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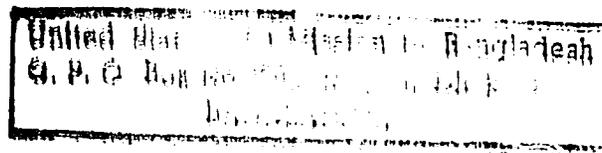
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**WOMEN IN RURAL  
DEVELOPMENT:  
BANGLADESH**

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## FORWARD

The estimated total contribution by the women in farming-related activities such as cultivation, post-harvest activities, marketing, etc. is between one-third to one-half. Any visit to the rural areas will reveal the visible participation of rural women side-by-side with their men in such activities as: weeding; application of fertilizer/manure; threshing and husking; harvest of vegetables, spices, and fruits; raising of livestock, as well as collection of animal feed, milk, eggs, and other animal products; preparation of fuel and food for the farm families; drying and processing of various agricultural products; etc. However, with all such valuable and vital contributions, like in many other low-income countries, their contribution to the farm economy is neither appreciated nor they are rewarded in the monetary sense due to prevailing socio-cultural reasons. At the same time, there is a general lack of public/government programs to upgrade their skills and uplift their lot.

Recently, in recognition of the above concerns, the Government of Bangladesh (GOB) has given increasing attention to Women-in-Development (WID) issues. The Agricultural Economics and Rural Sociology (AERS) Division at BARC has taken initial steps in this regards with a special interest in nutrition, homestead gardening, vocational training, post-harvest technologies, and agro-processing technologies. With the assistance of ARP-II (Supplement) Team a study was undertaken with the following Terms of Reference (TOR):

1. Review literature regarding WID, including initiatives undertaken by various donors, and prepare an updated paper showing the current situation. Based on the above, focus activities on post-harvest and value addition opportunities where women are either currently involved in or have a good potential to do so;
2. Estimate monetary value of women contribution in post-harvest and value-addition activities in three selected rural areas namely, Kalapara, Sylhet, and Kurigram;
3. Identify and describe briefly projects which will address chronic problems which constrain the full and efficient use of women resources in support of rural agribusiness enterprises;
4. Assess opportunities/potentials for upgrading/improving agro-processing techniques--post-harvest handling, commodity processing, and food preservation--in the rural areas;

5. Assess training needs and develop draft syllabi/curricula for training programs in home economics, processing and marketing of cultural produce;
6. Suggest Monitoring, Evaluation, and Follow-up systems for women programs relating to post-harvest and value-addition activities.

This study was undertaken by Dr. Carol Carmen Burch & Ms. Yasmeen Sabrina Rahman under the supervision of Dr. Ali Mohammad, Deputy Team Leader and Resident Consultant, Agricultural Economist, ARP - II(S). The Scientists of AERS division also assisted in the field visits, review of literature, and necessary logistic support of the consultants. The study will strengthen WID component of AERS Division of BARC. We also believe that the report will provide useful and important information to the agriculture researchers both within and outside the NARS.

The AERS Division acknowledges the kind assistance of all those who made this study a success.



Dr. S.M. Elias  
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## LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AERS	Agricultural Economics and Rural Sociology
BARC	Bangladesh Agriculture Research Council
BARD	Bangladesh Academy for Rural Development
BARI	Bangladesh Agricultural Research Institute
BAU	Bangladesh Agriculture University
BBS	Bangladesh Bureau of Statistics
BIDS	Bangladesh Institute of Development Studies
BSCIC	Bangladesh Small and Cottage Industries Corporation
BFRI	Bangladesh Forest Research Institute
BRAC	Bangladesh Rural Advancement Committee
BRDB	Bangladesh Rural Development Board
CIDA	Canadian International Development Agency
CIRDAP	Centre for Rural Development for Asia and the Pacific
DAE	Department of Agricultural Extension
DANIDA	Danish International Development Agency
DFP	Disaster Follow-Up Program
DLS	Directorate of Livestock
FIVDB	Friends in Village Development in Bangladesh
FSR	Farming Systems Research
GB	Grameen Bank
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
MCC	Mennonite Central Committee
MIDAS	Micro Industries Development Assistance Society
MOA	Ministry of Agriculture
MSS	Mahila Samabay Samity
NARS	National Agricultural Research Systems
NGO	Non-Government Organization
NORAD	Norwegian Agency for Development
RDRS	Rangpur Dinajpur Rural Service
SIDA	Swedish International Development Agency
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WAD	Women's Affairs Department

## EXECUTIVE SUMMARY

General interest in women is growing rapidly, but the specific economic dimensions constraining rural women's lives have yet to be incorporated into all development agendas. Until now there has been little focus on women's issues within the activities of the National Agricultural Research System (NARS). Recently the Agricultural Economics and Rural Sociology Division (AERS) at BARC has sought to address this gap by taking a special interest in studying gender issues and incorporating them into the agricultural research system. Given this, there is a need for an integrated understanding of women's place in the entire farming system. The primary focus of this report is to place women in the context of the wider agricultural production system in Bangladesh. The objective is to suggest directions for future development inputs which will be responsive to the needs of rural women in Bangladesh and improve the welfare of rural households.

As indicated, the conceptual framework of the report has been to view women within the broad framework of the farming systems research approach. A review of women's present participation in agriculture, as conveyed by national documents, research, and a number of programmatic interventions, sets the background for this. The report examines the nature and extent of women's contribution to field crops, with particular focus on their post-harvest involvement. Further, it highlights the fact that women's participation in farming is probably greater in homestead production. Attention is also given to the differential access to resources and the impact this has on women's increased participation in the national economy. There is also an indication of potential for intensifying women's productivity by linking their present occupational involvement in all agricultural sectors to agro-based small scale enterprises.

In principal, women's contribution to the economy is no different than that of men. In practice however, valuation and measurement of their contribution is complex. Drawing lessons from the review, it is necessary to strengthen the data base on women's contribution to the farming enterprise if social and economic indicators for measuring and evaluating their integration into agricultural development efforts are to be forthcoming--but more, reliable. These measurements must be based on updated, empirical research. As rural Bangladesh becomes increasingly dependent on the market economy, women's ability to earn a cash income will become essential. A conscious, sustained effort is required to enhance their income producing capacities and expand their economic options. In doing this the nation will tap resources that would otherwise remain dormant. To this end, infrastructure for organization, production, credit, and marketing must be developed to meet the needs of rural women.

## RECOMMENDATIONS

Rural women have played a decisive role in the operation of farming systems; one that is expected to expand in the future. To keep abreast of the rapid changes now taking place in the countryside, to tap and direct the resources represented by women's skills and labor, and, most importantly, to increase women's access and control over inputs and benefits, there is a need to broaden and strengthen the institutional support extended to rural women. To accomplish this it is necessary to: (1) rethink the roles and capacities of rural women; (2) support research and enhance data collection on women's role in agriculture; (3) train managerial and field extension staff working with rural women in horticulture, homestead forestry, livestock, and fish culture; and (4) initiate programs expanding women's production options and capitalizing on sectors with growth potential.

### 1. RETHINK THE ROLES AND CAPACITIES OF WOMEN

Until women are recognized as farmers whose production and managerial activities are instrumental to the viability of the rural households, there will be little headway in overcoming the constraints placed on them or expanding their opportunities in the agricultural sector. This not only means a loss for women, but it also means government's efforts to promote self-sufficiency and food security will have limited effects.

Two actions can be taken to promote the integration of women into the mainstream of the agricultural development process. First, a Women's Agricultural Research Program should be established at selected Farming Systems Research sites as noted in USAID's WID portfolio review (Calavan 1989). Second, Farming Systems Research should emphasize the whole-farm approach that the approach implies; focusing not only on men's but women's roles in field crop production, agro-processing, horticulture, agroforestry, livestock rearing, and fish culture.

### 2. SUPPORT RESEARCH AND ENHANCE DATA COLLECTION

Programs, projects, and policies that affect women require accurate information to be fully effective. The disaggregation of statistical and research data by gender and socio-economic class is fundamental in fulfilling this need. Women are involved in many types of production systems and this involvement differs across agro-ecological zones, cultures, and class. In short, rural Bangladeshi women are not homogeneous. Project objectives and research should reflect this. Much of the research on rural women carried out during the mid 1970's to the early 1980's is now out of date. There is a need to update this information, support long range basic research, and institute regular data collection procedures on a regional basis. To confirm appropriate data collection and serve a clearing-house for research, a system of reporting needs to be instituted (possibly coordinated through a women's desk at BARC). This information should be readily available to facilitate program development.

### **3. TRAIN THE TRAINERS**

Managerial and field extension staff working with rural women need training on the roles of women in agriculture and agricultural skills training in both field-based and homestead production, including horticulture, homestead forestry, livestock, and fish culture. In other words extension staff training should be germane to the work women actually do and are capable of doing if they are to address the technical problems and constraints faced by them. The number of female staff should be increased and they should be mobile so that they may easily reach women farmers. Extension staff needs to be aware of the agricultural potential of landless and marginal farm households, which are increasing in number and often women headed. If well trained and utilized they are in a position to strengthen the links between farming systems researchers and women farmers.

### **4. INITIATE PROGRAMS FOCUSED ON EXPANDING OPTIONS AND TAPPING GROWTH POTENTIAL**

Crop and sector diversification are key elements in a strategy to attain self-sufficiency and increased productivity on a sustainable basis. Intensified vegetable production, homestead based livestock rearing, poultry raising, fish farming, and agroforest programs are major areas where growth potential exists. New areas of productive activity include cooperative ventures in field agriculture and agro-business. These two areas hold special promise for landless women. A number of NGOs have successful projects in each of these sectors, but their scale of operation is restricted. It remains for government agricultural institutions to replicate these successes nationwide. To support growth in each of these sectors, women's access to credit needs to be expanded. This means more women should be reached and the size of loans should be increased. To help ensure that the growth potential of women's enterprises is realized, expansion of the credit system should be joined with human development training.

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## I. INTRODUCTION

### A. WOMEN IN RURAL ECONOMIES

There is widespread recognition that failure to incorporate women into the development process is self-defeating over the long term. Women's labor and skills represent key resources in rural economies. Unless their actual and potential contribution to the production process is recognized, efforts to improve the well-being of farm households and advance food security will be hampered.

Bangladesh can ill-afford to under-utilize its resources in women. A recent World Bank report indicates that with a per capita GNP of US \$170, Bangladesh is the fifth poorest nation in the world, the only Asian country to rank in the bottom five. At projected growth rates the number of poor will increase over the next decade. Without strong measures to counter these trends poverty in Bangladesh will deepen significantly (World Bank 1990b).

The *Strategic Plan for Agricultural Research to the Year 2000* by BARC (1990) acknowledges that women make up a significant and increasing part of the agricultural workforce. Although the plan uses a farming system approach with a holistic focus on the farm household in establishing guidelines for agricultural research, specific reference to the role of women in the transformation of the agricultural sector is scant. The plan notes initially that new technologies offer opportunities for both men and women, but subsequent emphasis is placed on the impact of new technologies on women; raising question concerning the effects of post-harvest technologies on gender relations, and the possible consequences of new technologies, surpluses or accumulated disposable income on the diet and well-being of women and children.

The frequent negative impact of the development process on women is extensively documented throughout the world and it is appropriate that the plan addresses this issue. However women not only are affected by, but strongly affect the course of the development process. While it is commonly acknowledged that rural Bangladeshi women predominate in post-harvest processing of field crops, they make an even greater contribution in homestead-based production systems. As such they supply supplementary food crops and fuel to their household, care for livestock and poultry, and are involved in fish culture. The Strategic Plan identifies these production systems as central program areas in the farming systems approach. It remains for the plan to give explicit recognition to the role of women in each of these sectors.

### B. BACKGROUND TO THE REVIEW

This review was undertaken over a twelve week period from June to August 1990. Initially, preliminary discussions were held with relevant persons engaged in agricultural research and rural intervention, including resource persons from government agencies, national research institutes, bilateral and multilateral

government agencies, national research institutes, bilateral and multilateral donors, and a number of NGO's. A rich body of primary and secondary sources and recent Rapid Rural Appraisals (RRA) aided our review and served to ground us in the basics of rural conditions in relation to women. An appraisal of the literature was followed by visits to pre-selected study areas representing different agro-ecological zones of Bangladesh. During these visits, we attempted to meet with farmers, both female and male, who were representative of the range of socio-economic diversity and project involvement characterizing rural Bangladesh. These visits were especially useful in providing a clearer picture of the study areas and the impact of regional variations on women's agricultural participation. They offered an opportunity to evaluate, in a small way, women's roles as reviewed from primary and secondary sources and understood from our discussions with people working on rural development issues. A summary of the field visits is appended.

We faced a number of problems in undertaking our review. First, we were unable to locate a number of studies, despite access to a number of fine resource collections; BIDS' and CIRADAP'S being the most useful. Second, there is uneven coverage on women's agricultural work. In some cases, a topic attracts intense study for a few years, and then is seemingly abandoned. Research on post-harvest paddy processing is perhaps the most notable example of this. Time was not adequate to fill some of the more important gaps with field surveys. Our spot checks of some topics met with inconsistent results. Women were ready to discuss their agricultural involvement in qualitative terms, but were less able to speak reliably concerning their time allocation between sectors. Unfortunately, much of the research on women's time allocation is marred by aggregation of the data in areas we wanted to distinguish.

### C. WOMEN IN RURAL BANGLADESH: THE CURRENT SITUATION

Although not widely appreciated, women in rural Bangladesh have always been substantially involved in agricultural production. This lack of recognition may be due in part to the traditional division of labor in which men's activities are rigidly segregated from those of women. Ideally, men's work concentrates on field-based agriculture and marketing, whereas women's activities center on the family homestead. Within the private domain of the *bari*, women perform most of the post-harvest processing of crops, tend gardens, and are active in fish culture, livestock rearing, poultry raising, and forestry. Because this work is unpaid and considered domestic it has been difficult to place a monetary value on women's contribution to the household economy.

A number of studies have pointed out that women have longer working days than men. Despite this, their work remains largely invisible both at the local level and in national accounts. Because many of the services provided by women are unpaid or taken for granted as "house work," their work is undervalued even though it clearly results in net value added. National accounts tend not to recognize their work due to the way in which the labor

force is defined and the difficulty in measuring and valuing nonmarket production.

The strict division of labor in the rural areas is now breaking down. Increasing population pressure, coupled with spreading landlessness and impoverishment in the countryside are straining the abilities of families to meet basic subsistence needs. The family support system is dissolving and family structure is transforming as the nuclear family becomes the norm. Increasing numbers of women are becoming *de jure* or *de facto* heads of households due to divorce or abandonment as men abdicate their traditional roles and migrate to urban areas in search of employment. As women become the effective agricultural decision makers, or are forced to seek work beyond the homestead in crop production or as wage laborers, economic autonomy is being thrust upon them.

#### D. WOMEN'S STATUS: A MACRO VIEW

According to the most recent statistics, the population of Bangladesh has grown from nearly 88 million in 1980 to over 110 million in 1990 (BARC 1990). The projected population for the year 2000 is 145 million (World Bank 1990a). Estimates for 1989 show that there are 53.3 million women, representing 48.5 percent of the total population (Ministry of Planning and Ministry of Finance 1990) both urban and rural. Of the total female population 82 percent are rural. With a limited land area of 144,000 km<sup>2</sup> there is increased pressure on arable land. Limited resource base is straining to meet increased demand on food, housing, fuel, and clothing. Too many people in too little land has given rise to:

- \* increasing landlessness;
- \* strengthening of class differentiation;
- \* changing family composition.

Thus according to the 1981 census 52.7 percent of the total households are nuclear in Bangladesh. Changing family structure has several consequences for women:

- \* being detached from joint families, they are subjected to less hierarchical authority;
- \* with the breakdown of joint family, they are more exposed to risks of destitution in case of desertion or widowhood;
- \* they have less chances of depending on the family support systems.

