department of Agriculture (DA) and the Local Government Units (LGUs), the other extension agencies are the State Universities and Colleges (SUCs), the Department of Science and Technology (DOST), other attached agencies and Bureaus of the DA, the Department of Agrarian Reform (DAR), the Cooperatives Development Authority (CDA), the Department of Environment and Natural Resources (DENR), Non-Government Organizations (NGOs), other Voluntary/Peoples Organizations and Private Sectors/Companies. These extension networks have been further fragmented with the transfer of considerable agricultural extension activities from the DA to the LGUs under the Local Government Code (LGC: RA 7160, April 1993). As a result the DA, no longer has the line responsibility and function for providing extension services to provinces, cities and municipalities.

1.1 **Local Government Agencies.** Under the LGC, the main focus of DA's efforts has shifted from the delivery of services directly to farmers and fishermen to the provision of technical and other forms of assistance to the LGUs in the delivery of various agricultural and rural development services. Some 17,000 staff (225 per province) have been transferred from DA to local government offices. There has been reports that the impact of devolution has slowed down the delivery of basic agricultural services due to various reasons like the combinations of limited and varying capabilities and changing priorities of the LGUs as well as the lack of support from the local government; and the extension services to be still mostly fragmented and lacking coordination.

1.2 **Department of Agriculture.** The DA with 6 staff Bureaus, 24 attached agencies and 14 regional field offices are essentially commodity-based and having national responsibilities. Extension services was relegated to the regional offices and more recently devolved to the provincial and municipal government, few of which have the resources needed to provide an effective service. More critically, the attached agencies of the DA are mostly autonomous & independently operating from each other and from the more integrated field operations at the regional/provincial level.

1.3 **State Universities and Colleges.** There are 51 SUCs in the country with 42 satellite campuses. Their principal orientation and strength is in

agriculture. An estimated 39 of these SUCs are actually involved in agricultural research. A few, because of their strategic location, political will of the local government and historical circumstances, have been able to make a continuing creditable impact on research and extension programmes in Philippine agriculture. Among them are the University of the Philippines at Los Baños/UPLB; the College of Agriculture, Central Luzon State University (CLSU); and the Visayas State College of Agriculture (VISCA). The more renowned, particularly UPLB, have a number of specialized Colleges and Institutes/Departments like the College of Economics and Management, Department of Agriculture Economics and the Farming Systems and Soil Resources Institute. In view of the large number of highly qualified staff and in many instances good facilities of the SUC's, they represent a greatly underutilized resource for research, and extension and training activities.

1.4 Non-Government Organizations and Private Companies/Industries.

More than 70,000 NGO's are registered in the Philippines. Many are involved in agriculture extension through their local community development programmes. A few are outstanding in the quality of their research and extension activities in community/agricultural development, and in their training of personnel including farmer's and fisherfolks of other institutions. Extension and training activities of NGO's are conducted independently of LGU activities.

Private companies conduct some extension and seminar/training activities in connection with the promotion and marketing of their products. Their activities are mostly independent of mainstream activities of LGUs.

2. **Agricultural Training.** The national office that handles DA's in-service training for its extensionist staff and training programs for agricultural staff of the LGU's, farmers and fisherfolks is the Agricultural Training Institute (ATI). Formerly called the Bureau of Agricultural Extension (BAEx), it relegated its extension function to the DA regional offices in the 1980's, with this extension function subsequently devolved to the LGUs in 1993. At the regional level, agricultural training is offered through the Regional Training Centres (RTCs) and Farmer Training Centres (FTCs).

The ATI has six major organizational units – starting from Central/National office to Regional/Provincial organizations. In total, there are 42 existing training centers, including; the International Training Centre on Pig Husbandry (ITCPH), 4 National Training Centres (NTC's); 13 Regional Training Centres (RTCs); 7 Regional Farmer Training Center (RFTCs); and 17 Fisherfolks Training Centres (FTCs). Since devolution, these Training Centres do not have a direct administrative link with LGU extension staff, but strong informed institutional linkages persist with the LGU agricultural offices. Some of these Centres have formed very effective linkages with a number of organizations outside the DA, such as NGOs, for inputs into training programmes.

B. The Trends in Farming System with Implications for Small Farm Management Extension Services.

1. **Smallholder Farming System.** The country is predominantly an agriculture economy with about half of the total national employment. Two-thirds of the population live in the rural areas and are directly and indirectly dependent on agriculture for their livelihood.

The Filipino farmers are generally small land holders. Majority (97%) of all farms are below five hectares with average farms (1970-1980) decreasing from 3.6 to 2.8 hectares. This decreasing trend accelerates in view of the growing population and urban fringe in prime agriculture land for non-agriculture purposes. Most of these rural farm/fisherfolk families live below poverty line and the landless agricultural workers increased from 10 percent (1951) to 50 percent plus today. The average annual growth rate of the agriculture sector continuously decline due to slow growth of crop productivity. Coupled with this, is the rapid rate of deforestation and inappropriate farming practices in the uplands resulting to flooding and erosion of the highly productive lowlands, thus further threatening the productivity and incomes derived from these areas. Small holders have remained dependent on traditional subsistence farming systems and still unable to access from modern technologies and support systems required for modern agriculture.

2. **Economic Reforms and Agriculture Development Setting.** The economic and administrative reforms generally initiated have been aimed at achieving economic recovery and growth through revitalization of the private sector and improved management of public sector. Thus, greater responsibility was devolved/granted to the local authorities through the LGC. The declining and later, slow growth of the economy has further aggravated the government's ability to respond to its commitment to poverty alleviation. The weak economic activity has also resulted in unemployment at 8% of the work force since 1990 and about 22% in part time employment, the largest proportion being associated with the agriculture sector.

Between 1985 and 1990, the growth rate of the agriculture sector declined from an average annual rate of 5% to 3%. This decline can be attributed to the downward trend in international commodity prices for the major export crops, a series of natural disasters, and the declining impetus of the "Green Revolution". These events have been compounded by lack of sector investment resulting from an overvalued exchange rate, high interest rates, inadequate infrastructure, inefficient transport system and inadequate agriculture technologies and support services.

The agriculture sector employed some 45% of the work force (1991) and at least one third of the service sector was linked to the agriculture sector. The country's staple crops, rice and corn remain as the most important crops in terms of both value added and areas grown. The traditional export crops like coconut, sugarcane and to at lesser extent bananas, have continued to decline.

The Medium Term Agricultural Development Plan (MTADP, 1993-1998) outlines the framework wherein which the DA will operate until the end of

the decade. The DA introduced three major programmes in support of MTADP requiring massive research extension, and training and other agriculture support services. These programmes are: Grains Production Enhancement Programme (GPEP); the Medium Term Livestock Development Program (MTLDP); and Key Commercial Crops Development Program (KCCDP). The successful introduction and implementation of MTADP heavily relies on the research, extension and training capabilities of DA. The radical restructuring of the DA under the LGC's devolution had severely constrained the implementation of the field programmes pertaining to the MTADP. Thus, the trend and impact on agricultural production and farming systems requirements for research, extension and training activities will continuously be expected on the kind and nature of agriculture support services at the LGUs.

