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A Report on the Regional Workshop Women's Role in Upland Farming Development (WIDUP)

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A regional workshop on Women's Role in Upland Farming was conducted in Chiang Mai, Thailand from 31 January to 3 February 1995. It was jointly organized by the Office of Agricultural Economics of the Ministry of Agriculture and Cooperatives of the Royal Government of Thailand and the ESCAP CGPRT Centre, Bogor, Indonesia. The objective of the workshop was to identify opportunities for enhancing the welfare of rural women and households by integrating women in the development of upland farming, particularly in CGPRT crop based agriculture. Special attention was to be given to the role of women in marketing and processing of CGPRT crops. In particular the workshop was to discuss three case studies conducted by national teams in Indonesia, Sri Lanka and the Philippines.

The workshop was attended by some forty-five participants from national research agencies and development ministries from Bangladesh, P.R. China, India, Indonesia, Republic of Korea, Lao PDR, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka and Thailand; four resource persons, respectively from the International Rice Research Institute (IRRI), Chiang Mai University, Department of Agriculture Extension and Food and Agriculture Organization (FAO), and three staff members of the ESCAP Secretariat.

During the workshop the following papers were presented: case studies from Indonesia, Sri Lanka and the Philippines; country papers from

Bangladesh, P.R. China, India, Republic of Korea, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Philippines and Thailand; a synthesis of gender issues in CGPRT based upland agriculture by the consultant; and four resource papers.

Based on the findings of the above papers, the workshop deliberated the issues, constraints and future prospects of the role of women in upland agriculture. Highlights of these deliberations follow.

Although the share of agriculture in the entire economy of most Asian countries has been declining, it remains the most important single sector. Upland agriculture covers 65% of the entire arable land under food crops in Asia. Of particular interest is that upland agriculture is providing an important source of income to farmers. CGPRT crop based agriculture is dominant in the uplands, and a significant volume of produce is marketed and processed. With general economic growth, commercialization and diversification is more prominent in upland agriculture. In some upland areas, however, due to their disadvantaged

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physical and economic conditions, resource depletion, rural poverty and sustainability of agriculture become serious problems.

Little research has so far been devoted to upland agriculture and its communities, as compared to the wealth of inquiries available on rice-based farming systems. The present workshop focused on one of the crucial aspects of the utilization of human resources for development in the upland zones: the role of women. It is widely recognized that rural women play a very substantial and important role in the development of upland agriculture.

Rural women have a wide range of responsibilities. In addition to their reproductive roles and household chores, they are full partners in the economic activities of the farm. Rural women provide roughly half, and sometimes more, of the labour input. They also take an important share in the decision making process for economic activities on the farm, and in the majority of the rural households they are responsible for the household budget. Furthermore in some of the study areas a considerable number of women undertake additional types of off-farm, and non-farm income earning activities. In addition an increasing percentage of farm households is headed by women farmers, either permanently or temporarily, due particularly to increasing migration of men to urban areas. Daily workloads of rural women have been reported to be heavy and include economic and household chores.

Nearly all papers reported that rural women have difficulties with access to government agricultural extension services. It was also reported that rural women have no or little access to formal credit. However, they often obtain credit and information on new technologies from informal sources. It can be concluded that rural women in upland agriculture work very hard, are very resourceful and have an important role in development.

In view of this background, the findings of the workshop include the following issues, which are regarded as most relevant and pertinent for enhancing the role of women in upland agriculture. The workshop recommended that the CGPRT Centre bring these issues to the attention of governments, international agencies and non-governmental organizations:

- The need for development of appropriate gender specific tools, equipment and machinery for upland crop production, and processing of agricultural produce: The objective of gender specific tools is to reduce drudgery and develop labour saving equipment to increase labour productivity which may be used for other gainful purposes and increase leisure time for improving the quality of life.
- The effect of labour migration from upland agricultural areas to urban areas on women's tasks and role in upland agriculture: In view of the considerable effect of increasing migration to urban areas on the tasks of rural women, it is recommended that this issue be studied in more detail. It is necessary to find ways and means to promote alternative employment opportunities in upland agricultural zones to overcome negative effects of this migration.
- Access for rural women to public rural services and its effect on economic development: It is recommended that public credit and agricultural extension services be provided to rural women to increase farm productivity.

Regarding the Gender Assessment Study approach, the workshop noted that this is a useful tool for evaluating projects. The workshop therefore recommended that the CGPRT Centre, and national and international institutions make use of it, especially for evaluation of projects.

Regarding information on rural women in upland agriculture, the workshop recognized the need to generate or strengthen databases in view of the general requirements for information on gender specific issues. The workshop recommended the compilation of databases on labour migration. It was noted however that many databases on labour migration may exist in a variety of sources which are not readily available. The workshop recognized the need to generate databases on rural women with reference to upland agriculture.

Message from the Director

First of all, I would like to inform you about my arrival on the duty as Director of the CGPRT Centre in Bogor, Indonesia. I commenced duty on July 1, 1995, succeeding Seiji Shindo who left Bogor after his six years engagement in the Centre.

During this period, Mr. Shindo made a big contribution to the Centre by strengthening the capability and expanding the activities of the Centre. I would like to express, on behalf of the Centre, my sincere gratitude to Mr. Shindo for his enthusiastic efforts in the management of the Centre.

Also, I would like to extend my regards to Mr. Shiro Okabe, the first director of the Centre, for his tremendous achievements in his eight years service through the period of founding and establishing the Centre.

It is really my pleasure and honor to succeed these two respectable predecessors, and, at the same time, I feel a very heavy responsibility. In any case, I will do my best with your continuous cooperation and support.

In a recent official visit to ESCAP, I had a chance to talk with Dr. Adrianus Mooy, Executive Secretary of ESCAP. He stressed the importance of the tasks related to poverty alleviation and expressed his intention to focus on rural poverty. Since the CGPRT Centre has been working extensively on upland agriculture in Asia, where we often find poverty in various degrees, we must further recognize the scope of the problems, the significance of development activities and intensify our project implementation.