In fact, women's position in the household and within the kinship structure has given place to growing number of female headed households (Annex ). One study claims that within the 15.4 percent female headed household 58.8 percent are widowed or divorced (Adnan 1989). The incidence is always higher among rural females--possibly because of increasing rural-urban migration of male heads. On the whole, taking the reins of the household, leaves women little scope to conform to the customary social values associated with the strictures of purdah.

## Marital Status and Motherhood

Marriage is almost universal for a Bangladeshi woman. According to the 1981 Census, less than 1 per cent of women within the 40-45 age groups have never been married. It is somewhat disconcerting to note that the legal age for marriage of 18 years, is not adhered to. The 1981 census gives 16.8 years as the mean age at marriage. The proportion of currently married women in the 10-14 years age group was 7 percent in 1981 and 65 percent for women in the age 15-19.

However, just as it starts early, marriage also ends relatively early. Census data shows that 17.4 percent of the women become single (through widowhood, separation or divorce) between the ages of 40-44. Above that age, one woman in four expect to be divorced or widowed. Due to early marriage and a shorter life span, women are subjected to frequent pregnancies. Society respects the mother image; having children is also considered economically advantageous. In 1981 therefore, the child-women ratio was found to be 807:1000 for women between 15-49 years of age (Bureau of Statistics 1989).

Recent figures claim that 22 million women are in the reproductive age group. Though in 1987, the total fertility rate declined by 1.92 the age specific fertility rate for 20-29 years age group increased, especially in the rural areas.

## Health and Nutrition

Data on health and nutrition also indicate significant gender differences. Although there has been some improvement in life expectancy rates between the years 1974 and 1985, women's life expectancy has been lower than men's- 54 for women and 55 for men (Jahan 1989). The age specific mortality pattern indicates higher death rates for infant males below one year. Discrimination against females quickly reverses this, however. As early as 1-4 years, female child death rates exceed that of males. Other estimates claim that female child mortality was 30 percent higher than males. Severe maternal malnutrition implicates communicable diseases in infants; nine percent of newborns die in their first month and twelve percent by the twelfth month.

On the other hand, nearly one-third of all adult female deaths between 10-49 years age group are maternity related (Jahan 1989). Maternal mortality is high; according to one study, taking the result of various area-specific research, maternal mortality is as high as 7.7 per thousand live births. Conservative estimates rate it as high as 6 per thousand live births. Whatever the figures, it is much higher than that of other developing countries where it averages 4.5. Numerous studies relate maternal mortality to:

- \* early pregnancy at immature age;
- \* frequent and repeated pregnancies (under pressure to bear more sons);
- \* infections and complications of child birth (due to untrained midwives and unsanitary conditions);
- \* acute malnutrition.

The average per capita daily food intake also varies between genders. At the national level, chronic malnutrition for women was 57.6 percent as against 54.8 percent for men. Acute malnutrition also differed--9.5 percent among women and 6.8 percent among men. Maternal malnutrition is especially universal in the rural areas and results in fetal growth retardation and a high frequency of low birth weight (Observer 1990). Malnutrition is compounded not only by a lack of knowledge about nutritional requirements, but also by a systematic bias against women in general.

### Education

Education levels have had little significant rise over the years. Though census figures show a rising trend in literacy rate from 1974 to 1981 (from 13 percent to 18 percent), the definition of literacy in both census is quite different. According to 1981 Census, the female literacy rate is 16.0 percent; almost half of that of males (31 percent). Drop out rate is also higher among girls. Only 9 percent females compared to 18 percent males go beyond class V (Jahan 1989). Other estimates show that in 1984-85, 62 percent of the girls of the primary age group dropped out of school against 27 percent of the same age group boys (Khan 1988). Most studies confirm the following reasons for lower literacy and high drop-out rates for girls:

- \* early marriage;
- \* poverty;
- \* parent's low investment in educating a female child;
- \* adherence to social traditions;
- \* absence of female teachers in school.

Consequently, education contributes little to women's increased economic participation.

## II. EARLY RESEARCH: THE WORK OF RURAL WOMEN

Since the mid-1970's considerable research has been carried out on gender issues in Bangladesh, particularly in relation to women's contribution to the rural economy. Prior to this time little was known about the economic roles of women in the countryside. As it has been noted many times, peasant women were both socially and economically invisible.

### A. LABOR FORCE STATISTICS

Official labor force statistics fail to give an accurate picture of the number of women engaged in agricultural production. The 1974 population census indicates that females age 10 and over comprise 4.1 percent of the rural labor force. This figure increases to 5.7 percent for 1981, and then rises to 8.6 percent in the 1984-85 Labor Force Survey (LFS). The most recent 1985-86 LFS indicates the women make up 9.9 percent of the rural labor force (Table 1). Looking specifically at agricultural employment, of the active labor force in the 1984-85 LFS, females employed in agriculture accounted for only 1.2 percent. This increases to 2.03 percent in the 1985-86 LFS (Table 2).

Table 1: Female Labor Force Composition by Area of Residence

Year and Characteristics	National	Rural
<b>1974 Census</b>		
Labor force (Millions)	0.9	0.8
Percent of total labor force for area	4.2	4.1
Participation rate	4.0	3.8
<b>1981 Census</b>		
Labor force (millions)	1.5	1.3
Percent of total labor force for area	5.7	5.7
Participation rate	5.1	5.0
<b>1984-85 LFS</b>		
Labor force (millions)	2.7	2.2
Percent of total labor force for area	9.0	8.6
Participation rate	8.2	7.7
<b>1985-86 LFS</b>		
Labor force (millions)	3.2	2.6
Percent of the total labor force for area	10.4	9.9
Participation rate	9.4	8.6

Source: Bureau of Statistics. *1989 Statistical Yearbook of Bangladesh*, Ministry of Planning, GOB.

These low figures can be attributed to the fact that the economically active population is defined as those who are either employed or looking for work. This excludes most rural women who work on their own farm and are primarily subsistence oriented. They tend to be classified as housewives; implying they are not economically active.<sup>1</sup>

**Table 2: Participation of Women in the Labor Force**

Economic Category	1984-85		1985-86	
	Number (Million)	Proportion (%)	Number (Million)	Proportion (%)
<b>Labor Force</b>				
Female	2.7	9.15	3.2	10.36
Male	26.8	90.85	27.7	89.64
<b>Total</b>	<b>29.50</b>	<b>100.00</b>	<b>30.90</b>	<b>100.00</b>
<b>Employment in Agriculture</b>				
Female	0.2	1.20	0.36	2.03
Male	16.5	98.80	17.12	97.97
<b>Total</b>	<b>16.70</b>	<b>100.00</b>	<b>17.48</b>	<b>100.00</b>

Source: Bureau of Statistics, 1985, *Labour Force Survey, 1984-85: Final Report*. Ministry of Planning, GOB; Bureau of Statistics, 1989 *Statistical Yearbook of Bangladesh*. Ministry of Planning, GOB.

## B. MICRO-LEVEL DATA

The research carried out over the last 15 years gives a different view of the labor participation of rural women than that of the national statistical record. Village case-studies, time-budgets, and surveys show that rural women participate in nearly all phases of the agricultural production process and that their involvement in some phases, such as work in the fields, is increasing.

The following overview is intended as a sampling of the primary literature assessing the role of women in the rural economy. Although definitions and methodologies vary, and are not strictly comparable, in documenting women's direct and indirect economic contribution, these studies often provide detailed descriptions of the tasks women perform and do much to correct the notion that women are peripheral in agricultural production.<sup>2</sup>

This research underlines two key points:

- \* Time-budget data indicate that while regional and seasonal variations can be significant, women have heavy work-loads, frequently working more hours during a given period than men.
- \* Women's participation in different forms of agricultural production is determined primarily by the economic standing of the household, with family land-holding providing a good indication of class status.

## 1. Time Allocation

In one of the earliest studies based on data from seven different unions, Farouk and Ali (1975) report that women spend between 9.9 to 12.2 hours/day in productive work, whereas for men the figure is 9.3 to 10.7 hours/day (productive work includes activities that are income earning and income conserving). Farouk notes considerable variation between regions and, in a later study (1980) carried out in six villages, he observes a great deal of variation between women of different socio-economic strata within a single village. However on average, women's "leisure" time amounts to no more than 0.07 to 1.36 hours/day. Barkat-E-Khuda (1980) offers further evidence that women's labor input can exceed that of men, showing that in a village in Comilla district men devote between 37 to 46 hours a week to productive work, whereas women work 52 to 60 hours during the same period. A village study from Mymensingh district indicates that on average both men and women work 8.3 hours/day, but that the allocation of labor to different activities varies across class strata (Cain et al. 1979). More recently, research carried out in two villages in Dhaka district points out that in certain seasons women work over 14 hours/day, beginning work at 5:00 a.m. and continuing until after 7:00 p.m. (Wallace et al. 1987).

## 2. Land-Holding and Labor

Time allocation studies indicate that the majority of female wage-earners belong to landless households. Women from small, medium, and large land-holding households tend to work on their own farms. Some studies indicate that women of families with extensive land-holdings put in long hours, in part overseeing the work of hired labor. Farouk's 1980 study, for example, discloses great variation in the work activities of women based on income and landholding. Women of the middle income/land-holding stratum devote the most time to "farm work" (looking after cattle, field work, fishing, gardening). Poor women have too little land to provide much opportunity for work and large farm households tend to hire female labor. However, for other farming activities, such as post-harvest work, this relationship does not hold. Barkat-E-Khuda (1980) reports that in the Comilla area, village women in households having land-holdings of between 1.01 and 2 acres spend most of their time on directly productive work, whereas women in households owning 2 acres or more spend most of their time on household maintenance activities. Research by Westergaard (1983) indicates that the activities of women belonging to land-holding households are centered on the homestead where they are involved in post-harvest operations, vegetable

gardening, animal raising, and fish-net making. As the land-holding increases beyond three acres, however, their involvement in these activities decreases. In contrast, economic necessity induces landless women to seek "off-bari" employment. They are engaged primarily in rice-husking and other crop processing work. Base on research in two villages in Dhaka district Ashan et al. (1986) confirms that women from landless households are more likely to be engaged in employment that takes them beyond their homestead. Usually they find work as servants in the households of others or do pre- and post-harvest work.

Limited access to resources means that land-poor women are more likely to be underemployed. The research of Cain et al. (1979) reveals that women from land-poor households work on average slightly fewer hours (8.0 hrs/day), than those households with more land (8.5 hrs/day). Underlining the lack of work opportunities, Barkat-E-Khuda (1980) calculates a 36 percent rate of unemployment and 50 percent rate of underemployment for rural women in landless households. Although time-budgets from different regions often report that poor women work fewer hours than those who are better off, when work opportunities beyond their homestead are available, the work load of poor women can increase markedly. Wallace et al. (1987) report that landless women in a Dhaka area village devote fewer hours to indirect economic activities than women of small, medium, and large farm households. But when direct economic activities are included, landless women's labor time is the highest. Rahman's 1986 study on wage employment in four villages in Faridpur and Tangail points out that although the average number of working days is only 140 days/year, when women are actually employed, they work very long hours. Forty percent of the women work over 10 hours/day, another 40 percent work between 8 and 10 hours/day, and 20 percent work less than 8 hours/day. All of these wage earning women come from households that are virtually landless.

### III. WOMEN'S PARTICIPATION IN AGRICULTURAL PRODUCTION

Agriculture (including crops, livestock, fisheries, and forestry) accounts for 46 percent of the Gross Domestic Product in Bangladesh (BARC 1990) and utilizes 78 percent of the available work force (Johnson 1982). Rice is the most important crop and the staple grain of Bangladesh, with 60 to 80 percent of the annual harvest produced for home consumption (Abdullah 1985). The field crops of wheat, jute, sugarcane, and pulses follow rice in importance. Additional food and income for rural people are provided by homestead production of vegetable, fruit and tree crops, livestock, poultry, and fishing.

#### A. WOMEN'S ROLE IN THE FARM HOUSEHOLD

Traditionally, household farms are made up of two distinct subsystems: one focused on field production and the other on homestead production. These subsystems contrast in a number of ways. Field-based systems are located in the public domain. They are largely monocultural systems, dominated by staple grains or cash crops, and controlled by men. In contrast, homestead-based systems are located in private space, often walled in by structures and foliage. These systems are diverse--marked by polycultural gardening of fruit, vegetable, and tree crops, and include an array of animals (cattle, goats, sheep, chickens, ducks, and pigeons) and ponds for fish culture. Homestead production is largely controlled by women.

The seasonal pattern of labor input is also distinct between subsystems. Men's tasks for the most part are sequential; whereas women's tasks more often are simultaneous and overlapping, with frequent shifts between activities in the course of the day (Cloud 1985). In short, men's and women's traditional farming activities are distinguished by separate fields, crops, and tasks, with the two subsystems linked by homestead-based processing of field crops. The invisibility of women's homestead production systems is due not only to this segregation and to cultural biases which denigrate women's contribution to the farming enterprise, but also to the fact that homestead-based farming is more complex. As such, it is inherently more difficult to study.

This traditional segregation between men's and women's farming activities is changing rapidly. A recent monograph prepared under the auspices of UNDP and UNIFEM in connection with the Agriculture Sector Review (ASR) presents an update on the nationwide trends of women's involvement in agricultural production (Safilios-Rothschild and Mahmud 1989). Based on a survey on 3,949 households in 20 districts in different agro-ecological zones, the survey not only reaffirms that women's contribution in agriculture is significant, but also documents that women, working alone or jointly with men, participate in nearly all phases of agricultural production. Survey data indicate that 42.6 percent of the women have agriculture as their primary occupation (including homestead and field work, and agricultural wage labor) and another 15.4 percent have agriculture as their secondary occupation; resulting in a total involvement of 58 percent (Table 3).

**Table 3: Involvement of Women in the Agriculture Labor Force, 1989**

Agricultural Activity	Primary Occupation	Secondary Occupation
<b>Agricultural Production</b>		
<b>Direct Involvement</b>		
Working in Own Field	17.6	4.8
Homestead Agriculture	4.7	3.1
Livestock	4.2	1.1
Agricultural Wage Labor	12.3	3.1
Fisheries	0.7	0.0
Subtotal	39.50	12.10
<b>Processing Involvement</b>		
Rice Husking	3.0	3.3
Food Processing	0.1	0.0
Subtotal	3.10	3.30
<b>Total Involvement</b>	<b>42.60</b>	<b>15.40</b>
<b>Non-farm Employment</b>	<b>11.8</b>	<b>5.6</b>
	11.80	5.60
	11.80	5.60
<b>Total Labor Force Participation Rate</b>	<b>54.40</b>	<b>21.00</b>

Source: Safilios-Rothschild and Mahmud (1989:65)

Differential access to land is an important indicator of women's involvement in agriculture according to the survey. Women in very small land-holding households (0.05-0.49 acres) have the highest involvement in agriculture, followed by women in landless, small, functionally landless, and medium sized (2.5-4.99 acres) land-holding households.<sup>3</sup> Women in larger farm households (2.50 acres and above) contribute considerably less agricultural labor. Agricultural wage labor is the predominate work for women in landless and functionally landless households. In landless households that are male-headed about half of the women work as agricultural wage laborers, but this increases to two-thirds in landless households that are female-headed.

Contrary to the widespread belief that women do not participate in field agriculture, the ASR survey reveals that an average of 33.6 percent of the women do agricultural work on their own farms in male-headed households and 53.1 percent in female-headed households. For all farm sizes women's participation in field agriculture on their own farms is greater for households headed by females.<sup>4</sup>

Both the 1981 Population census and the ASR survey indicate that 15 percent of the rural households are legally headed by women,<sup>5</sup> but the survey data reveal that the highest incidence of female-headed households is found among the landless (25%). This incidence diminishes with increasing farm size. The survey also offers data on de facto female-headed households created when the husband migrates in search of work. The majority of the wives of migrant husbands make agricultural decisions (91%), hire labor (84%), sell crops (66%), and control at least part of the income from sales (82%). The remaining 9 percent of these women carry out these tasks with the son or male relative. Taken together de jure and de facto female-headed households make up 24.5 percent of the rural households. The highest percentage of these households occurs among the landless (one-third) and marginal and smallholders (one-fourth) with less than 0.50 acres, and is considerably lower for households of one acre or more. This finding suggests that women are in effective control of farming operations to a much greater degree than evident from national statistics. As the authors of the monograph note, this has important implications for agricultural extension and research.