II. THE STATUS AND ROLE OF SUPPORT AGENCIES IN FARM MANAGEMENT EXTENSION SERVICES

- A. Department of Agriculture's Extension Strategy.** The DA's major extension activities had been directly driven by the MTADP (1993-1998) through Key Production Area (KPA) Strategic Approach. The KPA approach identifies and focuses government support on certain priority commodities and areas whose agroclimatic features and market conditions are favorable for producing and marketing certain products. It encourages farmers and fisherfolks to produce specific crops, livestock, and fisheries products only in areas where they have comparative advantage. However, some observations were noted in the implementation of the MTADP: (1) "It is obviously top-down, narrowly focused, has little, or no participation of farmers, requires a large number of staff for delivery and monitoring, and has little chance of successfully achieving targets set or being sustainable in the long term once support subsidies are removed", (2) "In twelve provinces, there are an estimated 3,000 agricultural technicians servicing 1 million farm families, representing a possible face to face extension service of one agriculture extension worker to 330 farm families. This ratio will increase, in view of the LGUs being under pressure to reduce their Agriculture Technicians (ATs) to a level that they can afford;" (3) "The LGU's AT, while having the most critical job in agricultural development services had least resources, and was least skilled and knowledgeable to undertake tasks associated with the extension process addressing local problems and issues. Hence, considerable benefits would be derived from training in extension methodologies, extension strategic planning, communication skills, farm problem diagnosis, financial analysis and farm management.
- B. ATI and other organizations.** Other organizations, including ATI and other attached agencies of DA, also have some roles and responsibilities for farm management/extension services, besides the ATs of LGUs. Notably, these are the research and extension personnel and regional/provincial/municipal staff of various programmes of the SUCs, DOST, DAR, CDA, DENR and NGOs. However, the impact of these groups on agricultural development appears limited and is generally project/commodity/study/location-specific.
- C. Selected Illustrative Programme Experiences.** Some of the selected illustrative program/project experiences related to farm management/advisory services are given below.

1. **The Agriculture Training Institute's Model Extension Project (ATI-JICA, 1995).**

This pilot project was a joint undertaking of the ATI and the JICA from May, 1993 to Dec. 1994. The main objective is to establish new extension methodologies using farm management and related techniques to increase farmer's income. Three pilot sites were involved: (1) Two municipalities in Bataan with 6 farmer-cooperators using Farm Record Keeping in low cost rice farming/production; (2) One municipality in Antique using Group Study Method for processing of fish by the Rural Improvement Club members and bamboo craft by the 4-H Club members; and (3) Three municipalities in Cavite using Demonstration Farms of the different application of fertilizers such as organic and inorganic and combination of both fertilizers for high value vegetables crop production. Series of orientation meetings, rapid assessment, and seminar-workshop for the farmer-cooperators and extension workers (EWs) were conducted with the assistance of JICA Expert and Extension Method Research Committee from other agencies. The main role of this Committee is to come-up with improved Training System and Guidance for the EWs. Based on the results in the three pilot sites, increase in income can be achieved as a result of model extension activities with regular consultation/visitation of extension workers, organization of farmers into group activity and continuous practice of farm record keeping. The success can also be attributed to the motivation and commitment of ATI staff as well as the local officials in the pilot areas.

There is a need, however, to validate and replicate the modeling projects for multi-location testing before it matures for area-wide expansion.

2. **The University of the Philippines Los Baños-Farmer-Scientists Training Program (FSTP).** This UPLB-CA-NCPC initiated pilot extension project started in Cebu on 15 July 1994 as a crop (corn)-based FSTP for Sustainable Agricultural Development. The UPLB is now expanding/replicating the implementation of this project in a number of areas, in particular in selected agrarian reform communities (ARCs). The main objective of the project is to give farmers direct contact with agricultural scientists to develop their technical and scientific capabilities to grow crops utilizing appropriate farming technologies. It also aims to strengthen the research and extension capabilities of LGUs and SUCs so they can render better and effective extension and training services in their areas of responsibilities. Specifically, the FSTP aims to: (1) cultivate/upgrade knowledge and skills of farmers on values, attitudes, team work, cooperation and sharing of technical information; (2) Equip farmers with scientific knowledge and technologies in various farming systems; (3) apply Integrated Pest Management (IPM); (4) make farming as a business enterprise; (5) develop self-reliant and self-sustaining farmers and communities; and (6) strengthen the farmers' leadership in their respective communities.

As prescribed by the College of Agriculture/National Crop Protection Center there are three phases of program activities, namely:

Phase I. Value Formation, Research Exposure and Technical Empowerment

Phase II. On-Farm Experimentation and Technology Adoption

Phase III. Farmer-to-Farmer R&D and Technology Transfer

This “farm-firm management-cum-community empowerment project” for food security through farming systems requires multi-faceted strategy with the following components: (1) Social mobilization, sensitization and value formation of the target-Clients/Communities; (2) Organization and Strengthening of a viable-community-based organizations (CBOs); (3) Creation of Sustainable Food Security and Income-Generating Activities (IGAs); (4) Capacity-building through CO/Training/Skills Development; (5) Linkage and Networking with UPLB, DA-ATI and other support organizations/institutions including SUCs and LGUs and (6) Empowerment of Agricultural/Rural Communities.

The Farmer-Scientists who completed all the phases of the training program can serve as the connecting link to the SUCs scientists and extension workers of LGUs. They have become multipliers by adopting more farmers in their barangay/village or in their neighboring farms. They have indeed gained confidence in making farming as a business enterprise.

- 3. The Soro-Soro Integrated Development Cooperatives.** This is a case of group farming and marketing of poultry and livestock community-based cooperatives located in Batangas Province, Southern Tagalog Region. It has become a multi-awarded, significant best practice and results 30-year old (1969-1999) viable cooperatives that started from an initial 13 to 1600 + members farm association farming-members development cooperatives; and with an initial asset of P11,800 to P 161 Million, earning a net income of P44 Million a year. With leadership perseverance and dedication, it generates two best practices and results: (1) that of bringing economic benefits to farming households; and (2) that of strengthening social-political fiber in the countryside. Presently, it has the following business ventures: lending schemes; savings mobilization; 4,000 bags/feed mill contract farming; mini-mart/stalls operation; hog selling/fish pens; and rolling meat shop.

The major farm business objectives of this cooperative are (1) to raise piglets and broiler chicks and to market the full grown hogs and chicken; (2) to manufacture feeds primarily for their members; and (3) to sell consumer goods. For the contract farming scheme, piglets/broilers, feeds, technical services and farm business advice in terms of management, care and disease prevention, (4) veterinary medicines are provided by the cooperatives. Marketing is also taken cared of by the cooperatives. For new contract farmers, attendance at a training/seminar on hog/broiler raising organized by the Education and Training Committee (ETC) of the cooperatives is required. To ensure success of the contract farming operation, the cooperatives employed agricultural technicians for veterinary/technical advisory assistance including marketing.

The management/leadership, membership and staff of the cooperatives are highly educated. The Chairman of the Board has the Doctor of Veterinary Medicine and also serve as the Provincial Veterinarian. Except for the Chairman, the officers are all females with age ranging 32-45 years old and with an average of 6 years in their present jobs.

The Cooperative has midterm and long term development plans. Both plans providing for the increased veterinary assistance to members as a way of expanding farm business operations and increasing farm profitability.

4. Farming Systems Development of FAO-TSARRD Project.

This project funded by the Government of Italy, commenced in August 1989 but fully implemented in March 1990. By the end of March 1993, some 40,000 ARBs were expected to have been organized into groups and for another three years, around 65,000 ARBs. The extension's emphasis is on consolidation, strengthening and overall sustainability of farmers organizations. The following improvements of project activities relate to farm business management perspectives, namely: (1) systematizing comprehensive FSD training programmes for technicians and farmer leaders; (2) strengthening agribusiness-oriented advice to farmer's groups; and (3) involving newly empowered LGUs in the coordination of project-related activities at provincial and municipal level. The FSD approach as implemented by TSARRD and DAR was generally appreciated by both GOP-DAR and by the farm households at the ARCs. DAR requested for its extension with the Government of Netherlands (GON) funding (1997-2000) under "Sustainable Agrarian Reform Community-Technical Support to Agrarian Reform and Rural Development (SARC-TSARRD). This project is a continuation of FSD approach and will continuously improve its implementation methods towards the development of a more sustainable farming systems and tailor made to farm business activities at the household level (i.e. Small Farm Improvements and Follow-Up Training Programmes including Farm Business Analysis).