This year, many of the countries in Asia, Indonesia and Viet Nam for instance, are celebrating their 50th anniversary of the establishment of the current nation. In official statements, all of them, so far as I understand, have expressed their recognition of the importance of agriculture and its sustainable development in the future. It is without doubt our great pleasure to work for them to raise the fundamental level of their agriculture through our efforts.

HARUO INAGAKI

The workshop recommended that the Centre translate and formulate the above topics into feasible research projects, in consultation with the ESCAP Secretariat, national research and development agencies, FAO and international institutes and jointly or independently propose these for funding and implementation. In this context the workshop suggested that the Centre explore the possibility of joint formulation and proposing for funding with the concerned divisions and sections of ESCAP.

The Role of Women in Upland Agriculture: Gender Issues Raised by Case Studies in Indonesia, Sri Lanka and the Philippines*

Ria Gondowarsito, Charles van San ten and Taco Bottema

Introduction

Although the importance of agriculture in Asia is declining, it remains the most important single sector in most countries in Asia. Agriculture in the upland areas covers 65% of the entire arable land under food crops in Asia. Of particular interest is that upland agriculture can be characterized as diversified, economically responsive and culturally adaptable. The costs of cultivation are low.

* This paper is based on papers presented at the Regional Workshop on Women's Role in Upland Farming Development (WIDUP), held in Chiang Mai, Thailand, 31 January-3 February, 1995

CGPRT (coarse grains, pulses, roots and tubers)-based cropping in the uplands is dominant, and a significant volume of produce is dried, processed and sold.

The diversification of CGPRT-based agriculture involves a large variety of crops inducing home industry, sales, small- to large-scale processing and distribution activities by men and women farmers. CGPRT crops are often used as material for feed and food industries, involving a wide range of end-products such as oils, snacks, starchy foods and feeds. Upland agriculture also includes areas which are more remote, isolated and fragile, as well as hilly areas which adopt agro-forestry by effectively integrating forestry, and crop and animal production.

Little research has so far been devoted to upland agricultural areas and communities, as compared to the wealth of inquiries on lowland rice farming regions. This is probably due to the primary concern of achieving self-sufficiency in rice production. In recent years studies have shown that upland agriculture has started to become commercialized, which in some cases, may become more dynamic than lowland agriculture. With this background, the present study focuses on one of the crucial aspects of the utilization of human resources for development in the upland zones: the role of women farmers as cultivators and labourers.

Objectives

Case studies on upland locations in Sri Lanka, the Philippines and Indonesia were carried out to represent upland farming regions of south and southeast Asia. This study is in line with the Action Plan of The Jakarta Declaration for the Advancement of Women in Asia and the Pacific which stated the following objectives:

- * To achieve equal status of women as participants, decision-makers and beneficiaries in the political, economic, social and cultural spheres of life.
- * To promote and ensure the human rights of women at all stages of the life-cycle.
- * To create or reorient political, economic and social processes and institutions to enable

women to participate fully and actively in decision-making in the family, and community and at the national, regional and international levels.

- * To empower women and men to work together as equal partners and to inspire a new generation of women and men to work together for equality, sustainable development and peace.

Countries in Asia are attempting to increase productivity of CGPRT upland commodities. The CGPRT upland commodities are complementary to, and occasionally substitute for, rice as a food, in addition to their importance as material for industry. Such an increase would improve the welfare of upland farmers. Thus, there is a need to identify the roles of, and the access of, both men and women farmers to material and non-material resources, as well as constraints and potentials by gender. In this way, the distribution of credit for production, and the dissemination of extension and training programs in the uplands can be more readily adjusted to the production needs of men and women farmers. Extensive studies have shown that a gender needs assessment is crucial in determining the improved means of operational activities. The case studies have looked at these issues for CGPRT farming.

In response to the importance of increasing the production of CGPRT crop-based upland agriculture, it becomes necessary to assess how resource use and access to facilities might differ amongst men and women farmers. It is known that the role of women is important in health and sanitation, and one would wish to verify a similar need to involve women farmers through adjusted interventions covering technological innovations, extension and credit.

Methodology

The case studies combine primary and secondary data. Several hundred upland farmers, traders, local authorities, and extension staff were interviewed under formal and informal settings. The samples included more and less commercialized areas. The discriminating variable, commercialization, was operationalized with the help of key informants and local officials.

Editorial

Women in Upland Agriculture

In recent years the attention of policy makers, officials and socio-economists has focused on what is perhaps best called thematic issues. While themes are useful to focus public concern and mobilize resources, the term may hide more than it clarifies. Commonly, thematic issues concern characteristics of specific groups of people. These characteristics indicate often disadvantaged positions of certain sociological categories, i.e. women, children, aged people; also they may have a narrower meaning, for example labour and health conditions of these people.

In Asia attention for these issues is widespread and seems to be connected to the expectation, or least the wish, of governments and donor organizations to improve life and solve problems. The tendency to identify direct solutions at the household level has become stronger in recent years, accompanied by strengthened recognition for ethnic diversity and the importance of the local community.

This issue of Palawija News focuses on women in upland areas. The results of the explorative studies show a very complex picture. The position of women in rural areas is

characterized by a degree of empowerment, but the role of women as a change agent in agriculture is less clear. Drudgery, on the other hand, very much characterizes the daily work of women. It is clear that, although one can generalize to some extent, one can not really go very far. Empowerment and participation in trade do not necessarily exclude drudgery: a weak position in formal terms does not exclude substantial influence of women on generating and expending income.

The lack of conclusion and the difficulties in designing clear-cut strategies for improvement of the position of women might actually change if one analyzed the activities of women on an individual basis with an entrepreneurial perspective. It is well-known that entrepreneurial initiative is a key to successful farming and also to successful agricultural extension. The tentative synthesis of the research results shows clearly that the same may apply to women. The wider question concerns the relation between economic growth and improvement of the position of women. There is a growing literature on this subject, which sometimes reflects hot debate. The studies show both opportunities and constraints for women in upland areas. It seems most likely that local services would in the long run provide the best avenues for improvement.