According to the ASR sample survey the agricultural division of labor by sex is as follows:

Tasks traditionally carried out almost exclusively by women:

- \* post-harvest processing (parboiling/drying paddy, husking paddy by dhenki, husking pulses by dhokli);
- \* animal care (feeding and milking cow/bullock), looking after goats and poultry);
- \* homestead crop production (preparing land, sowing, fertilizing, irrigating, and harvesting crops).

Tasks performed only by women or jointly with men include:

- \* threshing paddy and wheat;
- \* storing and preserving seeds;
- \* storing and preserving crops;
- \* stripping jute fiber;
- \* preparing seedbeds and seedlings.

Tasks performed jointly by women and men in two-thirds of the households include:

- \* planting chillies and apices
- \* weeding crops.

Tasks performed exclusively by men or jointly by women and men include:

- \* transplanting rice;
- \* harvesting field crops;
- \* planting jute, tobacco, wheat, pulses, and oilseeds.

The only distinctly "male" tasks in over half of the households surveyed involved:

- \* spreading fertilizers
- \* spreading insecticides in the fields
- \* operating treadle or rover pump for irrigation.

## B. AGRO-PROCESSING

Although women's involvement in many agricultural activities has been overlooked in the past, early analyses agree that women are preeminent in crop processing. Their major contribution to direct production has been in post-harvest processing of rice (Begum and Greeley 1983), followed by jute, wheat, oil seeds, and pulses--depending on the agroecological zone. Chen (1986) provides a detailed review of crop processing activities, but these are not linked to time-budgets. In outline, processing work for rice includes preparation of the courtyard for crop drying, threshing (in some cases carried out solely by men), winnowing and sieving, soaking and parboiling, drying, husking, storage, seedling or seed selection and seed preservation. Some of these tasks must be repeated several times. Pulses and oil seeds require many of the same steps with the exception of soaking and parboiling. In processing jute women also are involved in stripping the fiber from the stalk, and storing and processing the fiber into rope or macrame.

In post-harvest work, rice is by far the most important crop handled by Bangladeshi women. Labor time to process one maund (37.38 kg.) of paddy is given in Table 4. These data are based on a field survey carried out in two villages in Mymensingh district in 1980. Table 5 gives the range in labor time to process one mound of paddy based on available sources.<sup>6</sup> Estimates indicate that the labor requirement for post-harvesting processing of rice is between 41 and 49 percent of the total person-days required for cultivation (Ahmed 1982). As a result, Ahmed figures the proportion of value added from from women's labor in parboiling, drying, and husking is 41 to 49 percent (1982). Begum and Greeley, on the other hand, calculate that the value added of post-harvest work ranges between 25 to 45 percent in the production of rice (Greeley 1982; cited in Begum 1985).

Women from better-off households work in processing the family harvest themselves and also hire labor (usually landless women) to help (McCarthy and Feldman 1983; Begum 1985). Some studies report that about 50 percent of paid labor opportunities for rural women come from rice processing in other households (Begum 1985; Chen 1986). This makes up about one quarter of all agricultural employment (cited in Ahmed 1982). However, another survey indicates that, while crop processing provides the largest share of employment, most of this work involves crops other than rice (Rahman 1986). Clearly, the crops involved can be expected to vary by agro-ecological zone.

**Table: 4 Labor Requirement for Post-Harvest Processing of One Maund of Paddy (1 person-day = 8 hours).**

Operation	Labor requirement (person-day/maund)			
	Amn Season	Boro Season	Aus Season	All Season <sup>a</sup>
Threshing	0.17	0.20	0.22	0.19 (14)
Winnowing <sup>b</sup> (3 times)	0.15	0.15	0.15	0.15 (11)
Soaking	0.03	0.03	0.03	0.03 (2)
Parboiling	0.14	0.14	0.14	0.14 (10)
Drying	0.11	0.19	0.19	0.15 (11)
Husking	0.71	0.71	0.71	0.71 (52)
All operations	1.13	1.42	1.44	1.37 (100)

Notes: Figures in brackets indicate per cent of total labor requirement.

a) Average of all varieties has been computed by using the percentages of total area under Amn, Boro, and Aus as respective weights.

b) One winnowing after threshing and two during husking.

Source: Ahmed (1982)

Due to increased yields, the adoption of improved cultivation practices, including high-yielding rice varieties, fertilizer, and irrigation, has led to increases in workloads not only in the field, but also in processing activities (von Harder 1975; Feldman and McCarthy 1984). For those villages that have adopted improved technologies the average number of days of hired female labor is eight times more than that found in villages relying on traditional techniques (Solaiman 1988).

On the other hand, improved technology represented by the introduction of mechanized rice mills has displaced female labor. Until recently post-harvest paddy processing using the dhaki (a foot-operated molar and pestle) accounted for the bulk of wage employment obtained by poorer women in rural areas; as noted up, to 50 in some regions. With the introduction of mechanized rice mills, which requires much lower labor input, these women have been thrown out of work (Ahmed 1982; Greeley 1982). Estimates indicate that from 50,000 to 1.2 million women have been affected by the new technology (Siddiqi 1985; World Bank 1990a).

**Table 5: Lower and Upper Ranges For Post-Harvest Operations (Person-Day/Mound).**

Operation	Lower			Upper		
	Labor	Variety	Source	Labor	Variety	Source
Threshing	0.09	T. Aman HYV	MOA 1979	0.30	B. Aman	MOA 1979
Winnowing	0.05	Unsp.	Ahmed 1982	0.93	Unsp.	Harris 1979
Soaking	0.03	Unsp.	Ahmed 1982	0.03	Unsp.	Ahmed 1982
Parboiling	0.14	Unsp.	Ahmed 1982	0.25	Unsp.	Harris 1982
Munking (home pounding)	0.66	Unsp.	Ahmed 1982	1.00	Unsp.	Satter 1975 Harris 1979
Drying	0.08	Unpar-boiled	Ahmed 1982	0.33	Parboiled	Von Warden 1975

Source: Hussain et al. 1988

### C. HOMESTEAD PRODUCTION

Homestead land is variably defined. Minimally it refers to the land occupied by the dwellings and the immediate surrounding area (including the courtyard). The ASR survey extends the definition to include the pond, path, space for growing trees and bushes, vegetable plots, and any unutilized area. In this case homestead land could in fact be at some distance from the household dwellings. Homestead land comprises about 1.1 million acres, or five percent of the cultivable land in Bangladesh. The homestead land of the 12.7 million rural households varies in size. About 56 percent of the households own 0.01 to 0.10 acres of homestead land, including the house; 17 percent of the households own between 0.11 and 0.20 acres, and less than 10 percent of the households own homestead land of over 0.20 acres. Over 17 percent of the households have no direct ownership of household land (Abdullah 1896). As rural population growth continues to push the fragmentation of field crop land, homestead land will become increasingly important in the farming system. Even now land occupancy surveys indicate that 28-33 percent of the rural households have only homestead land. In addition to homestead production these households support themselves by renting-in land and hiring out labor to on-farm and off-farm activities.

As described, traditionally the private space of the homestead has been the domain of women. Here, in addition to the household maintenance chores of cooking, cleaning, and caring for dependent children and adults, women manage a wide range of farming activities. Despite the fact that many of these activities, particularly those devoted to house gardening and animal husbandry,

contribute substantially to family income they have been undervalued. Village surveys by Chowdhury and Islam (1988) indicate, however, that income from homestead production ranges from 28 percent to 47 percent of the total family income (Table 6). In some cases over half of the fruit, vegetables, and spices grown in the homestead by women are sold to meet family expenses (BRAC 1983; Islam and Ahmed 1987).

Table 4: Contribution of Homestead Production to Total Annual Income Per Household, 1988.

A. Total Annual Income Per Household

Village	Source of Income										Total Income from homestead Production <sup>4</sup>
	Field Crops	Wage Labor	Others occupations	Homestead						Total	
				Poultry	Livestock	Vegetable	Fish	Trees	Others		
1	17	24	24	2	10	6	-	10	7	100	28
2	14	8	44	2	10	4	2	14	2	100	32
3	23	19	26	4	15	2	1	9	1	100	29
4	30	11	11	6	14	5	-	22	1	100	47

B. Total Annual Cash Income (after consumption)

Village	Source of Income										Total Income from homestead Production <sup>4</sup>
	Field Crops	Wage Labor	Others occupations	Homestead						Total	
				Poultry	Livestock	Vegetable	Fish	Trees	Others		
1	21	27	31	-	8	3	-	1	9	100	12
2	18	9	55	-	8	2	1	5	2	100	17
3	29	22	32	1	10	1	-	4	1	100	16
4	41	14	15	3	12	2	-	11	2	100	28

1/ Average areas of homestead in village 1 is 12 decimals; village 2 - 18 decimals; village 3 - 6 decimals and village 4 - 20 decimals.

2/ Income from wage labor includes the value of food normally provided in addition to wages.

3/ Other activities are crop processing, mat making, net weaving, etc.

4/ Excluding other homestead activities.

Source: Farouk Chowdhury and Reazul Islam, Intensification of Homestead Production, Cited in World Bank (1990).

## 1. Homestead Gardening and Forestry

Most of the labor in homestead crop production (including food, fuel, and fodder crops) is provided by women. Except for households with land-holdings over five acres, tasks such as seed preservation and germination, transplanting, watering, and land preparation are done by women (Hannan 1986). Children help in most of these tasks and husbands or other male relatives assist in pesticide and fertilizer application. If the plot is large or located at some distance from the immediate vicinity of the dwelling, men help more frequently. Village surveys by Hussain et al. (1988) suggest that men are more active in the cultivation of fruit and forest species than in vegetables (Table 7).

Table 7: Involvement of Family Members in Production in Homestead by All Farmers.

Item	Percent of respondent									
	Fruits & Forest Species					Vegetables				
	Wife	Husband	Child- ren	Labors	Others	Wife	Husband	Child- ren	Labors	Others
1. Seed/seedling collection	46.4	35.6	9.0	1.6	4.8	76.4	21.7	6.8	0.2	4.0
2. Seed storage	45.2	11.6	4.6	1.2	3.0	58.0	5.0	3.8	0.2	1.2
3. Seed soaking	33.6	8.6	4.2	1.0	2.0	4.4	4.8	2.0	-	1.8
4. Seed drying	26.6	23.8	5.4	1.2	1.6	47.4	25.8	5.2	0.6	2.4
5. Seedling raising in seedbed	17.8	30.8	8.2	1.6	2.2	36.4	17.6	5.4	1.2	1.6
6. Land preparation	21.0	47.0	14.4	3.0	3.8	44.6	25.0	11.8	2.0	1.4
7. Planting	30.0	50.0	16.8	4.8	4.8	54.0	22.0	11.0	1.2	2.2
8. Propagation	7.6	11.8	3.2	0.2	0.2	8.0	3.8	3.4	0.4	-
9. Water management	55.2	28.2	20.2	3.0	2.8	58.6	13.6	17.6	2.2	1.4
10. Pruning	9.4	23.6	11.8	1.6	1.0	13.8	11.2	6.8	0.4	-
11. Manured & Fer. collection	11.6	31.2	9.2	1.2	0.4	17.8	23.8	7.8	-	0.4
12. Insecticide	7.2	21.2	4.8	1.8	0.2	5.8	16.2	4.6	0.8	0.2
13. Manured & Fer application	11.2	30.2	8.8	2.8	0.8	21.1	25.2	7.4	2.0	0.4
14. Insecticide collection	4.8	19.8	5.6	2.4	0.6	9.0	14.6	4.0	-	0.4
15. Weeding	42.2	47.6	19.8	4.0	4.2	56.0	22.4	16.8	2.0	0.6
16. Harvesting	27.6	44.6	21.2	3.0	3.0	52.0	18.6	14.8	1.8	2.4
17. Labor Employment	8.4	15.8	3.8	1.0	1.0	12.6	10.4	3.2	0.4	0.2
18. Processing	23.4	10.8	3.8	0.4	0.6	22.2	7.0	2.4	-	1.6
19. Selling in Village	10.0	13.2	5.4	0.2	0.6	15.2	8.6	5.4	0.8	0.2
20. Selling in Market	3.6	20.2	8.4	1.0	0.8	4.8	14.0	8.8	0.6	-

Source: Hussain et al. 1988.

Village surveys indicate that over 80 percent of the rural households are involved to some degree in homestead crop production (World Bank 1988), but the intensity of homestead cultivation varies according to farm size. Productivity and income are higher for landless and marginal households compared with medium and large households according to a four village survey carried out by BARI. Landless households devote 33 percent of the homestead land to crop production in contrast to other households which cultivate between 8 and 16 percent of their homestead land. Women from landless families who have a house but no homestead land utilize their minimal space by planting vegetables that are able to climb to the roof of the house. Landless women with homestead land spend almost 4 hours a day on horticultural activities, whereas the average for all women is 1.6 hours/day (Islam and Ahmed 1987).

Throughout the world tropical homestead gardens are characterized by a diversity of crops and those of Bangladesh are typical. Over 60 different vegetables are cultivated in the various agro-ecological zones with 13 winter, 11 summer, and three year round vegetables common to all farm categories in all locations (Table 8). Spices, including ginger, tumeric, and chills, are also grown. In addition a number of voluntary leafy vegetables are collected from homestead land and consumed during times of food shortage (Hussain et al. 1988). About 30 tree species are grown on homestead land throughout the country (Table 9). Trees yield various utilitarian benefits, including: fruit, fuel, fodder, timber, useful oils and resins, shade, green manure, nitrogen fixation in the soil, prevention of soil erosion, shade, and privacy.

Table 8: Kinds of Major Vegetables/Spices grown in homestead in different season by farm category.