D. Farm Record Keeping. As regards farm record keeping (FRK) the Philippine farmers in general rarely kept a systematic records of their farm business. This observation is particularly true among small farmers whose FRK's practice is an exception rather than a rule. It should be noted that the primary purpose of FRK is to obtain as accurately as possible farm information which maybe used to better understand what farmers are doing and why, to assess the technical and economic viability of alternative farming systems, to develop better approaches to farm organization and allocation of resources.

The term FRK connotes the keeping of detailed records by a farmer of his farm's daily operations, income and expenses. It also refers to data collection activity of a research organization which involves the keeping of records of a group farmers with some guidance and support from the researcher. In this context, two recent experiences in FRK projects could be cited: (1) Model Extension Project of DA-DTI with FRK as a component; and (2) IRRI/UPLB FRK Project (Gonzaga & Paris, 1985).

1. DA/ATI'S FRK in Model Extension Project. The different concepts/subjects discussed during this pilot project's training has been reported to have developed both the extension workers (2) and farmer-cooperators (6) knowledge & skills in FRK. Accordingly, they have also changed their attitudes and perceptions by working closely with the farmers through frequent visits and contacts. Other indicators of attitudinal changes are those with respect to the imparting of technology to other farmers, ATs and LGU official's interest to undergo other trainings like cooperatives, crop production, and Post-Harvest Technology.

Specific knowledge gained after this project disclosed by the farmers are the following:

1. FRK should be a part of their operation.
2. Right entry of data on the FRK format
3. Proper production planning and record keeping can be used as tools for decision-making on farming operations.
4. Recording of farm activities should be done daily so as not to forget the entries to be made.
5. Choice of appropriate varieties.
6. Right amount of fertilizer and pesticides associated with the timing of application.
7. Proper water management.
8. Integrated Pest Management
9. Use of organic fertilizer
10. Composting

However, despite the significant utility of the training and the FRK activities; and the farmers claimed that their decision-making capabilities and implementation strategies have been strengthened, the DA-ATI's replication had been reported to be very limited.

2. **IRRI/UPLB FRK Project.** This project had been conducted for 3-5 years from the point of view of the research organizations. Detailed records of a group of farmers are kept with some guidance and support from the researcher. As borne out by the project experience, the following limitations could be cited:

1. The cost of implementation as a result of requiring the maintenance of field personnel for several years plus backstopping from the main office of the research organization. The major costs components are the salaries and wages of field personnel, transportation to, from and within the research site, data processing equipment, record forms, supplies, data processing and analysis, meetings and workshops.
2. The very large volume of data entry, encoding and punching as well as delays in data processing.
3. FRK has a rigid structure i.e. once the data set is decided and the record forms printed there is very little scope for adding new information.
4. FRK tends to be site specific for a particular socio-economic and agro-climatic environment.

III. FARM MANAGEMENT TRAINING AND MATERIALS

A. Extension Services Approaches and Farm Management/Related Materials Used

The extension service approach has shifted from the transfer of technology (TOT) service-oriented model to a participatory approach (PA) management oriented model. The PA management is based on three major elements: (1) expressed needs of the clients; (2) group effects/actions; and (3) effective participation.

The TOT programs of the different delivery services (GO, NGOs, SUCs etc.) have been widely operationalized in the earlier extension delivery services. A typical example is the program of "Masagana 99"/Rice/Corn Production Program wherein

rice/corn farmers are required by the DA's and Local banks AEWs or Farm Management Technicians (FMTs) to learn/submit through their assistance a farm plan and budget. This is a prerequisite to their getting a production loan from the local/rural banks. Farm Management Training programs and materials for the training/seminar/workshop purposes were then widely used and publicised during those period.

The TOT programs of the SUCs in particular UPLB have been widely used too. Those programs, normally being headed by an agricultural economist, were the "Farm and Home Development Office/Program", "the Supervised Credit Program", and "The Social Laboratory Program", of the College of Agriculture and DA, the Agricultural Credit and Cooperatives Institute and the Development Bank of the Philippines/The Philippine National Bank; and the College of Agriculture and SEARCA, respectively. The materials related to farm management/business advice are relatively adequate then than the recently identified PA model.

Although the TOT approach was used in basically commodity (e.g. rice/corn) and study/project oriented programs, the farm business advice had been integrated as one of the technical components of crop/livestock production. The case of DA-Philrice by way of illustration have been using the following extension delivery service materials: "Technoguides; technology leaflets, serialized comics (sent to local magazines), instructional videos (10-15 minutes "how-to-format"), radio-farm-program, extension kits (Print materials, audio cassettes, roll films/slides, and activity record books). In these above identified materials, the provision of farm business advice has been integrated but very negligible. The extension services are more on agronomic-technical terms rather than economics/farm business aspects.

The more recent PA management-oriented model considered in various extension programs such as in DA-FRK Model Extension Project, FSD, FFS/FSTP used various extension materials along with personal face-to-face interaction by extension stakeholders. However, of the above PA extension service programs only the DA-FRK and FSD used explicitly materials specially publications for farm management business advice. Again, the other programs including FFS and FSTP used agronomic-technical materials relatively more than the economic/non-technical subjects/materials.

B. Farm Management in Formal Education Programs and Courses Content

This part of the report basically refers to manpower development among AEWs, SMS, NGO personnel etc. with appropriately needed knowledge and skills in farm management and related fields. This development is conducted through SUCs and research institutions including PCARRD, IRRI and PhilRice through their teaching and research works primarily at the Department of Agricultural Economics and related fields like farming systems development. These institutions reported to have emphasized technical and non-technical knowledge and skills within the (multidisciplinary and interdisciplinary) multi-sectoral context of agricultural and rural development. For the FSD, another basic element is the consideration of micro-macro continuum including its interaction with nature and socio-economic environment. The continuing development of farm management and related fields e.g. FSRE and FSD involves the micro-meso-macro career interaction among stakeholders such as the students, farm/rural households, government and NGOs personnel.

The formal education programs and courses contents offered by educational institutions including research organizations for farm management and related extension personnel could be best illustrated by SUCs under the College/School of Agriculture and related colleges/schools offering courses in agriculture economics and agribusiness. For purposes of illustration, SUCs experience in particular the case of UPLB could be cited. Two distinct institutions at UPLB are considered to have formal education programs with farm management and farming systems curriculum, namely, The Department of Agricultural Economics and Department of Agribusiness of the College of Economics and Management (CEM) and the Farming Systems and Soil Resources Institute of the College of Agriculture.

1. **COLLEGE OF ECONOMICS AND MANAGEMENT.** The College of Economics and Management (CEM) offers two related undergraduate degree programs, namely, Bachelor of Sciences in Agricultural Economics and Agribusiness. The agricultural economics has farm management and production economics as one of the major areas of specialization in the curriculum. The agribusiness curriculum came into being as a response to the felt need for administrative/managerial expertise to perform the agribusiness function geared towards the transformation of agriculture into commercial undertakings. Apart from the above four year curriculum, CEM also offers two diploma programs to be taken each for a 10 month period: the Diplomas in (1) Agribusiness and (2) Agricultural Economics.
2. **UPLB-CA's Farming Systems and Soil Resources Institute.** This Institute was established on October 16, 1982, as part of the effort to institutionalize the farming systems approach to research and development (FSR & D) in the country. By taking an indicative cursory glance of its training activities the first five years of its operation is far better than the recent five years, in terms of the number of training activities conducted and coverage of participants. These are 38 training activities with 1048 participants during 1982-1987 in contrast to 17 training activities and 339 participants. Apparently, this is indicative of the trends of SUCs training activities. As regards the coverage of agricultural economics and/or farm management/advisory services, it appears too that this is inadequately covered if not negligible. The course content is more on technical and agronomical than of socio-economic aspects.

The list of sample specific courses of UPLB, DAR and ATI is shown in Annex 1.