However, there was hardly any difference among the actual sub-samples selected in all the study areas. The marketed proportion, the indicator of the rate of commercialization, was roughly similar in these areas. To place the findings of the study in an appropriate frame, the term "women farmers" refers to all rural women who concurrently manage and work on their farms as paid and/or unpaid family labourers. This category includes farmers' wives, daughters, and mothers as well as on single female household heads. With regard to women farmers as wives, one needs to take into account that there are seasonal role shifts when husbands are home; however there are same full-time women farmers, usually widows, deserted women and divorcees who are household heads.

Results

Agriculture in the three study areas

Agriculture in the three study areas is basically rainfed with a dominance of CGPRT crops. In most areas there are up to two crops per season. In the Indonesian case study, some upland farming areas can grow only one crop a year due to low precipitation and short duration of rainfall. Mixed cropping and intercropping are common in which, for example, cassava is planted in the borders with maize in between or a mixture of grain legumes. The basic cropping patterns by study area are shown in Table 1.

Table 1 Crop calendars in the study areas.

Study Area	First Season	Second Season
Indonesia		
a. East Java	Oct./Nov.-Feb. Maize Maize & Cassava Maize Upland rice	Feb./Mar.-May/June Maize Cassava & Soybean Soybean or Groundnut, Or Mungbean, or Cowpea or Pigeonpea Maize
b. South Sulawesi	wet season December-March Maize/Pigeonpea Maize/Pigeonpea/ Cassava Pigeonpea Maize, Groundnut	dry season (mixed crop with first season) December-August Pigeonpea-Fallow Pigeonpea/Cassava- Fallow Pigeonpea-Fallow Fallow
Sri Lanka	Yala March-June Sesame (occasionally) Cowpea	Maha September-February Maize, Chilli, Blackgram, Finger Millet Cowpea, Green gram
The Philippines	June-August Maize Maize Rice Cassava Rice	November-February Maize Fallow Fallow Cassava Maize

The studies confirm that upland agriculture in Sri Lanka, Indonesia and the Philippines has strong similarities, i.e. dependence on rainfall, high diversity of crops and small farm size (Table 2), and substantial seasonal out-migration of men and youths. Of particular importance for possible generalization of the findings of the studies is that similar crops were grown, processed and sold in all three locations. The following paragraphs present the detailed findings of the case studies and place these in a wider context of gender issues and agricultural development.

Table 1 Crop calendars in the study areas.

Study Area	Farm Size (ha)
Indonesia: East Java	0.4 - 0.8
South Sulawesi	0.5 - 1.5
The Philippines	1.0 - 3.0
Sri Lanka	0.7 - 0.9 (lowland +homestead + upland)

The case studies show that upland communities are highly dependent on agriculture. Over 90% of community members engage in farm activities. Yet, there is substantial division of labour because of the many types of crops cultivated and processed. The study areas are situated approximately one hour away from processing and market centers. Rural infrastructure can thus be considered as reasonable. Most of the researched communities have some public services, such as health, schooling, electricity, extension and credit and sale points for agricultural inputs. To some extent (in Sulawesi, Indonesia, and Anadapura, Sri Lanka), the sample sites were stratified in more and less dynamic upland areas.

Upland agriculture, like any economic activity, relies on both genders. The gender division of labour and participation in upland agriculture is not pronounced. Both female and male activities are diverse, however, in the Sri Lanka samples limited processing took place. The workload particularly in Indonesia in upland farming, involves processing of a wide range of end-products in which particularly female farmers are intensively engaged.

Participation of men and women farmers in upland agriculture

In CGPRT crop-based upland farming, women farmers are intensively involved in crop and livestock production, on-farm processing, as well as cleaning, drying, grinding, shelling and bulking of these products. Most of the activities require extensive labour. At this stage, little or no improved tools, equipment and machinery exist to ease the drudgery of women carrying out processing tasks and increase their income. Women farmers take an active part in marketing the CGPRT harvest to satisfy household consumption and needs. The case studies present the main labour division by gender in CGPRT crop-based upland agriculture as shown in Table 3.

Women farmers also organize neighbourhood and community voluntary activities, besides establishing and maintaining relationships with kinsmen, neighbours, and other village residents.

Table 3 The involvement of men, women and male or female children in on-farm, off-farm and non-farm economic activities, household and social chores (%).

Activity	Men (15-64yr)	Jointly	Women (15-64 yr)	Boys (8-14 yr)	Girls (8-14 yr)
On-Farm/Off-Farm Employment:					
Land preparation with animals	100		-	-	-
Planting — with draught animal	100		-	-	-
planting seeds	5(40)*		85(60)*	5	5
— carrying inputs	80		20	-	-
Weeding	20(30)*		80(50)*	-(10)*	-(10)*
Unearthing	80		20	-	-
Fertilizer application	80		20	-	-
Pest and disease control	90		10(40)**	-	-
Harvesting — picking the crops	10		80	5	5
— carrying produce from field	90		10	-	-
Drying	20		75	5	-
Threshing and winnowing	10		90	-	-
Shelling	-		100(80)*	-(10)*	-(10)*
Processing	10		90	-	-
Storing produce	10		90	-	-
Sales of agricultural produce	10		90	-	-
Buying agricultural produce (village level collectors)	10		90	-	-
Home gardens	5		85	5	5
Large livestock raising	50		10	40	-
Small livestock raising	20		70	10	-
Non-Farm Employment:					
Mat weaving	5(0)**		90	-	5
Petty trading	10(50)**		90	-	-
Road/building construction	80		20	-	-
Craftsmen	100		-	-	-
Service sector jointly	-	100	-	-	-
Household chores and other social activities:					
Food preparation	-		90	-	10
Child care	5		85	5	5
Household budget control	-	20-40	60-80	-	-
Social activities:	-	100	-	-	-
Marriage, funeral, circumcision	-		90	-	10
Hospitality arrangements	100		90	-	10
Extension service, attending meetings on new technologies	100		-	-	-

This table presents a rough generalised enumeration of the division of labour between gender and age groups in the three study areas. Differences with the situation in Indonesia specifically apply to the Philippines (n)* Sri Lanka (n)** as indicated.