Kinds	Percent of respondent					
	Landless	Marginal	Small	Medium	Large	All
<b>1. Winter</b>						
1.1 Bottlegourd	52.7	67.8	66.7	67.2	70.8	61.8
1.2 Country bean	44.2	54.4	54.3	51.7	62.5	50.8
1.3 Sweet gourd	7.5	11.1	15.2	3.4	14.6	10.0
1.4 Spinach	1.0	3.3	3.8	5.2	8.3	4.2
1.5 Lal Sak	12.6	16.7	9.5	19.0	35.4	16.6
1.6 Cauliflower/ Cabbage	8.0	6.7	12.4	15.5	29.2	11.6
1.7 Tomato	20.1	22.2	20.0	19.0	43.8	22.6
1.8 Potato	2.0	7.8	16.2	15.5	18.8	11.2
1.9 Brinjal	14.6	16.7	26.7	24.1	37.5	20.8
1.10 Chilli	2.5	5.6	16.2	15.5	6.2	8.6
1.11 Barboti	8.0	7.8	9.5	8.6	14.6	10.8
1.12 Radish	10.1	12.2	15.2	20.7	45.8	16.2
<b>2. Summer</b>						
2.1 Sweet/Ash gourd	43.7	54.4	55.2	55.2	77.1	52.6
2.2 Amaranthus	18.6	21.7	31.4	31.0	35.4	24.8
2.3 Ribbed gourd	6.5	26.7	19.0	24.1	37.5	17.8
2.4 Lady's finger	6.5	7.8	7.8	9.6	12.5	8.6
2.5 Snake gourd	9.5	20.0	15.2	5.2	6.2	11.8
2.6 Cucumber	13.1	21.1	31.4	20.7	31.2	21.0
2.7 Pointed gourd	1.0	4.4	7.6	6.9	4.2	4.0
2.8 Paisak	6.5	4.4	8.6	6.9	6.2	6.0
2.9 Bitter gourd	10.0	13.3	16.7	16.9	18.8	14.6
2.10 Aroid	22.6	31.1	37.1	63.8	52.1	34.8
<b>3. Year round</b>						
3.1 Papaya	4.5	6.7	3.8	8.6	8.3	5.6
3.2 Chilli	6.0	5.6	4.8	8.6	14.6	6.8
3.3 Banana (Plantain)	4.0	5.6	3.8	1.7	8.3	4.4
3.4 Turmeric	3.2	7.5	18.1	21.7	24.3	11.6
3.5 Ginger	2.5	6.7	7.4	10.2	11.7	6.2

Source: Hussain et al. (1988)

Table 9 : Age distribution of Major Fruits and Forest Species

Kinds	< 5 Years	5 > 10 Years	10 > 15 Years	15 > Years	Total	Percent of farm planted
<b>1. Fruits Species</b>						
1.1 Mango	1.27	1.33	1.14	0.93	4.67	80.0
1.2 Jackfruit	0.80	0.74	0.64	0.52	2.70	65.6
1.3 Betel Nut	1.75	1.13	0.57	0.20	3.65	32.8
1.4 Coconut	0.55	0.60	0.38	0.59	2.12	53.4
1.5 Banana	2.74	-	-	-	2.74	27.6
1.6 Jujube	0.34	0.14	0.04	0.02	0.55	26.0
1.7 Guava	0.30	0.16	0.07	0.02	0.55	27.8
1.8 Black berry	0.17	0.08	0.08	0.03	0.36	17.2
1.9 Lemon	0.09	0.03	-	0.01	0.13	5.8
1.10 Date palm	0.03	0.11	0.07	-	0.21	2.2
1.11 Papaya	0.20	-	-	-	0.20	4.4
1.12 Custard apple	0.02	0.04	0.02	-	0.08	4.4
1.13 Litchi	0.01	0.01	-	-	0.02	1.0
1.14 Hogplum	0.01	0.01	-	-	0.02	1.4
<b>2. Forest Species</b>						
2.1 Bamboo	0.07	0.11	0.07	0.23	0.48	22.8
2.2 Karai	0.09	0.11	0.08	0.07	0.35	10.0
2.3 Giga	0.23	0.03	0.01	-	0.27	5.0
2.4 Pai	0.12	0.04	0.02	0.04	0.22	7.8
2.5 Babla	0.10	0.06	-	-	0.16	7.0
2.6 Shishu	0.03	0.06	0.03	0.04	0.16	4.8
2.7 Madar	0.01	0.03	0.03	0.02	0.09	4.6
2.8 Shimul	0.04	0.02	-	0.02	0.08	5.8
2.9 Mehogeni	0.01	0.01	0.01	-	0.03	2.2
2.10 Segun	0.01	0.01	-	-	0.02	0.8
2.11 Kadam	0.01	0.02	-	0.01	0.04	2.0
2.12 Jarul	-	0.01	0.01	-	0.02	1.0
2.13 Other (Nim, Gab, Pitraj)	-	0.01	-	-	0.01	0.6

Source: Hussain et al. 1988.

## **2. Livestock and Poultry**

Domestic animals at the homestead, including cows, buffaloes, goats, sheep and poultry (chickens, ducks, and pigeons), are an integral part of agricultural activities in rural households. Rearing these are family based activities and women as part of the family have an important role to play from the initial investment to the consumption and marketing of the animals and animal products. Livestock are owned mainly by women and used to supplement the family diet and earn extra income. Generally in most households, they keep the animals for economic purpose, particularly for making a personal income more easily than sewing or other off-farm business.

Among the determinants of livestock ownership, farm size is probably the most prominent. According to the World Bank (1990), referring to a BARI survey, it was found that on an average, landless households owned at least a cow or a calf. On the other hand large landholding families, owned at least three to four cattle per family. In case of poultry, at least three to four locally breed birds were owned by almost all rural households; the numbers growing with increasing land size. In general, bullocks and cows used mostly for the purpose of ploughing, are owned by households with landed property. For draught animals, ownership is usually of the family as a whole.

Women in male-headed households own more animals than those in female-headed households (Safilios-Rothschild and Mahmud 1989). One study found that most landless women rear poultry to meet basic subsistence needs. It also gives quick and often regular economic returns. Medium farm households tend to rear poultry both for income and consumption. The study also states that large farm households raise these birds mostly for consumption and sometimes as a hobby. Regarding poultry products, according to a BARD study, 51 percent of the total production of duck eggs were used by the farmers own consumption, 32.7 percent were sold and 16.3 percent were used for hatching. In case of chickens, most were consumed followed by hatching and selling (39.3%, 37.2% and 23.5% respectively). It was also observed that small farmers sold more while the big farmers were more inclined to hatching. This suggests the intensity of need for cash income in small households compared to the bigger households.

Women in poor households try to supplement their income by hiring-in animals, usually goats, or on occasion poultry, from better-off families on a share basis. For cows, the owner and keeper share the offspring equally. For bulls, a value is placed on a young animal and then the keeper cares for the animal until maturity. When the animal is sold, the owner and keeper share the value added (Lilly 1987).

Whether the women look after cattle and goats themselves is often dependent on the household's social position. Women in richer families bound by social traditions are not in a position to go out in the fields to graze their cattle. In middle income families while the women themselves may not take the cattle to graze, their children often help. For landless and land poor families there is little restriction except probably the restriction of grazing land. For instance as found in Kalapara, few landless farmers owned cattle primarily because of the absence of grazing ground. On an average, women are responsible for almost all

management practices and operations like shed cleaning, feeding and taking care of the cattle and goat production.

Women manage the poultry as well. Looking after the poultry is mostly home-based; women's labor here is mainly in the area of cleaning coops and feeding. One study claims that on an average women spend 1.12 hours per day in poultry raising activities. The study thus found that of a total working day of 10.74 hours, a rural woman spent 10.34 percent of her time in poultry raising. Another more recent study conducted by BRRI (Banu et.al.1990) shows that women spend 44 days per year on an average in poultry rearing assuming a 8-hour working day. From our own field observations carried out in Kurigram district, discussions revealed that women spent 1.16 hours each day looking after the poultry. Most of these belonged to the small or marginal farm households. In Kalapara also, records show that most households owned 9.8 and 4.9 chickens and ducks respectively.

### 3. Fisheries

Fisheries in Bangladesh play a major role in the national economy. Besides supplying high quality protein to the people, it absorbs about eight million people including the subsistence fishermen either directly or indirectly (CIRDAP 1988). According to the Bangladesh Fishery Resource Survey System an average of 1.18 persons per rural household are involved in subsistence fishing equivalent to 12.3 days per month (Choudhury 1987). It generates substantial export earnings (15 percent) and contributes about 3.6 percent to the GDP (Hussain 1988).

In fishing communities, the male population make up the out-door working members of the household. Women's work in fisheries traditionally has been confined to making and mending fish nets, drying nets and other maintenance and support services. In some areas, they are also involved in fish processing. Statistics reveal that 30 percent of the rural coastal women are engaged directly or indirectly in fisheries (CIRDAP 1988). Recent research carried out on flood plain and pond fishing shows that women are substantially involved in an extensive range of activities- net making, preparing dye for tanning nets, fish capture, salting, drying and storing fish, and marketing fish ( Lilly 1989). In addition, women take an active part in household decisions concerning fishing, including those pertaining to the excavation and leasing of water bodies, the purchase of boats and nets, and catching, storing, and selling of fish (World Bank 1990a). A 1988 BARD study (Hussain) revealed that on an average 7.6, 18.8, 4.6, 3.4 and 2.2 percent housewives helped their husbands in pond fish cultivation, looking after, selling fish, arrangement of credit and fingerlings respectively. In reality there are regional variations on women's participation in fisheries (Table 10). However because of their dispersion, these activities are rarely recorded in official catch and consumption statistics.

**Table 10: Women activities as found in different study areas (% of participating women)**

Waterbody	Net making	Boat-keeping	Fish Processing & drying	Gear equipment maintenance	Others
Meghna Fishery 15	-	-	-	25	-
Meghna-Nayabhangni	20-25	20-30	-	10-35	-
Narisha Padma	40-45	25	35	10	10
Padma-Jamuna Balbant fishery	40-50	10	-	15-25	10
Baluhar Haor	65-70	15-20	-	35	-
Kharincha Baor	15-40	10	-	20-40	20
Kannadah Haor	10-45	-	-	15-40	40
Simulia Haor	40	-	-	15-25	-
Kanglar Haor	60	15	35	25	10
Karchi Nadi	10-20	-	-	15-25	20
Roail Beel	40-45	-	-	15-35	10
Arial khan	50-70	20-40	-	30-45	-

Source: ADAB News, January-February, 1990.

A study conducted in Chittagong by the Bay of Bengal Project adopted a participatory approach to raise women's income through varied activities. This included among others, fish farming, drying and marketing. Although little income was generated, the project enabled fisherwomen to analyze their position, work in groups and discover their own potentialities.

Recent figures have shown that while aquaculture contributes 2.5 percent natural fisheries make up 97.5 percent of the total fish production in Bangladesh (Hussain 1988). Therefore using small ponds and engaging in small scale fisheries seem a viable prospect. This suggests that women will become more prominent in fisheries and that there is considerable scope for increasing women's participation in the fishing sector. In this case, it is worth mentioning that while the number of full-time fishermen has declined from 54 to 24 percent, the number of women involved in the dry fish business has increased from 6 to

28 percent. A parallel shift has occurred as well in male and female participation in cooperatives tied to fishing. Fishermen's cooperatives have become inactive, whereas women have formed cooperatives (MSS). Loans from BRDB have been extended to 57 percent of these women for fresh and dry fish marketing and for net and boat purchase (Hye et al. 1987). Another successful example which can be used as a guideline for future projects is the case of 16 destitute women taking lease of a pond for five years for Tk. 3000. They cleaned the pond, put in fish fingerlings and gave proper feed. After three years, their net profit was Tk. 8000.

#### IV. CONSTRAINTS TO DEVELOPMENT

Women's role in agricultural production cannot be ignored in the study of economic activities. Uptil now focus on women's contribution to agriculture has been extremely biased. Moreover their access limits them to acquire knowledge, obtain essential services and overcome gender specific constraints to labor force participation. The World Bank notes that this has several implications for women:

- \* it generally isolates women from institutional support;
- \* it gives rise to unsustainable extension networks to service women;
- \* it fails to analyze the impact of technological change both positive and negative, on women.

Women are affected by socio-economic inequalities and class interests. Men in general control the major resources supported by a strong patriarchal cultural tradition. This defines a different set of economic mobility for women (purdah) thus denying them access to many opportunities and productive services and creating a rigid division of labor by sex. By circumscribing their participation in visible social roles, purdah limits women's participation within the household only (Feldman and McCarthy 1984).

However the demands of a rapidly growing population and the pressure of increasing landlessness is placing increasing stresses on the customary social organization and traditional culture of Bangladesh. A direct consequence of this is that women's economic participation is gradually becoming broader causing strains on the restrictive customary gender division of labor. This is true not only for female headed households but also a necessity for other women whose households cannot totally depend even subsistently, on the income of the male member alone. In consequence, the interpretation and observance of purdah has come to take a different meaning under the present circumstances. Purdah norms can therefore possibly be retained by households who have excess labor or can afford to have them, as well as a strong and secure economic base.

Interviews with some village women showed that they were engaged in a wide range of activities not necessarily within the precincts of the home. In fact in Kurigram, they were also engaged in field based agriculture like transplanting and weeding. Many women are also reliant on selling whatever skills they possess and this often means finding work as daily labor. During field visits in Kalapara, it was found that many women were even engaged in doing road works. In other words, it can be said that the links between agricultural production and the supporting ideology of purdah has brought about new productive relations necessitating new ideological support (Feldman and McCarthy 1984). Thus the static portrait of a woman confined within the homestead is rapidly changing.

In spite of these changing shifts agricultural programs involving direct participation of women are sporadic. This is mainly because institutional support in the form of credit, inputs, training and access to information is so minimal that women can hardly maintain a material base for themselves or an agriculturally productive base in general. This also hampers them in organizing themselves around shared issues. Some of the major constraints are identified

here; they do not offer prescriptions but present issues and measures that should be considered while formulating plans for women's development.

## A. ACCESS TO RESOURCES

### 1. Land

The basic form of property in rural Bangladesh is land, to which women have little access. Muslim inheritance law gives women right to inherit the property of father, husband and son (BARC 1990); there is also provision in civil law that adult women in Bangladesh have right to own property. In reality however, the lack of enforcement of property rights perpetuates women's dependence on men. The property rights of women are in fact constrained by tradition and existing power structure. Thus even in cases of ownership of property women do not claim parental property because in adverse situations (divorce, separation or widowhood) they are dependent on their brothers to provide them with the necessary social security. In case when they do claim property, the right of possession in fact goes to the husband. Thus it is only a question of changing hands- it does not bring any substantial change in a woman's life. They thus continue to suffer from a lack of social security.

### 2. Credit

Several factors restrict women's access to formal credit. Primarily, they cannot avail it or are not eligible since they cannot provide the necessary collateral requirements of financial institutions. Socio-cultural constraints, lack of skills and absence of providing tangible securities against loans often constrain the communication between women and banks. Also collateral requirement is often in the form of land. This on the one hand implies that women seldom qualify since land is mostly owned or controlled by the male; on the other involving the male would mean continuation of dependence on men over the means of production as well as for decision making. Credit giving is also hampered because financial institutions are often reluctant to give loans for small scale income generating activities. This is because credit processing is time consuming and loan recovery often do not conform with the income turn-overs of the funded activities (World Bank 1990a).

## B. ACCESS TO SERVICES

With regard to services, there is little institutional support in the form of extension, training and input supply for women. In agriculture production where they are participating extensively, women hardly have any access to new information, technology, improved variety of inputs (eg. seeds or vaccines) or to resources that may increase their productivity and income. Many of these technologies and information could benefit women farmers if they are made available to them. Instead the resources are often misdirected to men.

The Department of Agriculture Extension (DAE) has a large number of extension workers- among them 404 are female block supervisors comprising only a small cadre of the total extension staff (Sallilos-Rothschild and Mahmud 1989).

Consequently the extension agents, both men and women have been unable to reach the large number of women engaged in agriculture (World Bank 1990). The women because of their small numbers and the men because of their traditional social restraints in talking to a woman. This was clearly evident during field visit to two FSR sites in Tangail- Balukandi and Kandila. In the first village, the block supervisor being a female, had succeeded in motivating twenty five women farmers to adopt the FSR approach. In the other village, the extension workers were all male-only four women farmers were contacted and that too very recently with the joining of a new female extension worker. It is clear that inspite of homestead gardening being primarily a women's domain, where services were not suitable, the benefits were all going to the men. Thus women are denied knowledge of new innovations and information .

Lack of supportive training, both human development and essential agricultural skills and management training also hinder women development. Recent statistics of BRDB show that among their women cooperative members only 2.3 percent had ever recieved agriculture based training such as in homestead gardening, poultry raising and fisheries. In general, lack of training fails to empower women for collective decision making, hampers their organisational and management capabilities and hinders utilization of their credit more productively.

### C. ACCESS TO MARKET

Women are also restricted over having direct control over the profit of their produces. This is primarily because they are constrained socially and culturally to actively participate in commercial activities. Women are dependent on men for marketing- either on their husbands or other male family members or on the local middlemen. Both effect women's welfare. In case of husbands the women have little control over the money; in case of the middlemen the prices are sometimes so low that hardly any profit is generated. In a study of women's participation in rural markets (Rashid 1987) the findings revealed that most of the organisations surveyed agreed that women's participation in markets was necessary to develop their entrepreneurial skills as well as ensure better control over their earnings. Some felt that participation was also necessary to reduce the influence of middlemen over women's products. Women's corner in the market as found in a RDRS project in Kurigram gives food for thought for bringing changes for women's participation in markets. BRAC's experiments with setting up women's corner in market places have demonstrated that women can freely participate without any social inhibitions. Success of projects often depend on women's ability to market their produce with an oppurtunity to control their income.