C. **Farm Management in In-Service Programs**

1. **DALGUs.** The transfer of some 17,000 plus staff from the DA to provincial and municipal offices has created a tremendous challenge to the LGUs to accommodate the new staff, effectively and efficiently organize them as operational extension and training units and provide the necessary assistance including financial support, technology transfer and training programs. Apart from these, the 6 staff bureau of the DA and some of the 24 attached agencies are

also indirectly or directly involved in extension and training activities at the farm level.

2. **ATI.** The ATI has the mandate, responsibilities and activities for providing improved training and technical information in DA, from LGUs' extension workers and farmers and fisherfolks through the Regional/Farmer Training Centers (RTC & FTCs). The mandate indicates a pivotal role for ATI in agricultural development in both Human Resource Development (HRD) and information technology transfer. This mandate too has not been affected by the implementation of the Local Government Code.

ATI has a total personnel of 931 composed of 483 technical/training personnel and 488 administrative/support service personnel. This staff requirement are reinforced by a pool of faculty/staff on call from SUCs and resource persons from NGOs and other agencies. However, the main constraints of the training services offered by the ATI are not organizational, but associated with too many administrative staff, problems with timely disbursements of funds to required training centers, lack of self-financing capability of regional training centers, supply of training materials from ATI-central office and orientation of training courses to needs assessments of LGU staff and farmers.

3. **SUCs.** The SUCs also maintain extension and training staff and operate within their local vicinities. Extension and training activities on farm/field/community-level appear limited. Lack of internal/operational funds for undertaking the above activities is given as a constraint. The SUCs faculty/staff are primarily engaged in teaching activities. Each SUC carries out extension and training activities independently of other SUCs.
4. **NGOs/Private Organization (POs).** Most NGOs/Pos concern with agricultural development conduct extension and training activities as part of their local development projects and independently of LGU activities. Similarly, POs activities are concerned with the promotion of their products.

The general categories of the training programs conducted by the above agencies are as follows: (1) Overseas/Study Tour and (2) Internal Training Programs which cover (a) In-Service Courses/Training; In Service Workshops/Seminars; and Exchange Visits/Study Tours. Furthermore, these Training programs are generally noted to be donor-driven. Therefore, the training programs modalities, content and frequency are dictated by Donors/Sponsors and availability of funds.

Table 1. AIDAB's Agri-Tech Project.

<p>AIDAB's Agri-Tech Project. In Region II, this project is developing programmes, approaches, methodologies, curricula for the Diploma and Bachelor of Agricultural Technology and Extension (DAT/BAT/DAE/BAE at the State Colleges. The experiences and materials could provide an excellent opportunity and example from RTC and FTC staff to learn from this experience and for the SUCs to contribute to the agricultural development processes.</p> <p>These training programmes refer to research methodologies, greater use of farm demonstrations of new technologies, field day, field testing of extension and training materials with farmers. Other subjects/contents refer to economics, farm management, social analysis and E/A.</p>

Table 2. Summary of PhilRice's Training Activities, 1987-1992 (5 Years) Social Science & Policy Research Division (SSPRD)

ACTIVITY	NO. OF TRAININGS CONDUCTED	NO. OF PARTICIPANTS
1. Rice Prod'n Training Program for NGO Farmer-Beneficiaries of the Integrated People's Livelihood Cooperative System (IPLCS)	38	37,480
2. Rice Prod'n Training Program for Farmers' Cooperatives/Org.	13	2,267
3. Trainer's Training Program	23	711
4. Trainer's Briefing	10	486
5. Rice Seed Prod'n Training Program for Farmer Cooperatives/Groups	21	716
6. Training Support to PhilRice Special Projects	7	98
7. Specialized Training Programs	14	316
8. Technical Briefings on Rice/Rice Seed Production	35	1,407
9. Institutional Workshops and In-House Training Programs	9	565
10. Job-Enrichment Training Course for NGO Extensionists	10	369
TOTAL	189	46,066

<u>Clientele Category</u>	<u>No. of Participants</u>	<u>Percent</u>
Farmers	42,504	92
Trainers	1,297	3
Subject matter Specialists	300	a/
NGO Technicians	369	a/
Researchers	1,680	4
Broadcasters	16	a/
TOTAL	46,066	100

a/ less than one percent

Table 3. Summary of ESSRI's Training Activities, 1982-1987 and 1994-1999 first and (5 -year period each)

ACTIVITY	NO. OF TRAININGS CONDUCTED		NO. OF PARTICIPANTS	
	1982-1987	1994-1999	1982-1987	1994-1999
1. Farming Systems Research Methodology Training/ *Adaptive Research in FSD/IFS	21	9	431	52
2. FSR and D Orientation Seminar *Instruction/training/extension Materials Development	2	2	127	19
3. Symposium on FSSRI * Multi-Sectoral Consultation or farming System and Watershed Conservation	1	1	120	100
4. Coco-based FSR and D	2		80	
5. Sugarland Diversification Workshop	1		90	
6. Hilly land/Rainfed Agric	4	1	42	42
7. Trainers Training on FSRE/CO	2	2	42	68
8. Workshop TNA for FSR			30	
9. RRA and FSRD/PRA and M & E			22	44
10. Farming Sysytems and Mgt. *1 PM in FSD/Crop Mgt.	1	2	15	14
11. Nursery Establishment	1		13	
12. Other Plantation Crops etc.	3		30	
TOTAL	38	17	1,042	339

IV. STAKEHOLDERS NEED ASSESSMENT

A. Training Needs Assessment

1. **Farmer's Needs and Interest.** Various extension programs including the TOT model have contributed and provided lessons learnt to the improvements of a more participatory and effective approach to extension delivery services at the farmers level. This level required a broader community focus and more responsive to locally identified needs and opportunities. This would be specially true for agrarian reform communities (ARCs).

It was realized that the extension service has a commodity specific forms which emphasizes input supply with insufficient attention to: the socio-economic diversity of the rural community; farmers ability to learn from each other; management constraints; integrated farming interests; complementary between livestock and cropping; conservation practices on the uplands; post-harvest handling and marketing.

The LGU funds have been noted to be negligible if not lacking for effective and efficient delivery of extension services to meet those farmers' needs and interest for farmers training programs, field demonstration, information/publicity campaigns, farmers visit/study tours to observe and discuss problems/issues/practices with other farmers in different locations, investigative

studies/research to address local problems and recruitment of expertise for inputs in preparation of action plans including farm plans and budgets.

The more fashionable trend for extension delivery is the farmer to farmer approach where farmers are trained as extensionist/trainers (both in adult extensionist/trainers skills and learned technical information) and then using these farmers as trainers of other farmers or become “local supervisors” of farm improvement schemes. This strategy has been successfully used by DA-ATI and SUC’s like UPLB and VISCA amongst others, in a number of situations to increase the scope, effectiveness and impact of extension and training services.

It is generally accepted that efficiency and effectiveness of farmer to farmer communication process have been responsible for the extension of those technologies which had a major impact on agriculture development. The use and replication/expansion of those processes through active participation of farmers could further increase the impact of extension/training programs.

2. **Extension Worker’s View.** The assessment of training needs, planning of curriculum and implementation of training programs that include farm management/business advice will require the expertise and facilities of the existing Training Centers to be substantially upgraded. Improving farmers skills, through LGU extensionist skills accordingly will require training in adult education principles and practice, learning contract modules, strategic management approaches and principles, apprenticeship skills/schemes and experiential approaches and learnings that could increase the capacity and capability of the extension staff of LGUs.

Some of the excellent lessons learnt from the participatory approaches conducted by various noteworthy successful programs (e.g. FFS/FSTP/AIDAB-Agri Tech Project) including their training materials and curricula could, and with some modifications, be used for training programs for LGU staff and farmers.

It was further noted that with the extension devolution under LGC, the skills and knowledge of extension staff are inappropriate for their new roles. Therefore, it would be beneficial if they could be trained in updated/current extension methodologies, extension planning, communication skills, farm problem diagnosis, financial analysis and farm management.