Size of landholdings vs off-farm and non-farm income

In small landholdings, men and women farmers seek additional income from off-farm and non-farm activities, including collecting of farm produce. In Indonesia and the Philippines, farm people with larger landholdings, tend to engage in non-farm activities which require more capital. Women farmers with smaller land-holdings tend to undertake farm activities, while men engage in either off-farm or non-farm employment. The

Indonesian case study reveals that when land holdings are above one hectare, men farmers tend to hire labourers, so that the burden of women farmers is reduced, while on landholdings below one hectare, women farmers' involvement appears to be more intensive. This is also due to the higher incidence of commercial crops grown on larger holdings, such as fruit trees, other perennial crops and sugarcane which are less labour intensive.

Household and seasonal cycles

The case studies mention that rural upland women do a wide range of farm work. Daily agendas, however, are much affected by the current household cycle: whether pregnant, lactating and with infants or older children, as well as by the weather induced seasonal agricultural cycle. This long-term household cycle over the years involves responsibilities and tends to tie women to the homestead. Rural women attend to field activities even during pregnancy and until giving birth. The weaning period and nurturing infants demand considerable energy and time. Thus, we can observe that over the life cycle of rural women, her inputs on farm and on economic activities depend on her family situation, her age, and the number and age of children. Rural mothers involve their youngsters in household chores and economic activities from around the age of seven. When the children are older, parents derive further income from their farm and off-farm labour.

In addition to the multi-year household cycle, the seasonal cycle is important. Labour inputs of women farmers are affected by the cropping season, the kinds of crop grown and livestock raised, land size, income level and the permanent or temporary absence of the husband. The burden of women farmers becomes most intense during the planting, weeding, harvesting and post harvest processing periods when much farm work has to be done, in addition to the daily household chores.

Daily labour profile in upland farm households

A typical daily labour profile of women farmers is shown in Table 4. In Indonesia and in the Philippines it is estimated that household chores take four to five hours of women farmers' daily time, and in Sri Lanka up to eight hours a day. The workload of women farmers is prone to fluctuations throughout the year.

Table 4 Typical daily labour profile of rural women in the study areas.

Period	Activity
4-7 am	Household chores: boiling water, washing clothes, child care, bathing, preparing food and sending this to the field for the workers. Religious duties.
7-12 am	Farm work such as planting, weeding, harvesting, or post-harvest activities, depending on the crop season. This work can be done on own farm or neighbours' farms as exchange labour; or Selling produce in the market and purchasing household requirements, farm inputs or other items; or Cottage industry activities such as weaving mats, processing CGPRT crops, such as making soybean curd and fermented soybean cake, cassava chips, and brown palm sugar.
12-2 pm	Leisure, preparing and having a meal, child care, chatting with family members and neighbours. Religious duties (in Moslem communities).
2-5 pm	Continue activity from the morning, particularly farm work or cottage industry activities. In addition, in case of owning large ruminants, collecting and cutting feed; or collecting water for the household in some areas.
5-9pm	Social activities, child chores, preparing and having a meal. Religious and social obligations.
9 pm-4 am	Night rest.

For biological reasons and convenience, women farmers' enterprises are often home-based. They commonly grow food crops, raise small livestock and undertake agro-processing. Often, women favour this home-based arrangement since it allows them to concurrently attend to other tasks such as looking after the children. A reliable indicator of the bulk of women's agricultural responsibilities is the intensity and frequency of men engaged in non-farm employment in nearby towns

Wage differences

In the study areas the wage differences between men and women farmers tend to be largely determined by the nature and the duration of agricultural tasks. In Indonesia, there was no remuneration difference between men and women farmers in South Sulawesi. However, the wages for women farmers in East Java were lower than those for men farmers, largely due to the kinds of activities and duration of work performed within agriculture. In Sri Lanka wage rates of women were lower compared to men's for similar work in all the activities. On average women were paid 65% to 75% of rates paid to men.

Agricultural activities of men and women

In all three study areas, men farmers undertake the more strenuous activities such as plowing, harrowing and leveling with draught animals and carrying heavy loads. On the other hand, women farmers tend to be involved in arduous and time-consuming tasks such as planting, weeding, harvesting and processing. As such, the establishment of fees is negotiated at the local level, influenced by the labour supply situation and determined by the number of working hours per day per activity and the equipment being used.

In Sri Lanka at the village level, female participants are visible in nearly all post-harvest activities such as cleaning, bulking, transporting and overall management. However, at the medium-scale processors level, women farmers are automatically displaced by the entrance of machinery in almost all activities. When manual labour in processing is involved, female roles are more evident.

Migration

There are signs that the proportion of rural women who are concurrently farm managers and labourers, fluctuates somewhat through the seasons, due to the considerable temporary (and permanent) migration of husbands and other kinsmen from upland areas. The case studies confirm that women are widely engaged in farm activities, and quantify the labour input of women farmers in CGPRT crop-based upland agriculture. This phenomenon is, among others, related to the seasonal, or even permanent out-migration of men and youths for non-farm and off-farm employment in other areas.

There is no conclusive evidence regarding the temporal pattern of seasonal migration. A common view holds that temporary migration hangs together with the agricultural calendar in rural areas. However, there are many more pull factors influencing migration. It would be useful to devote a longitudinal study to this issue, keeping in mind that upland agriculture can, through crop substitution, adjust its cropping calendar relatively easily.

Feminization in upland agriculture

The study samples indicate that 10 to 30% of farm households are run by women. Women farmers perform agricultural tasks in addition to the daily household domestic and child-care chores, attending to family health, sanitation and nutrition. There is a high degree of mutual substitutability of male and female labour in upland agriculture, as CGPRT crops are relatively easy to grow and handle. A few activities and crops excepted (land preparation and digging up roots), no strenuous labour is required, which has to be exclusively performed by men farmers. Thus, upland agriculture is to a large extent gender adaptable or flexible.

Upland agriculture is to a considerable extent feminized. In cases of absence of husbands through temporary migration, divorce, disablement and death, rural women become de facto and de jure household heads and farm managers, on a temporary or longer term, and even permanent basis. In the longer term and permanent absence and disablement of husbands or other kinsmen, the women farmers tackle all the agricultural tasks. The studies do not reveal whether the role of women is subject to a medium trend or only seasonal cycles. Time series data on migration and women's involvement in farming are required since no panel data are available on these issues.