## V. OUTSIDE INTERVENTIONS

Interest in women, particularly rural women, started growing in the early 1970's. With the declaration of the UN Decade for women in 1975, there was a growing awareness on the counter productive effects of ignoring women's contribution to development. Soon, organizations with objectives as diverse as the World Bank, UN bodies, government agencies, as well as national and international NGOs were all incorporating women's issues into their broad policy framework. As a beginning, they tried to provide women with opportunities for:

- \* expanding their education and levels of awareness;
- \* facilitating better health care and family planning services;
- \* increasing their access to productive resources and services;
- \* equipping them with appropriate knowledge and technologies.

Gradually donors have developed a general policy in supporting or initiating programs involving women. These policies generally acknowledge that both integration and special measures are required to ensure women's full participation in development assistance programs. In other words, activities directed towards women are often part of larger projects involving general sectoral development. Thus to facilitate resource mobilization and broaden the production base, rural women have been re-discovered by the national government as well as by most international agencies (Feldman and McCarthy 1984).

To date the most successful programs are those with a focus on production, though the target beneficiaries reached have been small. Family planning services and programs have always been on a larger scale--both in terms of reaching a larger proportion of the population as well as in terms of funding. Because of the limited success of traditional family planning programs recently, they have been linked to production activities.

Whatever the characteristics of each program, most have revolved around five interlocking components: mobilization, organization, training, input provision and system management. The World Bank for instance, within the scope of its three principal projects; population, rural development and education has (among other things) supported formation of rural cooperatives and training of women teachers. The basic goal of World Bank has been a shift in focus of agricultural development towards small holder farmers with an increase in their productivity, income and output. One such project financed by the Bank and organized by the Bangladesh Rural Development Board (BRDB) is the Intensifier Homestead Production project involving 150 women in three upazillas. Women's involvement here include growing vegetables, fruits and seedlings, bee-keeping, livestock and poultry rearing and fish cultivation. For capital, the women use their own weekly savings while BRDB is responsible for giving the training support. Since these women are extremely poor, most of the produces are consumed; only when excess, they are sold. Marketing is the responsibility of the women themselves.

UNICEF too focuses on intensive training in programs of health, education and rural credit. Its technical assistance, services and training support to Grameen Bank is an example.

USAID in general incorporates WID issues into the mainstream projects with goals of fertility control, greater agricultural productivity and increased rural employment. In very specific cases, USAID has directed funds exclusively to women. One case which this approach has supported is the Women's Entrepreneurship Development Program of BCSIC.

Most bilateral donors also follow the same approach- incorporating women's issues into their mainstream development activities. Some like CIDA while following this policy orientation, also concentrates specifically on women as in its population programs I, II and III. Other donors like DANIDA, SIDA, NORAD earmark a portion of their generalized loan funds for integrating women in development programs. The intent is generally to strengthen the interest in women on the part of the recipient government.

#### **A: NGO INTERVENTIONS: BRIEF PROGRAM REVIEW**

NGOs are regarded as alternative delivery systems with strategies and programs for institution-building, self employment and functional education. They mainly do direct action-oriented projects; sometimes they combine it with research (Nag 1988).

In Bangladesh, NGOs are either target group oriented or follow an integrated group approach. The first addresses specific groups (maybe only women's group); the latter focuses on whole communities or groups irrespective of gender differentiation and often with homogenous characteristics. One consequence of the target group approach is that it works against the consolidation of rural interests, setting women against men, small farmers against share croppers and so on.

Almost all NGO's take the initial step of motivation and group formation for a specific goal. Towards this end, group members are encouraged and supported to take up different social and economic action programs. Among the national level NGOs, BRAC, Proshika, Nijera Kori adopt more or less the above approach. Most of these and possibly also the smaller NGO's have significant female membership; 54 percent of BRAC, 37 percent of Nijera Kori, 33 percent of Proshika and 26 percent of RDRS membership are women (Rothschild and Mahmud 1989). Grameen Bank has however the best record, with 84 percent women members in their group. Being one of the largest programmes providing institutional support to rural poor women, it is targeted to households owning less than 0.5 acres of cultivable land. Employment generation for the women loanees of the Grameen Bank has been quite significant; 92 percent of the women loanees reported a rise in income levels after joining the bank (Rothschild and Mahmud 1990). Half of these loans were used for agriculture production including crop cultivation, livestock and fisheries. Joint ventures on leased or share-cropped land as well as the collective purchase and use of shallow and deep tubewells have also been some of the most important activities of the

women loanees. The Grameen Bank has also recently provided loans for the traditional use of rice husking through 'dhenki'.

## 1. Major Trends

The basis of most projects are income-generating activities (IGA) with some focus in other areas like education, family planning and preventive health care. Credit facilities are being given emphasis. Group formation is the backbone of such nature of projects. Some have goals of awareness-raising while others have specific economic goals (Grameen Bank). Organizations like BRAC, Proshika are in between. Almost all of them go by the idea that women are not "a specific interest issue" but participants of gender neutral macro policies and program. As such their target groups are both men and women.

Many of these organizations have succeeded in savings mobilization; others have helped beneficiaries in teaching new skills as well as upgrading existing ones. Many start with limited but well defined objectives and later gradually diversify (BRAC). Others confine themselves to their more limited goals without going in every direction. The advantage of group activity is that, on the one hand institutional and production costs can be reduced and on the other, complementary activities such as training and marketing can be more effectively organized.

## 2. On-farm, Non-farm and Public Works Projects

These are self-help projects. Most are village based programs providing loans, giving seeds, imparting training on increased productivity of crops and better care and output from livestock or fisheries. Where women form the target groups, the focus is mostly on improved use of homestead garden and efficient management of animal husbandry. The common objectives of these projects are increased nutritional uptake, home consumption leading to expenditure savings and an additional avenue for income. CARE's bio-intensive gardening project, though not specifically targeted to women, addresses the problems of family nutrition, limited land for production and limited resources for off-farm inputs.

Until recently almost all non farm small industries projects were confined to traditional handicrafts. While their quality have been low, the market has also become saturated. A few (BRAC, Kumudini) have some quality control and more or less an established marketing channel. Organizations like MIDAS, show promising avenues for setting up small industries in general as well as for women entrepreneurs. In public works programs, some NGOs have institutional linkages with the government and works in collaboration with them (e.g. RDRS, CARE). These are mostly international.

The efforts described above are no doubt encouraging. However, there is greater need for increased investment for empowering women through related training. Thereby they can not only overcome their stereo-typed sex roles but also be better equipped to utilize the credit and the profits in a more sustained manner.

## B. Selected NGO's in three site visits

A brief summary of some NGO's is presented here. They are operating in the field sites visited for study purposes.

### 1. Sylhet--Friends in Village Development in Bangladesh (FIVDB)

Established in 1971, this organisation is presently working in 212 villages with a target group of about 40,000 men and women. Their groups are primarily village based. The criteria for group membership are

- \* households owning less than .40 acres of land
- \* household members who are willing to sell their manual labor
- \* households who cannot produce more than four months consumption of rice.

Their main focus is on organisation building; functional literacy and credit is also provided. Presently they have about twenty on-going activities, which include among others, duckery, horticulture, pond fishery and micro-dairy. Since they have been working in the area for the last ten years, the groups are now almost self-sustaining. However there is need for appropriate support structure, including the banking support for a longer time to come (See Annex 2).

### 2. Kalapara--Caritas and Community Development Centre

During 1987 Caritas started it's Disaster Follow-up Program (DFP) in six unions of Kalapara upazilla. Small landholders (about 20 percent) and the landless (about 40 percent) are included in the DFP of Caritas. In each village where they are working, groups of male and female are formed with 15-30 members in each group. Often preference are given to those families where both husbands and wives are interested to join the program. Every member is given training on the occurrence of cyclone--like what are the security measures to be taken during cyclones and how to preserve food for the post--cyclone period. Besides being given some basic knowledge on social analysis (social strata, social obligation and position) the women are also given training on crop production, homestead gardening and plant protection measures. Besides, many of them are involved in cottage industry including jute handicrafts and coir making. It also implements program under which both male and female laborers are involved in earth works, construction of embankments and roads and installation of tubewells. Caritas involves all it's members in a program of social forestry in which each member is provided with 4-5 seedlings free of cost.

The Community Development Centre is a national NGO which has begun operation in Kalapara only recently. Households with below 60,000 asset value are their target groups. Group formation was the first step of the project; it took quite a few months mainly because the villages are not only very remote but also very scattered. Credit and training support are given to whole fishermen families. Weekly village meetings and savings form the core of the program. While the men are involved in fish catching, the females are making nets or processing the fish, mainly salting hilsa.

### **3. Kurigram--Rangpur Dinajpur Rural Service (RDRS)**

This organisation has one of the most comprehensive programs for women in this area. Starting with group formation and functional literacy, the organisation provides agricultural training and extension programs for women. Raising their awareness on the optimal use of local resources, the women are trained on the efficient use and management of homestead crops including livestock and fisheries. Seed storage at farm level and setting up nurseries are also part of their program package. Interestingly they also motivate women in the production of field crops through facilitating them to lease land on a group basis. The groups are backed by input support, an effective agriculture extension and follow-up.

## **VI. DEVELOPMENT POTENTIAL**

This section reviews prospects for intensification in field-based and homestead production, focusing on post-harvest activities, homestead cultivation (including forestry), livestock, and fish culture. Potential projects are identified and, where data are available from site visits or Rapid Rural Assessments in Sylhet, Kalapara, and Kurigram, specific constraints are discussed. Overall there is a strong need not only to intensify output in these sectors, but also to diversify the resource base of the farm household. Policies and research to support rural agribusiness may prove to be an important element in strengthening the economic position of rural women, particularly for those who are landless or land-poor. As such, possible agribusiness links are noted.

### **A. AGRO-PROCESSING**

#### **1. Prospects For Intensification**

As the data in Tables 4 and 5 (section III) show, operations other than husking (threshing, winnowing, soaking, parboiling and drying) make up less than half of the labor required for paddy processing. If new technologies are introduced they must have a high labor productivity if they are to compete successfully with traditional technologies (Abdullah 1985). It seems likely that new technologies for winnowing, parboiling, and drying operations would, however, have less of a negative impact on hired female laborers. Traditionally, hired labor has only contributed 14 percent of the labor requirements in each these phases of paddy processing (Ahmed 1982).

#### **2. Agri-business Links**

Ahmed's (1982) study shows that families who traditionally specialize in paddy husking benefit from the introduction of mills, since they are able to handle larger volumes of paddy in their processing business. Paddy processing enterprises focus on various phases of the operations between harvest and sale of polished rice. Households in Kurigram District have taken up rice processing as a source of income generation; buying threshed paddy from the market, processing it (husking usually is done at a nearby mill), and selling it locally. In this case the women of the household are involved in soaking and parboiling and drying the rice. Hossain (1990) estimates that the homestead based rice husking business generates between 5250-6500 Tk. net income during a 10-12 month season. Abdullah, however, notes that paddy husking brings low returns (cited in Saffios-Rothschild 1989). Puffed rice (muri) and pressed rice (chira) are well established value-addition activities pursued by women in certain regions of the country and it may be that they could be encouraged in other areas. However, market studies are needed in order to assess their profitability in generating income.

In addition to these traditional value-addition activities, women are expanding their operations in relation to field crops. Working individually, Kurigram women are involved in peddling cereals they have processed. Unhusked grains

are bought from the market, processed, and sold door to the door in the village. Kurigram women also are forming cooperatives and pooling their savings to lease land and cultivate rice (hiring men to carry out the field preparation). The women's group then harvests, threshes, and winnows the paddy and sells it to the market. Jute and sugarcane also are cultivated under these cooperative land-lease ventures. In another innovative undertaking Grameen Bank has extended loans to groups of poor women (with membership varying from 30 to 40) to purchase rice mills. The capital investment ranges between Tk. 21,000 and Tk. 30,000, most of which is credit from the bank (Abdullah 1985; Safilios-Rothschild 1989).

### 3. Problems and Issues

In paddy processing women from middle/large land-holding households have benefited from the introduction of mechanized milling since they no longer have to carry out the processing operations themselves or supervise hired labor, but the impact of the introduction of mechanized rice milling on land-poor women depends on whether they have been able to find work elsewhere. In some cases, such as in the Kalapara area, women have found work in the rice mills, cleaning the husked rice. They are compensated by being allowed to take rice broken in the milling process (1 to 1.5 kg., sometimes 2 kg/day), in addition to being paid Tk. 2.5/day. Although there are 25 rice mills in the vicinity of Kalapara, they seem unable to take up the slack in female unemployment. Women are migrating to urban areas in large numbers and those who stay behind, observing they have few options, feel compelled to accept work on road maintenance projects.

Most of the research on the post-harvest phase of paddy production--assessing the impact of mechanized rice mills, along with some attention to the significance of post-harvest losses (judged negligible)--was carried out in the late 1970's and early 1980's. Since then there has been little attention given to these issues. It is not clear at this time to what extent mechanized milling has replaced home-based husking. Researchers at BRRI's Grain Quality and Nutrition Division are encouraging women to continue using the dheki for rice-processing since it yields a product of higher nutritional value, particularly in protein. One recent study indicates that 75-78.8 percent of landless, marginal, small, and medium farm households still use the dheki to husk rice and 37.5 percent of large farm households continue to use the dheki (Hussain et al. 1988). This figure is surprising given the common perception that the use of the dheki, and so women's involvement in rice husking, is rare. Without an accurate assessment of women's actual work in post-harvest processing (for paddy or for other field crops), there is little basis for arriving at reliable estimation of the value of women's labor in field crop production, gauged in either monetary or time-input terms.<sup>7</sup> The impact of technologies which increase production also need to be evaluated for its impact on female employment.

These brief observations suggest that women are exploring new options for income-generation in post-harvest operations. Substantive research in this area is now a decade out of date. There is a need for a critical reassessment of the post-harvest phase of food production on a country-wide basis.

## B. HOMESTEAD GARDENING AND FORESTRY

### 1. Prospects For Intensification

Evaluations agree that homestead land is underutilized. An example of this is given in Tables 11 and 12 comparing cooperators and non-cooperators in research carried out in Kalikapur (Islam and Ahmed 1987). Both government institutions (eg. BARI, BRDB) and NGOs (eg. MCC, CARE) are undertaking projects to support the intensification of vegetable and fruit production. Some of these interventions incorporate a forestry component as well (eg. BFRI's research on bamboo propagation and CARE's Bio-intensive Gardening project).

Table 11: Information on yield of vegetables and spices by farm category at FSR site, Kalikapur, Ishurdi.

#### Cooperator Group

Kinds	Average yield (t/ha)					
	Landless N=12	Marginal N=8	Small N=8	Medium N=6	Large N=6	Average
<b>Vegetables</b>						
Amaranthus	3.1	3.21	5.1	4.2	3.8	3.7
Spinach	4.2	3.1	4.2	3.2	3.2	3.6
Radish	20.1	25.2	40.3	35.1	30.2	28.9
Tomato	7.1	6.1	8.2	6.1	5.1	6.7
Cabbage	25.2	25.2	30.3	23.2	25.1	25.9
Brinjal	22.3	22.1	25.1	21.1	20.2	22.3
Okra	3.1	2.3	5.1	4.2	4.1	3.7
Data	20.1	14.1	15.1	14.1	20.1	17.0
Bitter gourd	2.2	2.1	4.1	3.1	3.1	3.2
Bottle gourd	4.2	5.2	6.2	4.1	5.1	4.9
Sweet gourd	5.1	6.1	7.1	6.2	3.1	6.0
Potato	-	-	20.1	15.2	15.1	17.1
Cauliflower	6.1	9.2	10.1	11.1	10.1	8.9
Turnip	20.1	22.6	25.1	18.1	20.1	21.3
Musk Melon	10.1	12.1	20.1	12.1	11.11	12.9
<b>Spices</b>						
Garlic	6.1	4.2	10.1	8.2	7.2	7.0
Onion	9.1	10.1	12.1	9.1	8.1	9.8
Turmeric	15.2	13.3	18.1	12.2	12.1	14.5
Chilli (Kancha)	2.5	2.5	4.1	2.6	2.7	2.9
Coriander	0.3	0.3	0.5	0.3	0.2	0.3

Source: Islam and Ahmed (1987).