The SUCs experience through substantial farmer and community consultation through the process and outputs generated are highly relevant to the Extension and Training Services Development and could provide an excellent opportunity for adaptation for DA-ATI/RTCs/FTCs and other SUCs.

3. **Decision Makers Views on Extension Options for Improvement to Support Commercially-Oriented Farmers**

The devolved extension services to the LGUs require increasing participation of farmers in the agricultural development process. The leadership/officials of DA, ATI and LGUs wanted the goal of extension to stimulate economic activity in agricultural sector by involving farmers (1) in

identification and prioritizing problems and constraints to increasing productivity and incomes from farming; and (2) together with these devolved extension services, plan, implement, monitor and evaluate, focused location specific action plans to address those problems. Emphasis as officials claimed should be given to demand-driven extension services. The extension staff of the future will need highly developed analytical skills of agriculture production systems and a wide network of contracts in both private and public sectors.

These extension staff would become facilitators/brokers of information. To ensure relevance, these extension workers need to acquire skills to assist in problem analysis of farm production systems and to be able to access funds for local/community development programs.

Considering the above conditions, the extension/training services should be developed at two levels-provincial and/or municipal and then ultimately at the community-based organizations (CBOs) and/or grassroots level. These options for the improvement of extension delivery systems were considered in view of the fact that there is little evidence to suggest that there was effective extension service in place before devolution. Apart from this, there was a general lack of support of local chief executives to the ATs/extension workers.

Therefore, the challenge facing localized programs in the Philippines are as follows: (1) More and more farmers need to be contacted/involved with new technology messages; (2) intensified use of mass media facilities like radio and TV; (3) Strengthen linkages if research-extension-farmers and institutionalize the continuous information throw among them; (4) Develop programs for quality extension personnel in the future; and (5) Develop monitoring and evaluation (M & E) system to measure the effectiveness of farm management/advisory extension services with a view to develop innovative techniques.

V. CONCLUSION AND RECOMMENDATIONS:

A. ENTRY-POINTS

1. Incorporating Farm Management and Farming Systems Approaches in Agricultural Development Programmes.

- a.** The Farm Management/System Approaches have been on the agricultural development agenda during the past five decades. Many useful concepts, approaches and techniques have been developed, transformed/changed in emphasis and popularity under such headings as (at least for FAO UN and member countries including Philippines) “farm management and production economics” into “farming systems analysis, research, extension and development”. The socio-economics and technical components have changed under the label’s emphasis and popularity. Despite the diversity of labels, the implemented programs have played a very important role in the over-all research, training and extension activities of the country.

- b. It was noted that a strong farm management programs/activities were carried out and experiences shared by experts from 1950s and 1960s. During this period, various farm management themes have been reviewed through seminars/training/extension activities such as “allocative efficiency of resources”; “farm plan and budgeting”; “research and extension”; and “intensification and diversification”. The national training centers were established and training programs conducted then for the farm management profession have been much popularized, numerous and useful relative to other professions. Farm management manuals and other related publications for research and extension/training have been published. However, the broadening of activities of farm management profession into other technical aspects have seen a decline in the level of farm management-focused activities.
- c. The evolution of farming systems management and development has been initiated with the work labeled as “small farmer development (SFD)”; “Group Farming Schemes”; “SFD: Problems, Data and Information Requirements”; Research, Training and Extension Programs. This was followed by programs in “small farm productivity improvements in less favorable environments (upland/rainfed areas)”. Then came the emphasis on “Institutionalizing the Farming Systems Research, Extension and Development”. The latter, “Farming Systems Development (FSD)” is an attempt by FAO to synthesize the above concepts, approaches and methodologies to understand farm-family systems and environment to improve on technical and support services, area development activities and some aspects of agricultural policy analysis.
- d. The first two decades of farm management experience could be instructive for farming systems development. First, the farm management programs; then follows the training centers, the training programs mainly in-service types to the posts created; the publications and materials; and networking of professionals/practitioners (both local and foreign). Both have experienced the lack of documented success stories, detailed methodologies and updated manuals for trainers and practitioners.
- e. The change in complexity of agricultural and rural systems has called for an evolutionary change in concepts, models, approaches and methodologies. Organizing an “Expert Consultation/Technical Discussions” on the above areas could be timely and useful. The advent of new information communication technology could regain the importance and momentum for farm management and business advisory services.

2. Strengthening Decentralized Extension System

- a. Control over extension systems can be exercised at the center, through rigid bureaucratic and personnel regulations or it can be deconcentrated to an accountable and responsible agents stationed at the field. The decentralized system will assure extension programs to fit more accurately to local needs, perceptions, values, knowledge and natural

conditions/environments and less likely to be controlled by bureaucratic needs. This is what the Local Government Code expects with the devolution of extension functions primarily from DA to the local government agencies: provincial and municipal levels.

a.1 Provincial Extension Services. This would strengthen the extension planning and the need for farm management and advisory services as a policy; adaptive research and technical capability for extension delivery. Investments required are in in-service training courses; study tours; exchange visits; workshops and seminars; and participatory on-farm adaptive research trials.

a.2 Municipal Extension Services. This would strengthen the extension planning and delivery capability of the agricultural technicians (ATs) of the municipal government. Investments required are on in-service training courses; workshops; seminars; and study tours. ATs have to improve their skills and knowledge of technologies and technical information, extension methodologies; extension planning; farm problem diagnosis; financial analysis; and farm management and participatory on farm demonstrations. Major emphasis would be on the development of annual extension plans and technical assistance would be provided to support local staff in development of training and extension programs.

3. Scaling-Up of Participatory-Management Oriented Approach (Model)

a. There are two major extension alternatives that are available and the lessons learnt are instructive for the country: (1) The Transfer of Technology (TOT) Service-oriented Model and the Participatory Approach Management Oriented Model.

a.1 The TOT Model is a “top-down” and based on “ packages of information” provided to extension officers who pass on this information/technology to the farmer for adoption. It was noted that the culture of the Department of Agriculture’s extension activities under MTADP (1993-1998) was “top-down” narrowly focus and has little or no participation of farmers. Work objectives are based on reaching targets of input delivery rather than on outcomes and outputs (i.e. increased farm family incomes).

a.2 In contrast, the Participatory Approach (PA) Management-Oriented Model has the explicit aim of gaining farmer participation- “bottom-up” hence faster and sustainable change of farming practices and generates socio-economic development in the community. There are a number of programs/projects by the SUCs and NGOs/Pos that could be further tested/validated or even ready for expansion and replication. Concerned extension agencies and donors should explore these various models for

adaptation. A number of these models have been cited/illustrated in this report (e.g. SIDCI, FFS, FSTP).

4. Pilot Programs on Farm Innovations and Farm Business Development

a. SARC-TSARRD

a.1 One of the pilot programs claimed to be successful is the “Sustainable Agrarian Reform Community-Technical Support to Agrarian Reform and Rural Development (SARC-TSARRD)”. This was implemented since 1990 and still on-going or about to wind-up this year. Observations were noted that the systems approach (though modifications/improvement are still needed) to the development of ARCs is having a significant impact both at the field extension staff and the farm households at grassroots level. This project is constantly adjusting its methodology and training materials while continuing and expanding its field activities.

a.2 The present expansion of the project demands a closer and continuing analysis of the applied methods and the resulting outputs/outcomes. These outputs/outcomes refer to the mobilization of local political support; the mobilization of technical support; and the mobilization of investment funds for the development and implementation of the (1) Physical and Infrastructural components; (2) the Small Farm Improvements; and (3) the Follow-up. Training programs as laid down in the ARC Development Plan. This “three pronged approach” is essential to foster self-reliant sustainable development.

a.3 An important yardstick for the measurement of this approach is the independent formation of localized FSD Teams in the Barangay/ARC where trained teams are successful in increased sustainable productivity and income of ARBs. The above approach needs a comprehensive documentation for a continuing nationwide adaptation.

b. Farmer Business Development Project

b.1 This is recently proposed project that will showcase a revitalized extension service through the delivery of market-driven support services of the different agencies of DA and the private sectors to LGUs and rural based organizations. It is a pilot program in 8 provinces of 4 regions using information communication technology.

b.2 The farm innovations and delivery of services are as follows:

b.2.1 Packages of the latest available best practices in agriculture and fisheries;

- b.2.2** Decision support tools for managing change in farming and fishing;
 - b.2.3** Support for the implementation of pilot projects on farm innovations including production of high value crops, new practices on quality control, production, processing and packaging, pilot marketing and others;
 - b.2.4** Access to information through information communication technology and other means of communication;
 - b.2.5** Mentoring services
 - b.2.6** Linkage with local and foreign buyers
 - b.2.7** Training of extension workers through distributed learnings.
- b.3** This project envisions that the rural based organizations will aggressively implements farm innovations with the assistance of highly trained and informed research and extension workers. Like the above projects, it is noteworthy to have this program closely watch as a novelty approach using internet technology.

