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**WOMEN  
IN FARMING  
SYSTEMS  
RESEARCH**  
FATEH JANG

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**RURAL  
WOMEN  
IN FARMING  
SYSTEMS  
RESEARCH**  
**(FATEHJANG)**

by

Farzana Masood and  
Mahjabeen

**1989**

**Pakistan Agricultural  
Research Council,  
P.O. Box 1031, Islamabad**

**PARC**

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## FOREWORD

Rural Pakistan is a vast and diverse area. About 50% of the population is female. This constitutes an important component of farming systems in Pakistan. However, women's productivity is not shared by the economic analysis and statistical report. This is mainly due to the inadequate attention on their improvement. The FSR has incorporated a women component in its activities with a multi-disciplinary focus to devise appropriate technologies for the uplift of rural women. Such an approach provides opportunity for the Livestock/Poultry scientists and other specialists to work in collaboration with the female farmers at village level including the evaluation of site-specific technologies to improve the women's status.

The rural women component focuses on their development in resolving problems and developing skills. The information gathered in the proceedings is very useful in designing future strategies and programmes to improve the role of women in Barani Farming Systems.

As a result, the FSR/Women Project will be planned in all the provinces of Pakistan. These projects will include provincial and federal government agencies and the private sector. The programme provides a new thrust which will play a leading role in improving the welfare of rural women.

I would like to thank the participating scientists for producing the well documented and comprehensive publication. Special commendation is given to Ms. Farzana Masood who coordinated the entire exercise on the role of women in FSR. Efforts made by the Directorate of Publications, PARC in bringing out this document are also commended.



(Dr. Amir Muhammed)  
Chairman  
Pakistan Agricultural Research Council  
Islamabad

April, 1989

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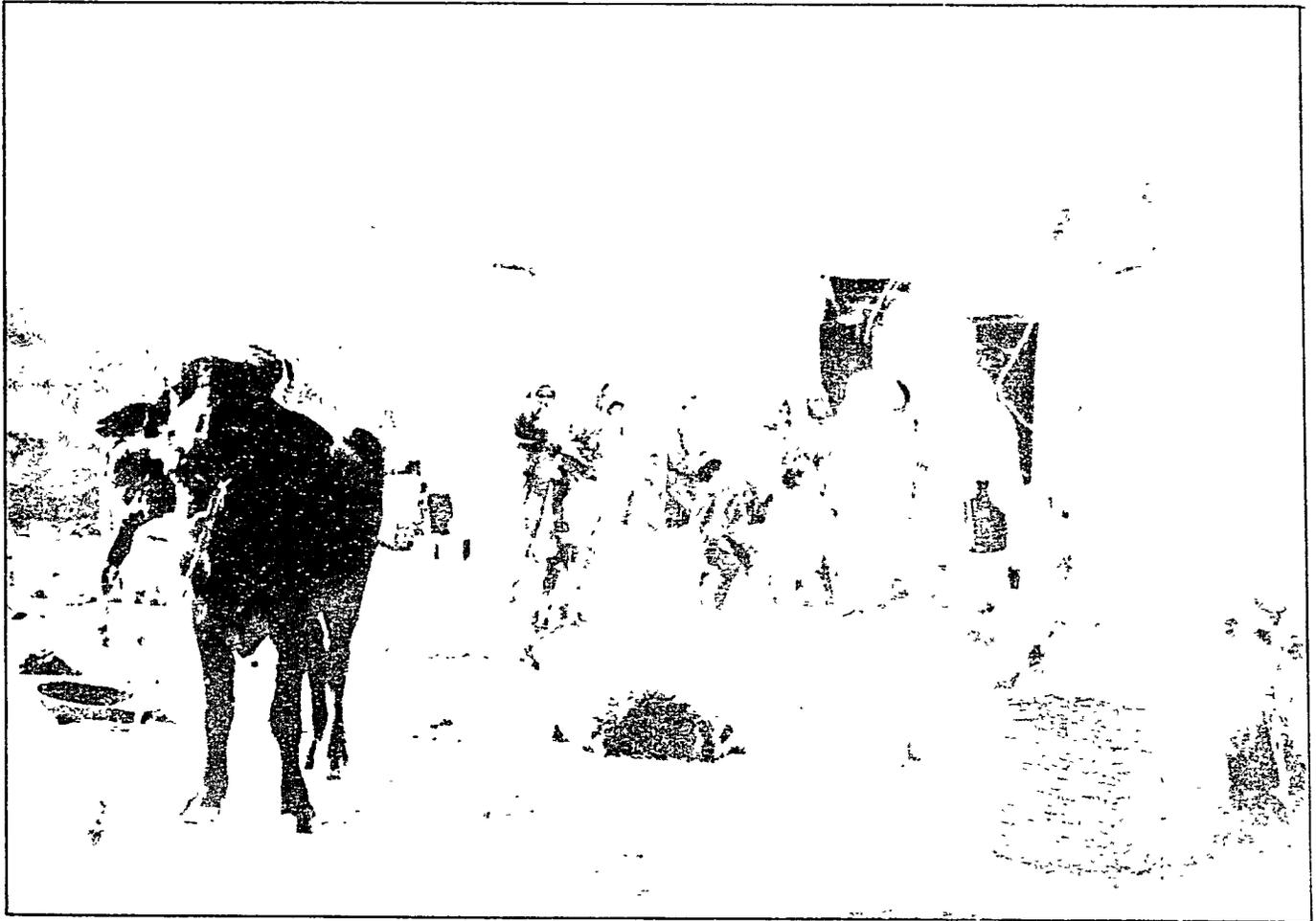
I would like to take this opportunity to express my deepest sense of gratitude to all those who participated in the informal survey as well as those who helped in the preparation of the proceedings.