Table 12: Information on yield of vegetables and spices by farm category at FSR site, Kalikapur, Ishurdi.

Non-cooperator Group

Kinds	Average yield (t/ha)					
	Landless N=25	Marginal N=7	Small N=11	Medium N=9	Large N=8	Average
<b>Vegetables</b>						
Amaranthus	2.1	2.0	3.5	2.9	2.5	2.5
Spinach	2.5	3.1	2.9	2.1	2.5	2.9
Radish	10.0	21.2	28.5	28.0	2.5	19.4
Tomato	4.2	5.2	7.1	4.2	5.4	4.9
Cabbage	15.5	21.1	27.5	19.1	21.1	19.6
Brinjal	18.5	19.1	21.5	22.2	22.2	20.2
Okra	2.1	2.1	3.6	3.5	3.5	2.8
Data	13.1	12.1	20.4	10.5	18.1	14.6
Bitter gourd	2.3	3.2	2.9	2.5	2.5	2.6
Bottle gourd	2.6	4.2	4.5	3.5	4.2	3.5
Sweet gourd	3.5	5.2	6.5	4.5	5.5	4.7
Potato	-	-	14.5	12.0	13.5	13.4
Cauliflower	5.1	8.1	7.5	8.5	8.2	6.8
Turnip	12.1	20.1	18.1	12.5	15.1	14.6
Musk Melon	7.5	10.2	15.5	10.2	9.5	9.9
<b>Spices</b>						
Garlic	5.2	3.1	8.1	6.1	4.1	5.5
Onion	7.1	9.0	10.0	6.1	7.0	7.7
Turmeric	10.1	12.1	13.0	11.1	12.2	11.3
Chilli (Kancha)	2.5	2.5	3.5	2.2	1.0	2.6
Coriander	0.3	0.3	0.4	0.3	0.3	0.3

Source: Islam and Ahmed (1987)

The objectives of vegetable and fruit intensification projects are first to improve the level of household nutrition (especially in vitamins and minerals) and secondarily to generate income through the marketing of surpluses. These objectives are compatible with current pattern of use. Over 80 percent of the fruits and vegetables now grown are consumed by the household. About 11 per cent of the fruit and 14 per cent of the vegetable production are sold (Table 13).

Table 13: Quantitative disposal pattern of Fruits and Vegetables grown in homestead by farm category.

Farm category	Average percentage of total product					
	Fruits			Vegetables		
	Consumed	Sold	Distributed	Consumed	Sold	Distributed
Landless	88.0	7.2	4.8	85.0	12.2	2.8
Marginal	78.0	15.3	6.7	80.5	13.3	6.2
Small	79.6	10.9	9.5	74.5	18.4	7.1
Medium	78.1	12.8	9.1	80.3	12.3	7.4
Large	77.6	11.2	11.2	82.2	11.8	6.0
All	82.0	10.6	7.4	81.0	13.7	5.3

Source: Hussain et al. (1988)

The forestry component of homestead cultivation is a new area of concern in Bangladesh and one that holds great potential for restoring areas denuded of tree cover and improving the resource base of rural people. Homestead forestry, including nursery work and tree planting has been a traditional activity of rural women, working alone or with their husbands. In addition, women and children collect fuel and fodder for the household use, or in the case of very poor women, for sale.

The intensity of homestead crop production can be affected by the availability of markets. One recent survey reports that in villages with access to markets about 26 percent of the homestead space is given over to horticulture in contrast to villages without access in which only 6 percent of the homestead area is utilized (World Bank 1988).

There is evidence that technical interventions also have a significant impact on the effective utilization of homestead land, even though these interventions are not targeted specifically to improvements in this sector. One study shows that in villages with high rates of adoption of improved cultivation practices (high yielding seed varieties, irrigation, and fertilizer) women from landholding households are more active in homestead horticulture than similar women from villages where adoption rates are low (Solaiman 1988). Another study indicates that where women have gained access to technical information, credit, and improved seed through the formation of women's groups organized as part of NGO or government programs, their involvement in homestead crop production increases (Feldman and McCarthy 1984).

An evaluation of social forestry efforts in Bangladesh suggests that projects targeted on the homestead are more likely to be successful than those directed toward establishing plantations--due to reduced ambiguity concerning the allocation of benefits (Asaduzzaman 1989). However, social forestry projects, whether directed toward the rehabilitation of public or private lands, can incorporate local labor in nursery, planting, and tending operations. As such they have the potential for expanding rural employment opportunities. One initiative (Rangpur and Dinajpur Rural Service Project) has employed poor women as caretakers for trees planted in strip plantations (Task Force 1987).

## 2. Agri-business Links

Two areas have special growth potential in homestead vegetable and fruit production. The availability of improved seed and seedling is a major constraint in intensifying production. In a recent survey over 80 percent of the farmers identified this as a major problem (Table 14). Our brief field visits corroborate this. The development of homestead based nurseries could generate income, while helping to meet the need for improved varieties. In the Kasba area farmers involved in homestead production projects are choosing to move into this area of intensification unprompted by project supervisors.

If fruits and vegetable production is successfully intensified, farmers will turn increasingly to the market to dispose of surplus production. Right now the market seems able to absorb at good returns to farmers all the surplus fruit they are able to produce. In the future if production is increased, seasonally abundant surpluses may prove to be a problem. Technologies for fruit drying offer prospects for stabilizing and augmenting the farmers' return. For the consumer, the availability of dried fruit would help to assure more adequate nutrition year-round. Drying of fruit could be carried out at the homestead, but considering the need for capital outlays, this might be more profitably pursued as a village or neighborhood cooperative venture.

Table 14: Constraints in Tree and Vegetable Plantation in Homestead by farm category.

Constraints	percent of respondent					
	Landless	Marginal	Small	Medium	Large	All
1. Lack of improved seeds/seedlings	69.3	90.0	91.3	91.4	91.7	80.6
2. Lack of technical knowledge	41.7	45.6	52.4	53.4	55.4	48.4
3. Conflict with neighbor (disturbance of poultry, cattle, tenurial right, etc.)	19.1	17.8	13.3	17.2	18.8	17.8
4. Land problem	8.5	11.1	4.8	5.2	-	7.0
5. Lack of money	7.5	6.7	9.5	6.9	4.2	7.4

Source: Hussain et al. (1988)

### 3. Problems and Issues

Although homestead production in the past has been the domain of women, as households lose access to field crop land or as fruit and vegetable production becomes more profitable, it is likely that homestead production will become increasingly attractive to men. The displacement of women in a traditional area of expertise will undermine efforts to improve household welfare over the long-term. Project and extension workers can help avoid marginalizing women by offering training on intensive technologies directly to women. The case of FSR sites in Tangail illustrates this point. In one village where the Block Supervisor was a woman she provided training on intensive homestead production to 25 participants--all women. In another village, the first block supervisor was a man. He also brought together 25 participants, but in this case only two were women. It seems clear that information on new technologies should be conveyed directly to women rather than assume, as project workers often do, that the knowledge will eventually filter from the men to the women.

## **C. LIVESTOCK AND POULTRY**

### **1. Prospects for Intensification**

In Bangladesh, recently many organisations are supporting livestock raising programs. For instance, skill development training and credit for livestock and poultry are given by CIDA (Population Project 111), BRDB and DLS, IFAD, ADB and UNICEF. Proper feeding practices, community vaccination programs and training local women in vaccination techniques are often part of the program packages. An evaluation of the Grameen Bank credit program has shown that many self-employed women were engaged in milk cow raising and cattle fattening. Most popular among the bank's activities were livestock raising showing a rise from 45 percent of loans disbursed in 1983 to 55 percent in 1986 (World Bank 1990). However it has often been found that in many cases, women have little control over the income from the sale of livestock/poultry. This is due to the fact that marketing of livestock products and by-products are usually done by husbands, male members or middlemen leaving women little scope to enjoy the profit of their production.

Field visits in Sylhet revealed that poultry seems to have good potentialities for development. Most of the households owned and raised chickens or ducks in their homesteads. The marketing structure also seemed to be quite smooth for selling the eggs. One NGO (FIVDB) particularly seemed to have a very successful duckery project on-going. Here they are promoting a new variety of ducks (Cherry Valley 2000) which has the advantage of thriving in tropical climate. No special feed is needed for them; they forage for themselves on snails and earthworms. Forty thousand ducklings can be produced in a year without the facilities of electricity and incubator. People here show interest in this breed of ducks. Women particularly show interest as it means that some income can be generated while in the homestead and doing simultaneous household activities.

In Kalapara, compared to livestock, poultry (chickens and ducks) are more common. Records from 1983 ( Patuakhali District Statistics) show 9.8 chickens and 4.9 ducks per household. Small and marginal farmers own most of these. The same records show that they own 17.9 and 5.7 chickens and ducks respectively. It is therefore clear that poultry raising is popular here thus indicating scope for women's increased participation . Duck raising particularly seems feasible because of the huge number of water bodies all around.

Using the experience from such efforts and to overcome such problems for intensifying women's participation in this area, several steps have to be considered:

- \* training women in proper livestock rearing
- \* providing support services like credit and inputs
- \* providing women with direct marketing channels.

## 2. Agri-business Links

Depending on the regional characteristics, cattle can be used mainly for draft power; cattle fattening is a good prospect in some areas. In case of mono crop growing areas (eg. aman crop) the cattle is often sold off before the rainy seasons. Particularly in case of goats, fattening and selling at higher price seems a good prospect. Potentialities exist for increased use of the by-products from livestock, like milk and making cheese and butter.

Poultry products, especially selling eggs bring quick and easy returns. Individual household expansion of raising poultry is possible. Also commercial production while still limited, has good potentials once resource constraints and availability of other inputs become less of a problem.

## 3. Problems and Issues

Representing 7.8 percent of the total agricultural output, traditionally, livestock has received less attention and input than many other sectors. Though in the farming systems it is often considered secondary to field crops, agricultural development is highly associated with the development of this sub-sector. It is a common activity carried out by all levels of farmers, marginal and landless included. Therefore development of this sector would mean benefit for a large segment of the rural population particularly the women.

The Directorate of Livestock is responsible for disseminating extension messages on livestock and poultry. They have however not been very effective in reaching large number of farmers let alone women. Often this is due to distance (as found in Kalapara) as well as due to the lengthy processes of providing institutional support in the form of credit or training. Supplying improved breeds, quality feed and providing various disease control measures also hamper livestock development strategies. Field visits in Sylhet showed that though poultry raising appeared to be quite a profitable enterprise for many, diseases hampered extensive growth. The regular frequency of providing vaccination was often missing.

In Kalapara, the scarcity of land has possibly precluded livestock development among majority farmers. There are few milching cows; most are used as draft power. Diseases are mainly endemic; worm infestation and foot and mouth disease restrict greater livestock rearing and production. Calving rates are also low possibly because of low nutritional levels. Though extension services are supposed to reach with veterinary care, in practice this is often lacking mainly because of the remoteness of the areas.

There are also problems of livestock keeping in certain areas like flooded or haor areas. Regarding the problem of raising poultry, diseases often were the major obstacles. In some cases even though households were aware of vaccination, the frequency of vaccinating were not always followed. This was clear from one of the women talked to. She had raised quite a significant number of chickens and vaccinated them; however she did not apply the next course of vaccines after a three-month period. Likewise in Kalapara it was found that in addition to scarcity of land, livestock rearing was difficult because of excessive flooding on one hand and too much salinity on the other. In fact, there is a

dearth of information regarding variations in poultry keeping in terms of landholding, regional variations, management and marketing and cost-benefits.

#### D. FISHERIES

##### 1. Prospects for Intensification

Several research institutes ( BARI, BFRI, BAU) are working in collaboration with the Fisheries Research Institute in Mymensingh to identify fish technologies that will among other things (Farming Systems Newsletter April-June 1990):

- \* develop technologies for small scale fishing
- \* develop farming systems combining agriculture, aquaculture, and livestock;
- \* involve rural women in fishing business.

BRAC's effort with simple fish farming technology using Tilapia (*Oreochromis niloticus*) fingerlings and rice bran as fish feed has been transferred to 304 farmers using 309 ponds. In six months the net profit was Tk. 92 per decimal with an initial input of Tk. 52 for each decimal. Most encouraging was the fact that among them 32 percent farmers were women. Broadly speaking, to be effective, an innovation must be locally relevant, locally specific and rooted to the community's resources and needs.

Some organisations working in Sylhet were thinking of an integrated fish farming project having duckery, poultry and fishing as integrated components. There is focus on women and it is expected that for many women this will be part of their primary income source.

Visit to Barlapunji village in the tribal areas of Sylhet showed that dry fish eating is extremely popular here. Most dry fish is marketed in from Chittagong. Scope for fish drying need to be studied here.

In Kalapara upazila, many households are involved in catching baby shrimps. The main areas where these are done are Latachapli, Nilganj, Lalua, Chakamulya and Mithaganj. The peak seasons are from February to May. On an average one person can catch about 500 such baby shrimps per day. When sold, these pass through many hands. Catchers sell them to the hawkers between Tk. 10-30 and by the time it reaches the final hand the price goes up to Tk. 80/kg. In one sense marketing is hardly any problem here since the buyers come to the source as far as from Mongla in Khulna and Rampal in Chittagong. In another sense, the channel of middle men lowers the price of the catch. Though the area visited itself did not have any fish processing done, discussions revealed that in adjoining areas there was some salting and smoking of hilsa fish being done. Primarily the women were doing this. Women's involvement in direct marketing here can be studied further so that women have a better control over the income from the fish processing.

Joint ownership of water bodies make pond fishing difficult. Individual small scale pond fisheries seem difficult at this point mainly because of organisational, management and operational problems. It may be possible through forming

fishermen's women's cooperatives depending upon the willingness of the owners as well as on the ability to organize them, train them and provide them with other support services.

A visit to one project in Rajarhat upazilla of Kurigram showed that women were coming forward in direct fish cultivation. This is possibly because RDRS with its comprehensive training and extension program for women has essentially been successful in organizing the rural poor women and providing them with related institutional support. Taking lease of a pond in a group with an initial investment of Tk. 3000, in two years time the group has already made a profit of Tk. 4000. With this amount they were able to further lease some crop land in which they have presently cultivated jute. They were also planning to grow trees on the pond embankment.

In another remote village of a char area in Ulipur upazilla of the same district (Begumganj union), some women were found to be drying fish. Discussions revealed that during the rainy seasons, there is an excess of fish from the surrounding rivers Dharla and the Brahmaputra. The market being saturated the price at this time goes down - being as low as Tk. 8-10 per kg. for medium sized fishes. As such many households bought or caught the fishes and sun-dried them for selling at higher prices in off-seasons. The women were seen to be responsible for drying- the children often helped. Thus in Kurigram it appears that whether in fish cultivation or in processing, there is considerable scope for increasing women's participation in the fishing sector.

## 2. Agri-business Links

Value added prospects for fishing depends a lot on increased production. Fish feed is one of the principal inputs; small scale feed mills can be set up. Pilot projects can be taken on fish processing and fish preservation. These can include fish drying, salting, smoking, fermentation and fish paste making. Other possible areas can be fish canning and processing of fish meal.

## 3. Problems and Issues

Obstacles to fisheries development are numerous. Most common are improper fishing practices, inadequate support facilities, conflict over property rights and inadequate water uses (BARC 1990).

Ownership of ponds is a major problem in fisheries. A recent BARD study shows that 62.6 percent of the small ponds had joint ownership with a similar figure also for large ponds. Field visit to Kalapara also confirmed this. Though there were numerous ponds and ditches in the area, most of them remains unutilized or under utilized, primarily because too many people, often as much as twenty own a single pond.