B. PROPOSED PRIORITIES

1. Materials Development, Training and Technical Support.

- a.** Anyone working in the field of agricultural economics in particular farm management and production economics will note that Farm Management Manuals for Research and Extension have been prepared for the Asian Region in the early 1960s. This was also true in the Philippines (1960-61). Since then no comprehensive manuals have been prepared except for the “Farm Management Know-How and Information Tools (FARMKIT)” prepared by Dr. Alfredo B. de Torres in 1996 for the FAO-RAPA. Relatedly, the advent of the FAO’s Farming Systems Approach has produced “ Guidelines for the Conduct of a Training Course in farming Systems Development “ published in 1990 and reprinted 1993. This material has been extensively used in the FAO-TSARRD” FSD in ARC Development Training Course. Given the rich experience and the role of farm management in FSD, the seemingly inadequate materials development should immediately be rectified not only in the Philippines but also in the Asian Pacific Region. It is suggested that a “Modular Training Approach” that incorporates Agribusiness and Best practices and Results in farm Business Management and Farming Systems Development should comprehensively be prepared to accompany the prepared modules.
- b.** Training and Technical Support components should be addressed to the Research, Training and Extension Programs for the local government agencies since devolution. Apart from materials development for

concerned institutions/agencies (DA/ATI, SUCs, NGOs etc), there is a need for Training/Technical Support for upgrading RTC/FTC Facilities; Training Needs Assessment; Curriculum Development and Technical Training. These requirements/considerations will also be true for both research and extension activities.

2. Technical Assistance

2.1 General Assistance

This should be provided to assist in curricular development, through consultation, testing and validation particularly in the development of training programs in farm management, economics and social analysis and environmental assessments of projects. This is a part from course curricula, case studies and training materials development (including textbook/manual production and A-V materials) for specific technical and extension programs for farmers and staff of LGUs and DA regional/local (RTC/FTC) staff. Training Needs Analysis and the preparation, implementation and evaluation of training programs for farmers, extension workers and training officers as well as researchers would be supported by both international and local technical assistance.

2.2 Specific Assistance

Since the extension devolution period, it has been recognized that the quality of the agricultural extension services has become one of the major constraints to agricultural development. It has been noted too, that poor motivation, lack of career advancement and inadequate support of local government executives contributed to the poor LGU's extension delivery of services. This poor motivation and related factors resulted to amongst others: (1) lack of appropriate and updated training programs; (2) lack of updated technical information; (3) lack of management capability; (4) lack of direction from the concerned local authorities; and (5) lack of financial resources and mobile/transport facilities.

2.2.a Organization and Management

In view of the above, proposals on the "organization and management of technology research, training, extension services and project management" are considered urgent for the LGUs, both at the provincial and municipal/barangay-based levels. The technical assistance for this purpose must also give a high priority to both pre-service (Diploma level: Agricultural Technology/Extension) training and In-service training of LGU officers.

2.2.b Training and Material Developments

Three different types of courses for which material developments could also be developed are suggested here as follows:

2.2.b.1 AGRICULTURAL EXTENSION TRAINING

- Technical Courses
- Extension Supervisory and Programming Courses
- Extension Management Courses

2.2.b.2 PROJECT PLANNING AND MANAGEMENT

- Project Planning (Extension Research/Training) Techniques
- Project Appraisal (M & E)

2.2.b.3 AGRICULTURAL SURVEY, INTERPRETATION AND REPORT WRITING

- Survey Methods/Techniques
- (Formal/Informal)
- Data Interpretation & Report Writing

2.2.c Other Pre-identified Specific Programs

2.2.c.1 Community Participation and Empowerment for Sustainable Food Security Program

a. Team Leader/CTA (International)

b. National Experts (local Staff)

- Community Organizer
- Farm Management Specialist
- Training/Communication Specialist
- Support Staff/Volunteers

c. Inservice Training

- PRA Training
- Participatory Development Training
- Skills Development & Management

d. Workshop and Seminars

2.2.c.2 Small Farm Improvement Program

- a. Farm Business Advisory Services Through International and local consultants extended to ATI and LGUs
- b. Technological Research Activities
- c. Appropriate Training for Researchers, Trainors and Extensionists
- d. Direct budgetary Support for Demonstration plot activities
- e. Monitoring and Evaluation

2.2.c.3 Farm Business Development Program

An Integrated Market Driven Technical and support service of DA/ATI and LGUs to revitalize the

Agriculture Extension Service at the Local Agency Levels.

- a. Develop and Package Information on Best Practices and Results Farm Innovations (BPRFIs).
- b. Develop effective EIC between Researcher-Extension Workers and Community-Based Organizations/Farmer Members
- c. Implement BPRFIs using Participatory Approach
- d. In-Service Training
- e. Credit, Supplies, Marketing and other Support Systems

BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS

FIRST YEAR

First Semester

BOT 1, Introduction to Plant Science	3
1, Communication Skills	3
HIST 1, Philippine History	3
MATH 11, College Algebra	3
SOSC 1, Foundations of Behavioral Sciences	3
ZOO 1, General Zoology	3
CMT 11*	(1.5)
PE 1	(2)
	18

Second Semester

ANSC 1a, Introduction to Animal Science	3	COMM
CHEM 15, Fundamentals of Chemistry	5	
COMM II, Communication Skills	3	
CRSC 1a, Fundamentals of Crop Sci.	3	
MATH 14, Plane Trigonometry	3	
CMT 12*	(1.5)	
	17	

SECOND YEAR

First Semester

ANSC 1b, Intro. To Livestock and Poultry Production	3
CRSC 1b, Fundamentals of Crop Sci.	3
ECO 11, General Economics	3
MATH 26, Analytic Geometry and Calculus I	3
PHYS 3 General Physics 1	3
STAT 1, Elementary Statistics	3
Cmt 21*	(1.5)
PE 2 or 3	(2)
	18

Second Semester

COMM III, Speech Communication	3
ECO 101, Intermediate Macroeconomic Theory	3
HIST. II, Asia and the World	3
HUM 1, Literature, Man and Society	3
PHYS 13, General Physics II	3
SOIL 1, Principles of Soil Sci.	3
CMT 22*	(1.5)
PE 2 or 3	(2)
	18

THIRD YEAR

First Semester

AECO 103, Statistical Analysis of Ag. Economic Data	3
ECO 102, Intermediate Microeconomic Theory	3
ECO 130, Elements of Mathematical Economics	3
HUM II, Art, Man and Society	3
PHLO I, Philosophical Analysis	3
SOSC II, Social, Economic and Political Thought	3
	18

Second Semester

AECO 111, Farm Management	3
AECO 120, Marketing of Farm Products	3
AECO 160, Intro. To Research Methods in Agricultural Economics	3
AENG 2, Fundamentals of Ag. Eng. II	3
ENG 10, Writing of Scientific Papers	3
Specialized Course**	3
	18