Technologies

The use of labour saving techniques has two sides. The Indonesian study states when the method of threshing the grain is done 100% manually, the share of female labour is 93%. Where threshers are introduced, the share is reduced to 50%. As expected, the general labour saving strategies also extend to upland agriculture. One should not jump to the conclusion that mechanization necessarily deprives women of

opportunities. At any rate, upland agriculture offers a diverse set of opportunities, and mechanization would free up time for other purposes. However, mechanization is not feasible on landholdings below 0.5 hectare and where the slopes are steep. Since the daily workload of women farmers is very high, mechanization using intermediate technology may be one of the solutions. The question is the availability of tools at affordable cost.

The general hypothesis of the inquiries - a relation between the diversity of upland agriculture and occupational multiplicity is confirmed by the studies. It remains to be seen whether the introduction of new technology to increase productivity will actually improve the quality of life for women farmers, in view of their busy daily and seasonal calendar. There may be opportunities to generate labour and time-saving technology which would lighten the heavy work of women farmers.

Dual roles of women

The country studies indicate that all women farmers, except unmarried women and childless widows, also perform as wife, mother and home makers. Women farmers have to combine productive (income-generating) and reproductive (child bearing and rearing) roles for everyday survival in addition to their farm work. Obviously the daily calendar of women farmers is full.

These double roles of, and accompanying expectations from, women farmers in most upland village communities favour the development of individual attributes of flexibility, sensitivity, resourcefulness and initiative. In spite of low to no formal education, rural women tend to be effective communicators with adaptive skills, alert towards profitable opportunities. These attitudes are directly related to their involvement in handling the finances of the family. The findings from the country reports support these observations to a large extent. There is, however, little recognition for the important role of women.

Access to public rural services

All three studies indicate that female farmers have been bypassed in terms of access to extension and institutional credit for agricultural production. In most cases, women farmers' access to public services has been limited to health, sanitation and nutrition. Despite women

farmers' decision-making participation in nearly all aspects of agricultural production, including CGPRT crops, home gardening and livestock raising, the current system does not cater for female farmers. They have less access to institutional/public credit facilities, extension programs, training, education and other input services, while are mostly enjoyed by men.

Rural extension

Asian countries have in common that the current extension systems still target men as formal household heads, who thus become the sole training recipients. The Philippine case study reveals that when the barangay meetings are called, it is usually the husbands who are invited to attend, while the wife takes care of the children at home. Many women have not yet met the agricultural extension workers. The study on Indonesia indicates that, despite the fact that the farmer to farmer extension concept has been widely adopted in agriculture, upland women farmers are still neglected. Farmers' groups are still male-dominated. Women's access to information is through the Family Welfare Program (PKK), which mostly deal with household chores, child care and planting of medicinal plants in the home yard. It must be stressed that extension for women farmers has been chiefly devoted to health, child care, family planning and home economics, as manifested in Indonesia through the integrated village-level health service of Posyandu, as part of the PKK. In Sri Lanka, after five years of absence, the agricultural extension services were resumed in 1994 and currently face a transitional stage. Although the agricultural extension service in principle addresses household units, there are, however, still reported difficulties for women farmers to attend because of inadequate timing of extension meetings, and unfavourable location of meeting such as distant sites from homes and town centers, while transport facilities are limited.

Targeting extension services at household heads instead of household units, and/or all farmers irrespective of gender, clearly impairs rural women's access to these facilities. Experience indicates that rural women are seldom offered the chance to express their needs to local authorities. In all the study areas, technical information, opportunities to obtain credit and

grants for production facilities are usually given to men farmers as household heads, rather than to women farmers. Development programs for upland women farmers and their sisters in other rural areas, are primarily focused upon family welfare of health, sanitation, nutrition, home economics and social services rather than on women in an economically productive role. In remote areas of Sri Lanka, the Philippines, Indonesia and other Asian countries with poor infrastructures, rural women never had any extension services. The spread of material and non-material inputs for a self-propelling growth in agricultural production in the uplands is crucially affected by omitting a potential group of productive human resources on account of gender.

Gender segregation

The difficulties in reaching women farmers are related to the fact that in most village communities, there is a customary gender segregation during social events such as birth, weddings, funerals and other community events where both genders normally attend, and yet are separated from each other, except amongst children and infants.

Public and private decision-making

In Indonesia, women's opinions are voiced through their husbands, such as, in the Tudang Sipulung meeting, where the villagers and the extension personnel mutually decide on the planting time, the cropping pattern, the varieties to be planted and the rate of fertilizer application. Under similar extension systems in the other countries, feed-back mechanisms for both genders are also lacking. This illustrates the top-down approach of contemporary agricultural extension services.

Men farmers decide on the main crop to be grown in the fields. However, most women farmers determine the kinds of crops to be grown in the highlands and home gardens, while joint decisions are made on animal raising and marketing the agricultural and livestock produce. In most cases, men farmers decide on the choice of crop variety to be planted and on the use of fertilizers and pesticides, while women farmers decide on the selection of seeds. Men appear to be more confident in certain matters than their

wives, which to some extent, reflects the outcome of attending agricultural extension sessions.

Control of production and income

The position of women is far more important than one would infer from the lack of recognition. Women in the case studies have control over the products or income from their sale. This is related to the direct benefit they acquire from their efforts. The Sulawesi study indicates that women's share of the total family income ranges from 23 to 30%. In subsistence (less commercial) agriculture, the share of women's income is 42% and in commercial agriculture 30%. The East Java study indicates that women's share of total family income ranges from 37 to 60%; in the less commercial agricultural areas, women's share averages 51%, and 49% in more commercial areas. In Sri Lanka, around 60% of the women manage family income and contribute to around 30 to 40% of the total household income. In the Philippines around 80% keep their spouse's income and around 82% fully keep their own wage, while 8% jointly keep their own wage with the spouse. In Indonesia, women are responsible for marketing 70 to 100% of the farm product, especially for cash crops, such as soybean, groundnut, mungbean and onion. Decisions on the prices and sale of crops are equally shared by husbands and wives. In the absence of the husbands, wives decide on their own. In the East Java case study, 50% of the respondents are traders at the village level and 67% of the collectors at the sub-village level are women.