There are however regional variations affecting not only women's participation here, but also the process of fish culture in general. For instance in Sylhet, it was found that in spite of being a haor (water logged area), there is recently a growing shortage of fish here. Discussions revealed that this is mainly because big business people take lease of these areas and dry them up to increase the

catch. This hampers the growth of the mother fish resulting in decreasing quantities of fish for the market.

Another problem is that of the lack of enough feed and the absence of hatcheries. In Sylhet this was clearly evident; in spite of extensive haor areas most of the fishes were caught before the proper growth period. This resulted in decreasing fish quantity for the market and in the absence of hatcheries, the problem was getting more acute. Experience of some organisations working there also revealed some of the problems of pond fishing. Among others such problems focussed on the production limitation because of:

- \* acidity of soils
- \* shortage of food

As producers the fishermen and women are also dependent on the middlemen since marketing facilities often do not exist where they normally reside in the remotest corners. Moreover spoilage during the peak seasons is also often a problem. Lack of proper storage facilities, lack of transport and lack of purchase are some of the factors for this. Since there are about 1.6 million derelict ponds waiting to be harnessed by the productive energies of the rural poor efforts need to be made to overcome the above constraints. Training, provision of required inputs and technology support combined with necessary policy support can help to overcome the problems to a large extent.

1. For South Asia in general the under-enumeration of women in the labor force is attributed to inappropriate definitions and changes in these definitions between census years, the use of second-hand sources for questionnaire responses, a failure on the part of female respondents to recognize the productive role they play, and the higher social status associated with a non-working wife (Nayyar and Sen (1987). Khan (1988) points out that rural Bangladeshi women carry out most of the productive activities within the household for which no records are available. In addition, she notes there is an absence of stable wage employment. People engage in part-time work, work for short durations, or do multiple work simultaneously.
2. Definitions of "direct" and "indirect" economic activities are not consistent between studies. In some cases a "direct" activity refers to those that earn cash or payment in kind and an "indirect" activity refers to expenditure saving work. Using this definition the same task would be categorized differently depending on whether or not a women is compensated for the work. In other cases "productive" work is distinguished from "domestic." In Bangladesh this leads to confusion since much of the agricultural work done by women is carried out in the homestead. This results in a tendency to categorize many "productive" activities as "domestic." Because of these inconsistencies in definition, research results are not always comparable. A more useful breakdown is employed in the recent Agriculture Sector Review survey sponsored by UNDP and UNIFEM. In this case agricultural activities are defined as indicated in Table 2.
3. Farm size is broken down into seven categories, but designations for farm size are not used consistently in the monograph. The ranking of women's involvement in farm employment by farm size in acres is as follows: 47.6% (0.05-0.49); 40.8% (landless); 40.4% (0.5-0.99); 37.5% (0.01-0.04); 36.8% (1.00-2.49); 18.0% (2.50-4.99); 10.0% (5.00-over).
4. The categories of work distinguish agriculture on own land from agricultural labor, homestead agriculture and work caring for livestock and poultry.
5. Legal or de jure women heads of households are widowed, divorced, abandoned, or single women who support themselves and their dependents.
6. Results from field surveys carried out in Kurigram on labor input in paddy post-harvest processing ranged widely from 0.80 person-days/maund to 7.16 person-days/maund. Given the variance in the estimates and the fact that there is little correspondence between these data and those presented in in-depth studies, we find little to recommend the data as a reliable estimate of actual labor input. However, the data are useful in underlining the problems in

collecting data on labor input retrospectively. Inspection of the women's responses also suggests which activities women are likely to overestimate their labor time (eg. parboiling), but this should be corroborated by actual observation. Women are not necessarily poor judges of their labor input. However they are focused on the crop processing activity itself and estimate labor time in terms of the amount of time for the operation to be completed, not the actual time they spent directly in carrying out the operation. Even with a stopwatch in hand it is probably just as difficult for women to disaggregate simultaneous and overlapping activities as it is for observers to.

7. Goldschmidt-Clermont (1983) notes all evaluations of non-market production start with the measurement of physical quantities. In a survey for ILO on evaluating unpaid household labor she develops a typology based on two criteria for grouping evaluations: the units used for measurement and the angle from which the evaluation is approached (input or output). Methods for evaluating unpaid labor can be grouped into four main categories as follows:
  1. Volume of inputs
    - inputs in time (hours of work)
    - inputs in workers
  2. Volume of output
    - in various units, according to activity
  3. Value of inputs
    - wages
    - returns to labor in other activities
  4. Value of output
    - price of equivalent market product

In the case of post-harvest processing, measurements of women's labor time (Tables 4 and 5) and volumes of crop processed (undetermined) are needed to arrive at appropriate estimations of the value of unpaid female labor in these phases of production.

## ANNEX 1

### INDICATORS OF WOMEN'S SOCIO-ECONOMIC STATUS

**Table 1: Age-specific fertility rates per 1000 women by residence, 1980-87**

Year	TFR per women	Age groups						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
<b>National</b>								
1980	4.99	121	243	228	195	127	60	25
1981	5.04	133	275	238	167	130	47	19
1982	5.21	122	269	254	193	129	57	19
1983	5.07	91	267	271	193	134	44	11
1984	4.83	103	255	235	182	130	42	19
1985	4.71	89	258	246	180	113	42	14
1986	4.70	85	265	247	177	110	40	15
1987*	4.41	86	247	243	161	105	31	10
<b>Rural</b>								
1980	5.13	126	250	230	201	133	61	25
1981	5.28	141	290	248	174	135	48	20
1982	5.50	130	285	266	203	135	61	19
1983	5.36	97	284	284	204	143	47	10
1984	5.08	108	268	248	192	137	44	21
1985	4.91	94	266	255	186	118	46	15
1986	4.89	91	275	258	184	114	41	16
1987*	4.64	94	259	256	167	110	31	10
<b>Urban</b>								
1980	3.97	88	200	210	137	74	42	23
1981	3.20	76	176	163	108	78	34	4
1982	3.01	60	155	161	113	71	26	4
1983	3.45	61	176	189	135	86	26	17
1984	3.10	70	173	151	116	80	21	4
1985	3.52	63	193	181	138	86	29	14
1986	3.26	47	186	172	126	75	32	13
1987*	3.05	44	175	164	121	71	22	10

Note: \* Provisional

Source: Bureau of Statistics 1989. Statistical Yearbook of Bangladesh. Ministry of Planning, GOB.

**Table 2: Age-Specific Mortality**

Year	Sex	Infant Mortality/1000 Live Birth	Child death rate/1000 children (1-4 years)
1987	Both	111.0	12.5
	Male	120.0	11.0
	Female	99.0	13.9

Source: Bureau of Statistics 1989.

**Table 3: Nutrient Intake (person/day) by Different Age and Sex group as per 1981-82 Survey.**

Age in year	Energy (Kcal)		Protein (gm)		Calcium (mg)		Iron (mg.)	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Children (both sex)</b>								
1 - 3		659		16		122		8
4 - 6		1245		31		184		16
7 - 9		1575		40		233		20
	Male	Female	Male	Female	Male	Female	Male	Female
<b>Adolescents</b>								
10 - 12	1912	1745	47.7	42.5	219.5	245.6	24.2	21.4
13 - 15	2327	1973	58.1	49.0	300.6	307.2	29.2	23.8
16 - 19	2828	2198	69.7	55.0	373.4	297.5	32.9	24.7
<b>Adult</b>								
20 - 39	3154	2254	79.2	65.0	390.2	294.8	35.9	27.0
40 - 49	2955	2115	74.5	53.2	437.3	264.9	38.4	25.2
50 - 59	2791	2114	71.9	52.3	427.9	308.4	35.1	24.3
60 - 69	2810	2134	69.4	52.2	401.1	328.0	34.2	24.5
70 +	2776	1830	70.6	45.4	368.6	282.7	32.0	22.7

Source: Ministry of Social Welfare and Women's Affairs 1988. Situation of Women in Bangladesh.

**Table 4: Population Indicators**

Total population:	110 million (1990)*
Average annual growth of population:	2.4 (1988-2000)*
Female population:	53.3 million (1989)***
Other indicators:	
Age structure (0-14 years):	44.7*
Age structure (15-64 years):	52.1*
Crude birth rate per 1000 population:	40 (1988)*
Crude death rate per 1000 population:	15 (1988)*
Women of child bearing age as percentage of population:	46*
Total fertility rate:	5.5 (1988)*
Infant Mortality rate per 100 live births:	118*
Risk of dying by age 5:	175 (female)* 160 (male)*
Labor force Participation:	8 percent ** 75.5 percent **
Daily wage rate of agricultural labor (Tk. per person per day, 1984-85):	22.6 (male) 11.2 (female)

Sources: \* World Bank 1990. World Development Report.

\*\* Labor Force Survey 1984

\*\*\* Planning Commission 1990. Memorandum for the Bangladesh Aid Group 1990-91. Dhaka.

## ANNEX 2

### FIELD SITE OVERVIEW

#### FSR Site visit: Tangail

One of the premises of FSR is a planned system of vegetable production. It aims to:

- \* improve nutrition;
- \* use homestead land more effectively;
- \* produce profitable sequence of vegetables that can be grown throughout the year; and
- \* open avenues for women's participation.

To see briefly how far the above goals are actually being implemented in practice, two villages in Tangail -- Balukandi and Kandila were visited. In the first village, there are about 25 women farmers under the FSR program. One female block supervisor is responsible for providing guidance and supervision to these women. The homestead vegetable farming system started here around April, 1990. There were some initial resistance of forming these groups. The female block supervisor had to make home visits every day to motivate the villagers to use their homestead plots for vegetable growing according to some prescribed rules. Some families already grew vegetables or fruits - but in a somewhat disorganized way. The home visits first raised suspicion -- many thought it was a government effort to take away their land for other development purposes. Gradual persuasion motivated them somewhat - but they still thought that the relevant department would take half of the production generated. Later, it took about six months to motivate the villagers towards the FSR goals. The block supervisor felt that in countering the initial resistance to the homestead gardening project one important factor was that she was a local woman from a nearby village. She reassured them that she would be at hand to assist them if they encountered problems. The 25 women farmers are the first group of households who were motivated. This seems to be the only criteria for their selection plus a genuine interest for the program.

Most homestead gardens visited in this village have amaranths -- lalsak - okra - amaranths or amaranths - lalsak - okra- gima kalmi growing. Gima kalmi particularly seemed to have grown abundantly. Most vegetables have been harvested recently -- the spinach had been damaged by the early rains.

At the beginning, almost all vegetables were consumed by the respective households. More recently, they have begun to sell any surplus vegetables through middlemen. Though women have access to the income from the sale of these vegetables, the money is almost always used for household items/need or for the children's welfare. One woman showed the brass bowl and spoon she had bought for Tk. 70, the proceeds from one month's sale. Another mother confided that whatever she had earned until now, had gone for treatment of her year old child's diarrhoea and skin disease.

In the second village the program started a few months earlier (November 1989). Here also 25 contact farmers have been grouped, but in this case only four are women. Queries revealed that initially a male block supervisor did all the motivation work. His contacts were naturally the male farmers -- therefore in the first group there were only two women farmers. The motivation work took less time here -- about a month. This may possibly be because of the following reasons:

- \* men were reaching men to whom the land actually belonged;
- \* men generally try to have control over women's time, income, and labor.

As a result they are hesitant to allow new openings and channels for women participation.

The first assumption, applicable in the second town resulted in more men as cooperator farmers. Recently, the recruitment of a female block supervisor along with the male, is beginning to show changing trends. Already two more female farmers have replaced two male farmers who showed an obvious and gradual lack of interest in continuing in the program.

#### **FSR, Kalkapur: Experience From Field Visits**

The homestead production system in Kalkapur started in 1983 with 40 women as cooperator farmers. The objective was:

- \* to meet home consumption needs;
- \* to increase the nutritional uptake;
- \* to generate savings; and
- \* to productively utilize labor .

However, since income generated from these was not very significant (about Tk. 800 - Tk 1000/year), a new approach has been considered. This includes that besides vegetable production, quick growing fruit trees (papaya, banana etc.) will also be planted. The Kalkapur Homestead Vegetable Production Model has been replicated in 40 Upazilas.

The visit to Kalkapur showed that most of the cooperator farmers for homestead vegetable farming systems, belonged to the small farm category (owning about 33 decimals of land). The cropping pattern is comprised of the following combinations of vegetables, planted in rows:

Pattern	1.	Lalsak (red spinach) - Lalsak-Indian Spinach-Radish-Tomato
Pattern	2.	Okra - Brinjal + Lalsak - Lalsak
Pattern	3.	Amaranthis - Radish + Spinach - Garlic
Pattern	4.	Gima Kalmi - Lalsak - Batisak - Onion - Bitter gourd.
Pattern	5.	Lalsak - Brinjal - Lalsak - Cabbage

These are grown in a prescribed plot of 6m x 6m. From discussions it appeared that the average return per decimal of land is more for marginal and small households, as the labor input here is more intensive than in large farm households. Some studies carried out in this area indicate that while small farm

households grow more vegetables, large and medium farm households are more inclined towards horticulture.

Visits to a few farm and informal interview with some women cooperator farmers revealed that all of them participated in land preparation (to a limited extent) fertilization, weeding, watering, storing, and fencing the vegetable plots -- a pre-requisite of FSR. Harvesting of vegetables were also almost exclusively done by the women.

Deeper enquiries with two women farmers showed that both belonged to the 25-30 age group and had passed primary school. Initially, both the households brought vegetables from the market for their consumption. Now whatever is grown is sufficient for their use and only occasionally they buy some other variety of vegetables not grown in the garden. One of the women has surplus vegetables grown; the other coming from a bigger household (11 members) grows only sufficient to meet daily household needs.

Both the household have to buy rice from the market. Fruit trees common in both households were guava, mango and jackfruit. Ripe jackfruits are very popular; while a few are for own consumption, most are sold in the market. Unripe jackfruit are eaten as vegetables; but since the price of a ripe jackfruit is high (Tk. 25 - Tk. 35), its use as vegetable is occasional.

Both women have an interest in poultry, including chickens and pigeons. Chickens usually are raised for household food needs; young pigeons are normally sold.

A research report of May 1990 of the On-Farm Research Division (OFRD) show that the total production of vegetables is highest in pattern 1 described earlier (68 kgs). The lowest production was found to be in pattern 2 (33.9 kgs.). Surprisingly yet, cropping pattern 2 was seen to be practiced in both farms visited. Also results of a survey showed that 38 percent of the farmers did not like "Batisak" a variety of spinach. Visit to one of the farms also confirmed this. In spite of this, the seed distribution of batisak was continuing.

Overlooking certain limitations, it is however, encouraging that women now are beginning to have access to production inputs, technical assistance and extension service.

An example of one successful case is Majeda Parvin. She is 33 years old and an active member of one of the farms of Kalikapur FSR site. Previously, the only earning member of their household was her husband. He works in Rajshahi about a hundred kms. away. Besides looking after their 2 school going children, she is almost totally responsible for all household maintenance.

The only land they possess (33 decimals) consist of the built up area of their house and the 6m x 6m homestead gardening plot. In the prescribed 5 rows/beds she grows seasonal vegetables. At the time of visit there were 2 types of spinach and okra growing. Until very recently, all the vegetables grown were for their own consumption. Now, when there is a surplus they sell some of the vegetables through middlemen coming to their doorsteps. As such, the marketing process is not a problem for her. The homestead gardening has

motivated her to use all available space for productive purpose. Just on their courtyard adjacent to the kitchen, she has planted varieties of 'cucurbit' (vegetables like gourd, pumpkin). She herself made the bamboo "macha" (trellis). She also takes a keen interest in raising the two cows, poultry and pigeons they have. While most of the chicken eggs are for their own consumption, the young pigeons are almost always sold. A pair can cost up to Tk. 20 - 25. The cowdung is used as fertilizer.

Recently, the on-farm research division has approached her as a 'contact farmer' to motivate her fellow villagers to adopt the methods and techniques of homestead gardening.