FOURTH YEAR

First Semester

AECO 123, Agricultural and International Trade	3
AECO 150, The Economics of Agricultural Development	3
AECO 199, Undergraduate Seminar in Ag. Econ.	1
PI 100, The Life and Works of Jose Rizal	3
STS, Science, Technology & Society	3
Elective ***	3
AECO 200, Undergraduate Thesis In Ag. Econ.	<u>3</u>
	19

Second Semester

AECO 151, Agricultural Policy	3
AECO 199, Undergraduate Seminar in Ag. Econ.	1
Specialized Courses**	9
Elective***	3
AECO 200, Undergraduate Thesis in Ag. Econ.	<u>3</u>
	19

Total Number of Units....145

DEPARTMENT OF AGRICULTURAL ECONOMICS

AECO 1. Fundamentals of Agricultural Management (3) Principles underlying management and their application on agricultural business, offices and programs. 5 hours a week (2 class, 3 lab.) PR.ECO 11. (1,2)

AECO 103. Statistical Analysis of Agricultural Economic Data (3) Statistical methods in the analysis of agricultural economic data, 5 hours a week (2 class, 3 lab.) PR. STAT 1 or COI. (1)

AECO 104. Principles of Agricultural Business Accounting (3) Principles of accounting with emphasis on their application to agricultural business. 5 hours a week (2 class, 3 lab.) PR. ECO 11 (2)

AECO 110. Agricultural Production Economics (3) Fundamental concepts in resource allocation and their application to agricultural production. 5 hours a week (2 class, 3 lab) PR ECO 102 or COI. (1)

AECO 111. Farm Management (3) Principles underlying farm management , including farm labor, marketing agricultural products and analyses of farm costs and returns, 5 hours a week (2 class, 3 lab.) PR. ECO 11, (1,2)

AECO 112. Farm Management Practice (3) . Application of principles of farm management on a commercial farm. 7 hours a week (1 class, 6 lab.) PR AECO 111 or COI. (2)

AECO 120. Marketing Farm Products (3) Principles of marketing of farm products; description of types and functions of marketing organizations and market outlets for agricultural products. 3 hours a week (class). PR ECO. 11 (1,2).

AECO 121. Food Marketing (3) Food marketing principles and practices; economic appraisal of the food industry structure, conduct performance. 3 hours a week (class). PR. AECO 120 or COI. (2)

AECO 122. Agricultural Price Analysis (3) Analysis of the factors affecting the prices of agricultural products. 3 hours a week (class). PR. ECO 102 and AECO 103 or COI. (2)

AECO 123. Agricultural and International Trade (3) Patterns of world trade in agricultural products, national and international trade policies related to agricultural development. 3 hours a week (class), PR. ECO 101 and ECO 102 or COI. (1)

AECO 130. Agricultural Finance (3) History, development and mechanism of agricultural financing in the Philippines; organization and operation of financing institutions serving agriculture; farm appraisal and evaluation, 3 hours a week (class). PR. ECO 11. (2)

AECO 136. Cooperatives (3) Structural organization and operation of cooperatives. 3 hours a week (class). PR. ECO 11. (1)

AECO 140. Land Economics (3) Economic principles as applied to the management of land and land-based resources; study of the physical, economic and institutional and other relevant factors that affect, condition and control the use of these resources. 3 hours a week (class). PR. ECO 11. (2)

AECO 150. The Economics of Agricultural Development (3) An analysis of the role of agriculture in economic development. 3 hours a week (class) . PR. ECO 101 and ECO 102 or COI. (1,2)

AECO 151. Agricultural Policy (3) National farm organizations; economic analysis of different aspects of agricultural policies and programs, 3 hours a week (class). PR. ECO 101 and ECO 102 or COI. (1,2)

AECO 160. Introduction to Research Methods in Agricultural Economics (3) Methods and techniques in conducting agricultural economic research with emphasis on current agricultural problems. 5 hours a week (2 class, 3 lab.). PR. AECO 103 or COI. (1,2)

AECO 190. Special Problems in Agricultural Economics (3) By arrangement. (1,2)

AECO 199. Undergraduate Seminar in Agricultural Economics (1) Review and discussion of current development in economics and agricultural economic fields. One hour a week (may be taken twice for a maximum of 2 units). (1,2)

AECO 200. Undergraduate Thesis in Agricultural Economics (6) By arrangement. (1,2,S)

AECO 200 a. Major Farm Practice (6) By arrangement. (1,2,S)

COUNTRY REVIEW

PHILIPPINES

**FARM MANAGEMENT IN EXTENSION
(OCTOBER 2000)**

By:

**ALFREDO B. DE TORRES, Ph.D.
Farm Management Consultant**

**TRAINING MATERIAL
(DAR-TSARRD-FSD)**

DEPARTMENT OF AGRARIAN REFORM

**FARMING SYSTEMS APPROACH IN ARC DEVELOPMENT
(12-14 Days-Training Course)**

COURSE CONTENT

- Unit 1. The Concept and Approach to FSD**
- Unit 2. Farming Systems Zoning**
- Unit 3. Exploratory Diagnosis and Analysis**
- Unit 4. Verification**
- Unit 5. Analysis of Constraints and Potentials**
- Unit 6. Evaluation of Potential Improvements**

FIELD WORK/EXERCISE

- 1. Collection of Secondary Information**
- 2. Group Interview-ARC officials**
- 3. Group Interview-Farmer Leaders**
- 4. Formal Survey of Individual ARB Household**
- 5. Farm Household Model**

**TRAINING MATERIAL
(DA-ATI)**

**AGRICULTURE TRAINING INSTITUTE
DEPARTMENT OF AGRICULTURE**

AGRIBUSINESS MANAGEMENT

COURSE CONTENT

- UNIT 1. Farmer or Entrepreneur**
- UNIT 2. Agribusiness Chain**
- UNIT 3. Strategy Formulation**
- UNIT 4. Strategy Implementation**
- UNIT 5. Farming Systems in AgriBusiness: Toward Sustainable
Agriculture**

**TRAINING MATERIAL
(AG ECON, UPLB)**

**DEPARTMENT OF AGRICULTURAL ECONOMICS
COLLEGE OF ECONOMICS AND MANAGEMENT-UPLB**

**FARM MANAGEMENT
(ONE SEMESTER)**

COURSE CONTENT

PART I. Lecture

- 1. Going to Farm**
- 2. Management and Decision-making in Farming**
- 3. What is a farm?**
- 4. Starting to Farm**
- 5. Farm Planning and Budgeting**
- 6. Economics Principles in Farm Management**
- 7. Farm Records and Accounts**
- 8. Costs in Farming**
- 9. Returns in Farming**
- 10. Efficiency Factors**
 - Size of Business**
 - Efficiency in the Use of Labor, Workstock, Tools and Equipment**
 - Production Rates**

- 11. Farm Labor Management and Work Simplification**
- 12. Analytical Approaches in Farm Planning**
- 13. Marketing and Farm Prices**
 - **Marketing**
 - **Farm Prices**
- 14. Farm Finance and Credit**
- 15. Agriculture Tenure in Philippines**
- 16. Experiences in Farm Development**

Part II. Laboratory Exercises

- 1. Farm Management Description of a Farm**
- 2. Farm Statistics**
- 3. Taking an Inventory**
- 4. Farm Accounting**
- 5. Farm Business Survey**
- 6. Summarizing a farm Business**
- 7. Size of Business and Production Rate**
- 8. Comparison of Farms with a Standard**
- 9. Prices and Index Numbers**