Private sources of information and credit

Women farmers are dominant in establishing and maintaining informal contacts with kinsmen, neighbours and other persons in the community, such as paramedics, midwives, traders and money lenders. These people are potential channels for women farmers to obtain credit and information under informal and flexible terms. Village visitors are also potential sources of the latest information for women farmers, who curiously listen from "behind the curtains", while attending to hospitality concerns. It is not astonishing that rural women are frequently acknowledged as the "silent power" through gossip.

In all three study areas, women farmers have

poor access to government credit facilities, mainly due to the lack of collateral. At times, even if daughters are allowed to inherit land, many women marry out of the village and are thus denied their share of land after marriage. However, private credit exists in all study areas, and seems to function according to the needs of women farmers. In all three areas, it is reported that local collectors, traders and middlemen (often women), money lenders, and neighbours provide credit in cash or kind under negotiable terms. Rural women are usually held reliable and high repayment rates have been reported.

Financial management

General opinion has it that the roles and effective participation of women in social and economic activities are largely determined by socio-economic and cultural factors such as religious practices, class or caste, cultural attitudes, income, and to some extent by the educational level. However, these studies show that rural women are in fact dominant in the financial management of the household, and in deciding on priorities of needs and the amounts to be saved and invested. Many household decisions, such as expenditures on children's education, clothing and other needs, tend to be decided jointly with their husbands. On the whole, women farmers have greater bargaining power and control of household incomes than men farmers, and they take a leading role in daily decision-makings on domestic tasks. In fact, women farmers hold the purse strings of their households.

Processing technologies

In the study areas, women farmers often expressed keen interest in technologies which could improve their current farming practices, and increase output and income. These upland women farmers, in particular of CGPRT-based agriculture, want to have access to equipment which minimizes their time and drudgery in the processing (e.g. shelling) and preparation of their commodities, whether for own consumption or for the market. New technologies for women will be of significance, if women have access to information and less complicated administrative procedures for credit, and the repayment capacity for these facilities.

Discussion

Women's specific potential

In self-reliance, grassroots and voluntary activities, women farmers have manifested a natural capacity for organizing small to large groups. They are alert, sensitive and responsive to the needs of their peer groups. In spite of limited to no formal education, and barely any access to public credit in particular, women farmers are not helpless. It has been noted that rural women irrespective of material assets often acquire information and credit through private sources, due to the strong social networking established amongst women. Rural women tend to be resourceful, capable of communicating their needs and managing existing resources. These attributes deserve recognition, in order to optimize the participation of upland women farmers through the development of low cost technologies or indigenous tools for food processing and storage.

Labour substitutability

The case studies and the country reports confirm earlier hypotheses on the role of women in upland agriculture. The substitutability of labour between men and women confirms this, whereas the observations on decision-making and managerial roles of women and men suggest important individual responsibilities. It has been said that men and women are non homogenous human resources, perfectly substitutable and experience the same economic opportunity costs and gains in agricultural change. This purposely paradoxical contrast between the non homogenous human resources and perfect substitutability is a function of the inherent diversity of such production environments within the context of upland agriculture. Yet, the studies also show that stratification is important in upland agriculture; in the gender context more work may be needed to shed light on possible relationships between the socio-economic status, migration and adjustment of family life to economic conditions and opportunity. A farm household is not always a single economic unit with common goals, resources and benefits. Frequently, family members may have different, even competing interests. As such, rural households are never static and they continually adjust to external changes.

Agricultural extension for women farmers

We have noted that women are widely active in the production of food and, at the same time, in ensuring food supply for the household. Possibly extension programs more focused on women farmers' information needs on crop production and post harvest activities could raise their income. Increased attention also needs to be given to improved home gardening, small livestock raising, CGPRT crop processing and preparation of end-products. These commonly concern women farmers as wives, mothers and daughters, as well as female household heads. Home garden related topics in upland areas may form relevant subjects for female farmers, as many of their activities tend to be home-based. Women farmers' interests may be focused on seasonal food sources, multiple use of crops, processing and storage characteristics. Savings through revolving credit in cash or in kind should be promoted as a buffer against crop failures and insurance against agricultural risks. It must be stressed that the current agricultural extension program for men farmers in most cases still needs to be improved.

The challenge for extension workers is how to effectively communicate with the actors in agriculture irrespective of gender. In order to reach all beneficiaries, in particular the frequently neglected women farmers, we recommend more innovative methods than the usual recruitment of women agricultural extension officers.

Gender Assessment Study (GAS)

In recent years, in order to more systematically include the role of women in socio-economic appraisals, the gender approach has been introduced as an instrument of "social diagnosis" for project planning, feasibility, implementation and evaluation. Using RRA and R/D methods, the Gender Assessment Study could be considered as a useful approach for pre-feasibility, feasibility studies, the planning and implementation of projects and agricultural extension programs. The present three case studies used methodologies for data collection similar to those advocated in the GAS approach, which is well adapted for interdisciplinary research. Policy makers, senior agricultural extension officers and public servants may recommend GAS for current and future extension as well as in development activities, in

lieu of the frequently isolated, over-abused WID (women-in-development) approach. It needs to be cautioned that especially in strongly paternalistic cultures, WID program activities tend to neglect the interests of men. In some cases, similar projects have even contributed to internal family instability, rendering greater psychological and mental burdens to women. The GAS approach is useful to assess the technological and information needs of men and women farmers, for instance to derive ideas on the development of gender specific tools and equipment. The GAS also complements efforts for community-based participation of both genders supporting sustainable development.

Statistical under-estimation of women's work

In many gender studies the under-estimation of the economic contribution of women to the national product is a core issue. Although activities such as cleaning, washing, cooking, looking after youngsters, etc. do not bring immediate returns in terms of cash or kind, these are considered crucial and necessary to enable other members to perform productive income-generating tasks for the household. Due to the non cash-earning nature of domestic tasks, they are not calculated in national economic terms.