#### Summary:

It is an accepted fact that growing population threat has inversely affected the size of landholding in Bangladesh. Increasing landlessness is bringing about two changes.

- \* Intensified production on available land;
- \* Increased womens' participation in development.

The homestead gardening program is one of those systems taking advantage of both changes. If not an extremely lucrative income source, it is indeed a promising avenue for improved nutrition as well as expenditure savings. However, a major drawback is that, supporting organizations have not done much to develop marketing channels.

Field visits have shown that to reach women, there is great need for female extension workers. Wide difference in female participation is evident in the absence of female workers. Also men appears to throw a "smoke screen" -- in declining to let women become actively involved they create obstacles by showing their distrust for the program itself. Women's involvement can have lasting values only when it is accompanied by changes in access to resources and land or any other factor that maintains gender inequities. It would indeed be an achievement if in the long run, homestead gardening opportunities allow women to invest in, manage and retain control over the profits of their activities.

## **ANNEX 3**

### **WID PROJECT CYCLE ANALYSIS: AGRICULTURE**

#### **I. WOMEN DIMENSION IN PROJECT IDENTIFICATION**

##### **A. DEFINING GENERAL PROJECT OBJECTIVES**

1. Are the project objectives explicitly related to women's economic and social roles?
2. Do these objectives adequately reflect women's needs?
3. Have women participated in setting those objectives?

##### **B. ASSESSING WOMEN'S NEEDS AND OPPORTUNITIES**

1. What needs and opportunities exist for increasing women's productivity and/or production?
  - a. In agriculture?
  - b. In household production?
  - c. In human capital production?
  - d. In the informal sector?
  - e. In wage labor?
2. What needs and opportunities exist for increasing women's access to and control over resources?
3. What needs and opportunities exist for increasing women's access to and control over benefits?
4. How do these needs and opportunities relate to the country's other general and sectoral development needs and opportunities?
5. Have women been directly consulted in identifying such needs and opportunities?

##### **C. IDENTIFYING POSSIBLE NEGATIVE EFFECTS**

1. Might the project reduce women's access to or control of resources and benefits?
2. Might it adversely affect women's situation in some other way?
3. What are the potential effects on women in the short run? The longer run?

## II. WOMEN'S DIMENSION IN PROJECT DESIGN

### A. PROJECT IMPACT ON WOMEN'S ACTIVITIES

1. Which activities will the project affect in:
  - a. agricultural production?
  - b. household production?
  - c. human capital production?
  - d. informal sector production?
  - e. wage labor production?
2. Is the planned component consistent with the current gender denomination for these activities?
3. If it plans to change women's performance of activities, is this feasible, and what positive or negative effects would it have on women?
4. Where there are no planned changes in activities, is there a missed opportunity for improving women's roles in the development process?

### B. PROJECT IMPACT WOMEN'S ACCESS AND CONTROL

1. How will each of the project components affect women's access to and control over productive resources such as:
  - a. land
  - b. water (domestic and agricultural)
  - c. capital
  - d. credit
  - e. agricultural technology
  - f. household technology
  - g. firewood and other fuels
  - h. information
  - i. rural wage markets
  - j. resources in the informal sector
  - k. their own labor
  - l. the labor of others
2. How will each project component effect women's access to and control over benefits such as:
  - a. wages
  - b. revenue from sale of goods
  - c. revenue from sale of services
  - d. subsistence goods
  - e. social insurance (care in sickness, old age, etc.)

3. How can project design be adjusted to increase positive effects and eliminate or reduce negative ones?

### **III. WOMEN'S DIMENSION IN PROJECT IMPLEMENTATION**

#### **A. ORGANIZATIONAL STRUCTURES**

1. Does the organizational form enhance women's access to resources?
2. Does the organization have adequate power to obtain resources needed by women from other organizations?
3. Does the organization have the institutional capability to support and project women during the change process?

#### **B. OPERATIONS AND LOGISTICS**

1. Are the organization's delivery channels accessible to women in terms of personnel, location and timing?
2. Do control procedures exist to ensure dependable delivery of the goods and services?
3. Are there mechanisms to ensure that the project resources or benefits are not usurped by males?

#### **C. FINANCES**

1. Are funding levels adequate for proposed tasks?
2. Is preferential access to resources by males avoided?
3. Is it possible to trace funds for women from allocation to delivery with a fair degree of accuracy?
4. Do funding mechanisms exist to ensure program continuity?

#### **D. PERSONNEL**

1. Are project personnel sufficiently aware of women's productive activities and sympathetic towards women's needs for resources and benefits? If not, is it possible to increase staff responsiveness through incentives and training?

2. Do personnel have the skills necessary to provide the specific inputs required by women in the project areas? If not, are training and/or additional staff possible?
3. Are there appropriate opportunities for female participation in project management positions?

**E. FLEXIBILITY**

1. Does the project have a management information system which will allow it to detect the effects of the operation on women?
2. Does the organization have enough flexibility to adapt its structures and operations as changes occur and new information is processed?

**IV. WOMEN'S DIMENSIONS IN FORMATIVE AND SUMMATIVE EVALUATION**

**A. DATA REQUIREMENTS**

1. Does the project's monitoring and evaluation system explicitly measure the project's on-going and end-of-project effects on women?
2. Are women involved in designating the data requirements?

**B. DATA COLLECTION AND ANALYSIS**

1. Are the data collected with sufficient frequency so that necessary adjustments could be made during the project?
2. Are the data fed back to project personnel and beneficiaries in an understandable form and on a timely basis to allow project adjustments?
3. Are women involved in the collection and interpretation of data?
4. Are data analyzed so as to provide guidance to the design of other projects?
5. Are key areas for further research on women's roles in agricultural systems identified?

Source: Cloud 1985

## **ANNEX 4**

### **TERMS OF REFERENCES**

**Two different TORs are appended. The first was included in Carmen Burch's contract with PacMar, Inc. and the second was included in Yasmeen Sabrina Rahman's contract with Checchi and Company Consulting Ltd.**

Checchi and Company Consulting, Inc.

(in association with PacMar, Inc./Uniconsult International/BARC/USAID)

Burch

### Proposal for Short-Term Local and Expatriate Consultants Project -388-0051

Date: 04.12.1989

Speciality : Women's Development  
Period Required : Six Months  
Starting date : March 10, 1990  
Justification : See attached Proposal  
Scope of Work : See attached proposal  
Submitted by : *Ali Mohammad*  
Ali Mohammad, Resident Consultant

#### Approval:

*Joseph J. C. Madamba*  
Dr. Joseph J. C. Madamba  
Team Leader  
Checchi & Company

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Dr. H. M. Rahman  
Executive Vice-Chairman  
BARC

#### Concurrence:

Dr. Ray Horton  
Project Officer  
A & F Division  
USAID/Dhaka.

## Women in Development: A Proposal for NARS

### Rationale

According to some estimates the total contribution by the women-folks in cultivation, post-harvest activities, marketing, and other agricultural related activities is between one-third to one-half. Any visit to the rural areas will reveal the visible participation of rural women side-by-side with their men in weeding, application of fertilizer/manure, threshing and husking, harvest of vegetables, spices, and fruits, animal care and raising of livestock as well as collection of milk, eggs, and other animal products, preparation of animal feed, fuel, and food for the farm families, drying and processing various agricultural products, and the list can go on for a myriad other activities. However, with all such valuable and vital contribution, like in many other low income countries, neither their contribution to the farm economy is appreciated nor they are rewarded in the monetary sense due to prevailing socio-cultural reasons. At the same time, there is a general lack of public/government programs to upgrade their skills and uplift their lot. Within the National Agricultural Research System (NARS) a review of on-going research activities and proposed projects by various agricultural research institutes (ARIs) indicates a total lack of attention to the women related issues or ways and means to increase their productivity and income. Yet, almost one-half of the rural/farm population is comprised of females who, as discussed above, play an important role in the agriculture sector, who have to be fed, clothed, and schooled, and who provide their labor to the sector. Recently, in recognition of the above concerns, the Government of Bangladesh (GOB) has given increasing attention to Women-in-Development (WID) issues.

### Purpose/Objective(s)

The focus of this proposal is on expanding the capacity of the NARS to incorporate research benefitting rural women directly rather than devoting resources to women in general or personnel related issues. The Agricultural Economics and Social Services (AESS) Division at IARI has taken initial steps in this regards with a special interest in nutrition, homestead gardening, vocational training, post-harvest technologies, and agro-processing technologies. It has also assigned one of its senior officers the responsibility of women-related issues with respect to the agricultural research system in the country. With the assistance of ARP-II Supplement Team and the AESS Division, this proposal has been developed which has two major but closely inter-related components:

1. Agri-business
2. Post-harvest activities

## Responsibility/Major Tasks

The potential scope of the proposed work is immense. As a neglected area, a lot is desired for real impact on the women development. For now, as sincere efforts are underway, in this proposal only fewer areas are addressed. However, it is stressed that the need for monitoring, evaluation, and follow-up of the proposed work should be undertaken. There is also a need to expand the scope of this work as its proposed duration ends in about three months time. Details of the two components of this work are as follows:

### Agri-business Rural Enterprises

The focus of attention here is on two major types of enterprises namely, family-based rural agribusiness enterprises which take into consideration the close family/cultural ties of Bangladeshis and the community-based rural agribusiness enterprises. The proposed work will provide valuable assistance to the current thinking by various donor agencies to support an agribusiness development cell in NOA.

The primary objective of this work is to develop the entrepreneurial potentials, especially of women, existing in rural Bangladesh viz-a-viz value addition opportunities, employment and income generation, and moving commodities from farms to market place. Other important areas are provision of credit facilities and rural infrastructure such as storage and transportation facilities.

The proposed work is also expected to provide outline for a training program in small-scale rural agricultural projects and agribusiness enterprises. Finally, monitoring, evaluation, and follow-up are also crucial to the success/sustainability of the proposed work.

### Post-harvest }

The emphasis in this work is on developing rural-base value addition opportunities. More specific tasks are:

- Conducting on-farm trials with women participation;
- Anthropological approach in adoption techniques;

Food preservation and processing;

Fish processing,

Rural credit;

Provide, for possible feedback, mechanism to farmers regarding commodity requirements to optimize processing value addition inputs;

Design training programs in nutrition, Child Care, Home Economics, processing and marketing of agricultural produce, and vocational training;

Monitoring, Evaluation, and Follow-up.

#### Deliverables

The work will provide two major output;

1. A minimum of three reports prepared by the consultants (Jointly prepared by the local and expatriate consultants), training outline, and other relevant handout materials;
2. Informed/trained manpower in the BARS

#### Venue(s)

BARC  
ARIs

#### Logistic Support

See the following section on Budget. Limited word processing/secretarial assistance will be provided the ARP-11 Supplement (Checchi and Company) office.

# ARP-II

## Agricultural Research Project-II (Supplement)

Checchi and Company Consulting, Inc.

(In association with ProMar, Inc./Uniconsult International/EATC/USAID)

Rahman

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Proposal for Short-Term Local and Expatriate Consultants  
Project -388-0051

Date: 04.12.1989

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Speciality : Women in Development  
 Period Required : Six Months  
 Starting date : March 10, 1990  
 Justification : See attached Proposal  
 Scope of Work : See attached proposal  
 Submitted by : *Ali Mohammad*  
 Ali Mohammad, Resident Consultant

### Approval:

*Joseph J. C. Madamba*  
 Dr. Joseph J. C. Madamba  
 Team Leader  
 Checchi & Company

*M. H. Rahman*  
 Dr. M. H. Rahman  
 Executive Vice-Chairman  
 BARC

### Concurrence:

Dr. Ray Horton  
 Project Officer  
 A & F Division  
 USAID/Dhaka.

## Women Participation in Agricultural Development

1

### Rationale:

The estimated total contribution by the women in farming-related activities such as cultivation, post-harvest activities, marketing, etc. is between one-third to one-half. Any visit to the rural areas will reveal the visible participation of rural women side-by-side with their men in such activities as: weeding; application of fertilizer/manure; threshing and husking; harvest of vegetables, spices, and fruits; raising of livestock, as well as collection of animal feed, milk, eggs, and other animal products; preparation of fuel and food for the farm families; drying and processing of various agricultural products; etc. However, with all such valuable and vital contributions, like in many other low-income countries, their contribution to the farm economy is neither appreciated nor they are rewarded in the monetary sense due to prevailing socio-cultural reasons. At the same time, there is a general lack of public/government programs to upgrade their skills and uplift their lot.

Within the National Agricultural Research System (NARS) a review of on-going research activities and proposed projects by various agricultural research institutes (ARIs) indicates an almost total lack of attention to the women related issues or ways and means to increase their productivity and income. Yet, almost one-half of the rural/farm population is comprised of females who, as discussed above, play an important role in the agriculture sector, who have to be fed, clothed, and schooled, and who provide their labor to the sector.

Recently, in recognition of the above concerns, the Government of Bangladesh (GOB) has given increasing attention to Women-in-Development (WID) issues. The Agricultural Economics and Social Services (AESS) Division at BARC has taken initial steps in this regards with a special interest in nutrition, homestead gardening, vocational training, post-harvest technologies, and agro-processing technologies. It has also assigned one of its senior officers the responsibility of women-related issues with respect to the agricultural research system in the country. With the assistance of ARP-II Supplement Team and the AESS Division, this proposal has been developed which has a focus on the post-harvest and value-addition opportunities.

## **Purpose/Objective(s):**

The focus of this proposal is on expanding the capacity of the NARS to incorporate research benefiting rural women directly.

The specific objectives are:

1. To assess opportunities/potentials for upgrading agro-processing activities;
2. To identify researchable projects; to support women participation in farm production and rural agribusiness enterprises;
3. To upgrade capabilities of the rural women for post-harvest and value addition activities to improve their employment and income opportunities.

## **Responsibility/Major Tasks:**

The potential scope of the proposed work is immense. As a neglected area, a lot is desired for real impact on the development of women, particularly in the rural area.

The emphasis in this work is on developing rural-based post-harvest and value-addition opportunities. Specific tasks are proposed as follows:

1. Review literature regarding WID, including initiatives undertaken by various donors; and prepare an updated paper showing the current situation. Based on the above, focus activities on post-harvest and value addition opportunities where women are either currently involved in or have a good potential to do so;
2. Estimate monetary value of women contribution in post-harvest and value-addition activities in three selected rural areas namely, Kalapara, Sylhet, and Kurigram;
3. Identify and describe briefly projects which will address chronic problems which constrain the full and efficient use of women resources in support of rural agribusiness enterprises;
4. Assess opportunities/potentials for upgrading/improving agro-processing techniques--post-harvest handling, commodity processing, and food preservation--in the rural areas;

5. Assess training needs and develop draft syllabi/curricula for training programs in home economics, processing and marketing of cultural produce)
6. Suggest Monitoring, Evaluation, and Follow-up systems for women programs relating to post-harvest and value-addition activities.

The two consultants will work jointly in all aspects of completing this assignments. However, the expatriate consultant will focus more specifically on tasks 1, 2, 4, 5, and 6 while the local consultant will complete tasks 2, 3, 4, and 6 above.

### **Deliverables:**

The work will provide two major outputs;

1. A minimum of three reports prepared by the consultants (Jointly prepared by the local and expatriate consultants), training outline, and other relevant handout materials; Report # 1 will include task nos: 1, 2, 3, and 4 above; Report # 2 will include task no. 5; and Report # 3 will include task no. 6. All three reports will be submitted at the end of the first, second, and third month, respectively.
2. Informed/trained manpower to the NARS (through wider interactions with the researchers);

### **Venue(s):**

NARC  
ARIS

### **Logistic Support:**

See the following section on Input. Limited word processing/secretarial assistance will be provided by the ARP-11 Supplement (Checchi and Company) project office:

**Inputs:**

**Consultancy**

Expatriate - three months

Local - three months

Per diem (120 days) at USAID rates

Transportation

    Local

    International

Material/Equipment

Report writing

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