Special thanks to Dr. Amir Muhammed, Chairman, PARC, who has encouraged the MART Project to incorporate and advance the women component in FSR activities. The generous assistance from USAID in supporting the MART Project is also acknowledged.

I wish to express my sincere appreciation to Dr. Abdul Majid and Dr. M. D. Dawson, National Coordinator and Advisor Farming Systems Research, respectively, for the able guidance, painstaking efforts, consistent encouragement and cooperation in all phases of this study.

My personal thanks are extended to my colleagues and fellows for their valuable ideas/suggestions in the accomplishment of the proceedings.

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## EXECUTIVE SUMMARY

An informal survey involving a multi-disciplinary team was undertaken from July 11-14, 1988 to:

- (i) involve rural women in the assessment of their problems and needs in agriculture;
- (ii) to integrate women's production and management strategies for identification of promising technologies;
- (iii) to suggest intervention in problem areas for their increased productivity in agriculture and introduction of income generating activities for women.

The study in general finds/suggests that in crop production, women share only those activities which are intended to help men but they are more extensively involved in the areas of their specialization such as weeding, fodder cutting and grain storage process. But their areas of participation are characterized with *simple and age-old technologies*. Women of this area are fully responsible for the management and maintenance of livestock activities. Women through their labour in various tasks i.e., production of animals, sales of animal products and by-products generate a sizable portion of the total cash income that most of the subsistence families earn. Women also decide about the earned income and the more they earn, the more decision making authority they have regarding the livestock and income expenditures. The average income earned by women in livestock production is greater than the average income earned by men in crop production.

Home crafts are made and sold by women as an acceptable form of off-form industry but it would have only little impact as there are no marketing facilities to retail the home produced crafts. Based on the observations and informal survey, the need and high significance of the potential contributions by the rural women in the farming operations are well established. Hence it deserves attention to upgrade their knowledge and skills in agriculture according to the technological development and modern needs of the marketing system. The following major interventions have been proposed for the up-gradation of rural women in Barani Punjab.

- Technology development and dissemination in all the areas of women participation i.e., crop livestock, poultry as harvesting, processing and preservation technologies.
- Site specific training and women extension service for the up-gradation of women's knowledge and skills in their areas of specialization like seed management, weed and pest control methods, disease control in poultry/livestock, use of pesticide and safety measures.
- Suitable marketing mechanism.
- Small women co-operatives for improving women's income generating activities.



## INTRODUCTION

The study of sex role in agriculture and its integration in the rural development process is a recently introduced subject in Pakistan. Major constraints may be the cultural system, traditional values and seclusion of women in muslim regions and then scarcity of data based on sex role. The national statistics always undervalue women's agricultural labour both in terms of hours invested and economic returns, even though their contribution sometimes exceeds than men.