Irrigated vs non-irrigated areas

Of more direct importance is the observation that in some cases the productivity of upland agriculture is low compared to irrigated lowlands due to bio-physical and socio-economic constraints. The high diversity of production and the concomitant difficulties in enumerating production and sales may be one of the practical reasons for the under reporting. Many studies carried out by the CGPRT Centre and its partners show that upland agriculture is more dynamic than assumed. A similar but still tentative conclusion can be derived regarding the active participation of women in upland agriculture. The wider question is thus whether lack of gender sensitivity or simply lack of statistical and other socio-economic information on upland agriculture in general has influenced current conceptions of both gender and upland agriculture.

Conclusions and directions for policy

The case studies confirm that upland agriculture provides avenues of investment which would benefit female participation in a wide range of activities. However, on the other hand, the working calendars of women farmers are very heavy, showing hardly any slack, which justifies the need to evaluate technologies which can reduce women's drudgery, increase labour productivity and their income. Therefore labour-saving gender adjustable technology is important in upland agriculture. Processing and also harvesting of CGPRT crops involve a wide range of adaptable technology and provide avenues for women's income-generating activities and participation.

Development policies implicitly assume that whatever is appropriate for men is also appropriate for women. This assumption has shaped contemporary agricultural extension, and thus created blind spots in adjustments of rural services. Leaving alone the common focus of public rural services on the higher rural strata, training programs which reach men or one part of the village community, cannot a priori be assumed to benefit the rest of the community. An in-depth judgement on these issues requires an assessment of the benefits of the public rural services. This issue lies beyond the scope of the study. It is not easy to address, because the flow of information is always complex and shows a large number of participants. As a possible and tentative thought, we would suggest that a broad and open look at the impact of rural services is necessary. Recent studies have shown that in agriculture major change agents and sources of information are private traders, in addition to public servants.

The country studies indicate that upland agriculture depends to a large extent on the participation of women farmers, and they thus suggest consideration of alternatives to improve the current public services of agricultural extension and credit systems for both men and women farmers. The significant processing and post-harvest activities of CGPRT crops also call for the improvement of low cost technologies for food processing and storage.

There are signs that the feminization of upland agriculture relates to migration in its many forms.

There is, however, no certainty that rural-urban migration is expanding across the board in the region. This may need further inquiry. In the case studies, out-migration is quantitatively reported from general sources to range from 5 to 20%. An important issue concerns the determinants of male and female temporary, medium and longer term migration. The case studies show that one cannot assume that push factors alone are the major determinants. The effects of shifting temporal patterns of outgoing and incoming migration can reach very deep in upland communities. Absence and disablement of partners may tie the staying party, usually women and children, to land and influence cash flow patterns and thus induce new patterns of temporal transactions, whereas incoming migration may thus influence the local land market. In a wider context, labour mobility may thus induce local immobility along lines of gender.

Married women farmers are not merely farmers' wives, even though their inputs – in terms of income and farm activities – are often considered supplementary or subsidiary to those of men farmers. Men are often presumed to be the official household heads and sole income earners. Current agricultural extension services and credit have primarily addressed household heads rather than household units or individual farmers of lower strata, irrespective of gender. In Sri Lanka since 1994, the agricultural extension service in principle addresses household units, although it still faces implementation difficulties in the timing of sessions and physical infrastructure in getting women to attend. The training needs in various aspects of farm production of most women farmers in rural communities have frequently been overlooked by governments and donor agencies. However, the case studies show that women usually manage to obtain information as well as access to credit from private sources. The studies could not generate quantitative information regarding pay-off for gender adapted rural services. It seems important to look in further depth into this matter. With regard to the sensitization of policy makers and public servants, specific media messages and extension efforts may be necessary to shape gender sensitive attitudes towards women's dual roles in having to comply with productive/income-generating and reproductive/biological roles. Support for women

in performing their dual tasks may call for the provision and awareness of drudgery-reducing equipment with institutional support.

National commitments in adaptive agricultural research and extension need to more effectively take into account women farmers. Research is needed to verify whether community-based and participatory methods are actually interesting areas of public investment. One would, in assessing the popularly recommended approaches, take into account public premiums in reaching the isolated, by-passed and vulnerable groups of women and youths within the context of utilizing potential human resources for development. Participative and functional extension forums at micro levels may create dynamic

interactions and mutual feed-back for locally-defined needs.

There are ways to promote gender sensitivity, as well as improved techniques and equipment which are gender neutral. The Gender Assessment Study as a method for project design, planning and implementation stages as well as for agricultural extension programs is a suggested tool to promote the effective use of development funds. This concurrently cautions future designs of isolated WID (women-in-development) programs or components within national development projects which in extreme paternalistic communities tend to get little to no support from men.

CGPRT Centre News and Activities

Diversification of Agriculture in South-East Asia

This project has now started in three countries: Indonesia in cooperation with the Centre for Agricultural Socio-Economic Research, Thailand in cooperation with the Office of Agricultural Economics of the Ministry of Agriculture and Cooperatives (OAE), and Viet Nam. In Indonesia, farm-level and commodity chain-level models have been built for Java wetlands and simulations were conducted along various scenarios of adjustment of the food crop sector to the changing environment. In Thailand, farming systems typology has been done by OAE staff during two workshops, the first at the OAE in Thailand in March and the second at the CGPRT Centre in July. The final data needed for the farm-level model building have now been collected. In Viet Nam, a team of researchers is now starting to work on the agro-ecological zoning and farming system typology of Viet Nam. The first results of the wetland-Java simulations and Thailand farming system analysis will soon be available.

Regional Statistical Database System

In continuing their efforts to make a broad range of data more accessible to the people who use it most, the CGPRT Centre and Pakistan

Agricultural Research Council, through the Social Sciences Institute of the National Agricultural Research Centre have undertaken the compilation of a new data set. The statistical profile of CGPRT and other crops of Pakistan will soon join those of Indonesia, the Philippines, Thailand, Viet Nam, and Sri Lanka, which have been published by the Centre in recent years. The date for publication has not been announced, but preparations for printing are in their final stages.