**TRAINING MATERIAL
(FSSRI-UPLB)**

**FARMING SYSTEMS AND SOIL RESOURCES
INSTITUTE
COLLEGE OF AGRICULTURE-UPLB**

**TRAINING COURSE ON ADAPTIVE RESEARCH
AND AGRIBUSINESS IN FSD
(8-WEEK COURSE)**

COURSE CONTENT

- UNIT 1. Introduction to FSD**
- UNIT 2. Skills and Methods of Adaptive Research**
- **Site Selection**
 - **PRA Process**
 - **Design, Implementation and Analysis of Adaptive Research**
 - **Tools and Techniques in Research-Extension Interphase**
 - **Framework for Evaluation and Impact Assessment**
- UNIT 3. Agribusiness in FSD**
- **Agribusiness and Sustainable Development**
 - **Technology Alternatives in Farming Systems and Potential Agribased Enterprises**
 - **Agribusiness Enterprise Development Plan Preparation and Appraisal**
 - **Preparation of Local Agribusiness Development Program**

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- 3. Scaling-up of Participatory Management Oriented Approach/Model**
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- 1. Materials Development, Training and Technical Support**
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 - 2.2.a Organization and Management**
 - 2.2.b Training and Materials Development**
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EXECUTIVE SUMMARY

The Government of the Philippines recognized the importance and role of technical and support services for sustainable agriculture including farming systems development and management. Policy initiatives are directed primarily to accelerate growth rates in the agriculture sector (e.g. crops and livestock; agriculture exports, etc.) and continuously upgrade the incomes and welfare of farm families through intensification and diversification strategies. Hence, as a consequence of the recent devolution of the extension as well as training activities from the national agencies to the local government units, the improvements in “Extension and Training Services Development” becomes one of the major priority concerns. The “Farm Management and Advisory Services” concerning production and marketing could be considered and being one of the major concerns of this report, for the research, training and extension agenda for the improvement of modern agricultural services development.

The report sets the institutional setting of the extension and training system in the Philippines and their implications to the dominant small farming systems development in the country. The technical and support services of various agencies/institutions have been reviewed with selected illustrative experiences. It was observed that a “two-polar approach/model” i.e. the Transfer of Technology (TOT) service oriented model of the past and the recent fashionable trend of farmers participatory management-oriented approach (PA) could be gleaned as the dominant “top-down” and “bottom-up” extension delivery services, respectively. Apparently, the thrust of extension services would be to concentrate activities at the regional, provincial and municipal/community-based organizations to promote demand-driven farmers participation.

The devolved extension services have yet to be reorganized and the quality, to be upgraded at the LGU-levels. A key element to the extension service would be the extensive use of participatory methodologies to ensure a strongly demand-driven system with strong research-extension-farmer linkages.

The training services development is aimed at strengthening the services of the LGU-based or community-based training centers to increase their capability to provide need-based training services to: (1) LGUs and related organizations extension staff; (2) farmers associations and their members; and (3) other people involved in agriculture and rural development programs. These services will also support the strengthening of mechanisms for a more self-sustaining training including upgrading the formal and informal education and training programs, as well as curriculum and materials development in particular for farm management and advisory services.

Stakeholders support and suggested options for improvement of agricultural development services would be done through needs assessments. In anticipation of the results of need assessments, the following should be considered for immediate actions: (1) extension staff and farmers training; (2) improved extension programming and management; (3) effective funding system for location specific agricultural development;

(4) farm trials and demonstrations; and (5) investments in essential machineries and equipment. The proposed priorities for technical assistance and materials development and training needs have been provided in the report.

Four general entry points/programs have been given for technical review and considerations, namely: (1) Incorporating/Mainstreaming Farm Management and Farming System Approaches in Agricultural Development Programs; (2) Strengthening Decentralized Extension Systems; (3) Identification and Scaling-Up of Replicable Participatory-Management Oriented Approach/Model; and (4) Pilot Programs on Farm Innovations and Farm Business Development via Alternative Mechanisms (e.g. LGU, Cooperatives, Private Corporations/Entities).

LISTS OF ABBREVIATIONS

ACPC	Agricultural Credit Policy Council
AEW	Agricultural Extension Worker
AIIS	Agribusiness Investment Information Service
ARB	Agrarian Reform Beneficiaries
ARC	Agrarian Reform Communities
AT	Agriculture Technician
ATI	Agricultural Training Institute
BAI	Bureau of Animal Industry
BAEx	Bureau of Agricultural Extension
BAS	Bureau of Agricultural Statistics
BFAR	Bureau of Fisheries and Aquatic Resources
BPI	Bureau of Plant Industry
BPRFI	Best Practice and Result Farm Innovation
BSWM	Bureau of Soils and Water Management
CA	College of Agriculture
CBO	Community Based Organization
CDA	Cooperative Development Authority
CEM	College of Economics and Management
CSC	Computer Service Center
DA	Department of Agriculture
DAERS	Department of Agriculture Education and Rural Studies
DAR	Department of Agrarian Reform
DENR	Department of Environment and Natural Resources
DOST	Department of Science and Technology
EIC	Education Information Communication
FAO-TSARRD	Food Agriculture Organization-Technical Support to Agrarian Reform & Rural Development
FFS	Farms Field School
FRK	Farm Record Keeping
FSD	Farming Systems Development
FSRE	Farming Systems Research and Extension
FSR&D	Farming Systems Rural and Development
FSRRI	Farming System and Soil Research Institute
FSTP	Farmer Scientist Training Program
FTC	Farmer/Fisherfolk Training Program
GOA	Government Organizations/ Agencies
GON	Government of Netherlands
GOP	Government of the Philippines
GPEP	Grains Production Enhancement Program
IGAs	Income Generating Activities
IPM	Integrated Pest Management
IRRI	International Rice Research Institute
ITCPH	International Training Center on Pig Husbandry

JICA	Japan International Cooperation Agency
KCCDP	Key Commercial Crops Development Program
KPA	Key Production Areas
LDC	Livestock Development Council
LGA	Local Government Agencies
LGC	Local Government Code
LGU	Local Government Unit
LLO	Legislative Liaison Officer
MAS	Marketing Assistance Service
MTLDP	Medium Term Livestock Development Program
NABCOR	National Agribusiness Corporation
NCPC	National Crop Protection Center
NAFC	National Agriculture and Fishery Council
NAPHIRE	National Post Harvest Institute for Research and Extension
NFA	National Food Authority
NGO	Non-Government Organizations
NIA	National Irrigation Administration
NMIC	National Meat Inspection Commission
NNC	National Nutrition Council
NSF	National Stud Farm
NTA	National Tobacco Administration
PA	Participatory Approach
PAD-SCO	Project Assistance Division-Special Concerns Offices
PCA	Philippine Coconut Authority
PCARRD	Philippine Council for Agricultural and Resources Research and Development
PDC	Philippine Dairy Corporation
PFDA	Philippine Fisheries Development Authority
PHILCOTTON	Philippine Cotton Corporation
PHILRICE	Philippine Rice Research Institute
PMS	Planning and Monitoring Service
SEAFDEC	SouthEast Asian Fisheries Development Center
PRA	Participatory Rapid Appraisal
QRCGB	Quedan and Rural Credit Guarantee Corporation
RBO	Rural Based Organization
RTC	Regional Training Center
SIDCI	Soro-Soro Integrated Development Cooperatives Inc.
SUCs	State Universities and Colleges
SARD	Sustainable Agriculture Rural Development
SACOBIA	Sacobia Development Authority
SFDP	Small Farm Development Program
SRA	Sugar Regulatory Administration
TOT	Transfer of Technology
UPLB	University of the Philippines at Los Baños

LIST OF ANNEXURES

ANNEX 1. COURSES CONTENT (TRAINING MATERIALS)

- DAR-Farming Systems Approach in ARC Development
- ATI/DA-Agribusiness Management
- Dept. of Ag. Econ-CEM-UPLB-Farm Management
- FSSRI-CA-UPLB-Adaptive Research and Agribusiness in FSD
- BS Ag. Economics

ANNEX 2. ORGANIZATION AND MANAGEMENT OF RESEARCH AND EXTENSION AND TRAINING ACTIVITIES

- DA-Provisional Management Structure
- Status of Personnel Transfer as of Dec.31, 1993.