Market Prospect of Upland Crop Products and Policy Analysis in Selected Countries in Asia

Seven Asian countries are participating in the project and are divided into two groups. The first consists of the following four countries and respective research institutes:

India: Division of Agricultural Economics, Indian Agricultural Research Institute (IARI), New Delhi.

Indonesia: Centre for Agricultural Socio-Economic Research, Bogor.

The Philippines: Bureau of Agricultural Research, Department of Agriculture, Manila.

Thailand: Office of Agricultural Economics, Ministry of Agriculture and Cooperatives, Bangkok.

Following the planning meeting held in Bogor at the end of February 1995, the four appointed national experts started carrying out their own studies and analyses for their individual countries. During June and July 1995 the project experts of the Centre, together with Dr. Boonjit Titapiwatanakun from Kasetsart University (Bangkok), who assists the project as a regional adviser, visited all four partner agencies on an interim mission. The general objective of the assignment was to discuss issues which emerged from the interim report and to assist the country expert in the preparation of the final draft report.

The national experts will finalize and refine their reports and case studies up to the end of September 1995, when the draft meeting for the first group is planned to take place at the Centre.

Meanwhile the Centre, in close contact with its partner institutes, was able to identify national experts for the three remaining countries of the second group (China, Pakistan and Viet Nam). They will be invited to attend the planning meeting in Bogor during the first week of October, after which they will start working on their country studies.

International Courses

University of New England Development Studies Program 1996 Short Course Program

1. **Role of Institutions in Development**
23 January to 16 February 1996 (4 weeks)
2. **Recovering from Armed Conflict**
5 March to 29 March 1996 (4 weeks)
3. **Economic of Resource and Environmental Management**
16 April to 31 May 1996 (7 weeks)
4. **Water Resources Planning and Management**
16 April to 10 May 1996 (4 weeks)
5. **Breeding and Genetic Evaluation of Livestock in the Tropics**
9 July to 26 July 1996 (3 weeks)
6. **Managing the Transition to Industrialisation**
9 July to 9 August 1996 (5 weeks)
7. **Environmental Management in Development**
9 July to 9 August 1996 (5 weeks)
8. **Planning for Sustainable Rural Development**
15 October to 29 November 1996 (7 weeks)

Further information can be obtained from:

Executive Officer
Development Studies
Program PO Box U298
University of New England
Armidale, NSW 2351
AUSTRALIA

International phone: (6167) 733248
International fax: (6167) 733799
E-mail: DSP@UNE. Edu.a

9th International course on Seed Production and Seed Technology

International Agricultural Centre, Wageningen, the Netherlands
April 8 - July 11, 1996

Through the course, the International Agricultural Centre proposes to harness relevant knowledge and available experience in the Netherlands towards the training of seed agronomists and seed technologists in developing countries.

25th International Course on Integrated Pest Management: Strategies to control diseases and insect pests

International Agricultural Centre, Wageningen, the Netherlands
March 24 - July 6, 1996

The course intends to broaden the participants' view on plant protection and its role in plant production, and to strengthen the knowledge of an the skills in plant protection methods with emphasis on IPM, in order to allow the participants to use IPM, its concepts and related techniques, in their own working situations.

25th International Potato Course: Production, Storage and Seed Technology

International Agricultural Centre, Wageningen, the
Netherlands
April 7 - July 12, 1996

The objective of the course is to provide persons working in developing countries who are engaged in aspects of potato production, with further knowledge and understanding of and skills in various aspects of their work. These aspects include: physiology, growth and production; storage, handling and utilization; diseases and pests; seed technology; seed production and seed supply; breeding and varieties.

Total fees amount to 4,500 Dutch guilders.

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Telephone : +31-8370-90111
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E-mail : IAC@IAC.AGRO.NL.

Stoas International Course on Competency Based Education

27 November - 16 December 1995
Wageningen, The Netherlands

Competency Based Education (C.B.E.) is an effort to meet the new requirements for flexible programs in vocational education and training.

Traditionally, in all education, we have accepted the option of making learning the variable and time the constant. Our educational systems are based on hours of instruction, a convenience for administration and planning which is hard to give up. The most important differences between conventional programs and C.B.E. programs are among others:

Conventional Program	Competency Based Program
- time based	- performance based
- group paced	- individually paced
- group needs	- individual needs
- delayed feedback	- immediate feedback
- text book/workbook	- modules and media materials
	- criterion referenced

It should be clear that C.B.E. is more than just splitting the textbooks in chapters and assuming these are modules. It is much more a process of changing the attitude and developing the skills and approaches of those involved directly in teaching and those involved in managing these learning process.

Objectives of this course:

The objectives of the STOAS International Course on C.B.E. are:

- * to transfer the philosophy of C.B.E.
- * to assess the problems involved in introducing C.B.E. in a conventional educational system.
- * to prepare approaches and plans to introduce C.B.E. in participants' own practical situations.

Participants will come from:

- * ministries responsible for agricultural education.
- * institutes involved in supporting and coaching agricultural education.
- * agricultural schools.

Participants would be involved in introducing and/or coaching the introduction of the C.B.E. approach in the agricultural education system in their country.

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CGPRT Centre

The Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre) was established in 1981 as a subsidiary body of UN/ESCAP.

Objectives

In co-operation with ESCAP member countries, the Centre will initiate and promote research, training and dissemination of information on socio-economic and related aspects of CGPRT crops in Asia and the Pacific. In its activities, the Centre aims to serve the needs of institutions concerned with planning, research, extension and development in relation to CGPRT crop production, marketing and use.

Programmes

In pursuit of its objectives, the Centre has three programmes which are mutually supportive:

1. Research, which entails the preparation and implementation of studies covering production, utilization and trade of CGPRT crops in the countries of Asia and the South Pacific;
2. Training of national research and extension workers;
3. Information and documentation which encompasses the collection, processing and dissemination of relevant information for use by researchers, policy makers, and extension workers.

Palawija News

Contributors are invited to submit concise summaries of significant social research related to CGPRT crops for publication. Figures (graphs or tables) may accompany the article. All articles are subject to editing to meet space limitations.

Please send all queries relating to articles in *Palawija News* to Publications Section, CGPRT Centre, Jalan Merdeka 145, Bogor 16111, Indonesia.

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