In some type of agriculture in the less developed countries (LDCs) the unit of production (farming systems) and unit of consumption (farming household) are intimately linked and cannot be separated(8). The specific farming system adopted by a given farming household results from its members with their managerial know-how, allocating the three processes (crop-livestock and off-farm enterprise) in a manner with the knowledge that will maximize the attainment of their goals. The activities and services are designed to develop into extensive and micro level programme in the FSR target area. These are to be started with a downstream type of farming, the determinants of which have been shown in Fig 1, where focus is mainly placed on the farm family, which is jointly managed by the farm family unit (men and women)(9).

For those who do work, a slight improvement in economic or social status restricts them from agricultural work, a process called by some as "negative modernization". USAID and other agencies are trying hard to change the prevalent patterns in Pakistan, but cultural, structural and political factors are too old and strong to change quickly.

Here diagnostic stage of farming systems research (FSR) provides the necessary information about socio-economic and natural conditions, the existing farming systems, production practices and the major factors that limit the productivity of rural women in FSR. It not only facilitates the development of appropriate technologies and guides research but also aims to develop their adoption.

Amongst the successful examples of development efforts reaching rural women in Pakistan is the Aga Khan Rural Support Programme (AKRSP). This Organization has realized that women form an integral part of the rural economy and has adopted a 'learning approach'. The AKRSP recognizes that designing women's projects is a social process that must be learned by the beneficiaries themselves and those who assist them. Within a community, social organization can take place around profitable and equitable interventions and AKRSP has demonstrated that through these type of interventions women are a reachable means of upgrading human resources and skills. As a useful adjunct, the Operations Evaluation Department of the World Bank has pointed out to AKRSP that a farming systems approach focussed on the household would help further highlight women's role(10).

**ELEMENTS**

*HUMAN*

*TECHNICAL*

**FACTORS**

Exogenous

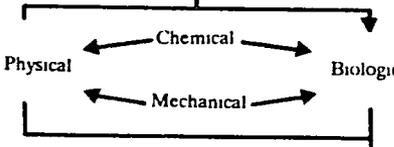
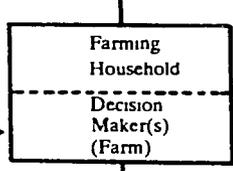
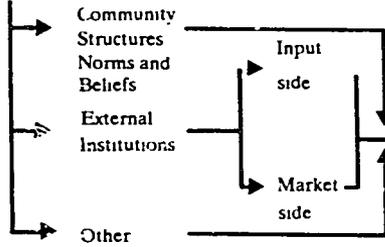
Endogenous

Physical

Chemical

Biological

Mechanical



Income

**INPUTS**

Land

Capital

Labour

Management

**PROCESSES**

Off-farm

Crops

Livestock

Farming System

*Broken lines represent results of farming system*

**Fig. 1. Schematic representation of some-determinants of the farming system**

The present study was undertaken in the Fatehjang target domains of Barani Punjab to understand the factors that promote and limit women's participation in farm operations like socio-economic conditions, involvement and absence of male labour force, gender-based division of labour, caste and class factors, family structure and others affecting women's role. The objectives of the survey are given below:

### OBJECTIVES

1. To involve rural women in the assessment of their problems and needs in agriculture.
2. To integrate women production and management strategies for the identification of promising technologies.
3. To develop a methodology/design a project for the uplift of rural women in the farming systems of barani area i.e., Fatehjang and Chakwal.

The problem statement and need to involve women in agriculture has been discussed in Chapter 2 and based upon these, the methodology regarding how the data for this presentation were obtained is given in Chapter 3. The Chapter 4 presents the major findings of the study. Chapter 5 includes constraints and problems of women in FSR along with suggested resolutions, and in the last, outline of four projects for women have been discussed and given in detail.

## WOMEN IN AGRICULTURE

### Status of Women

Based upon the existing literature observations, experience and informal survey, it is clear that rural women are active participants in crop farming, livestock husbandry, poultry keeping and the other agro-based and off-farm activities. In particular, women in barani areas, take a major responsibility in assuring that livestock products and by-products are used in farm-production and vice versa.

The female participation in crop production and livestock management operations in the Barani Farming System of Punjab(3), comparison of the percentage in different columns provide an excellent indicator of division of labour between men and women (Table 1 and 2).

**Table 1. Division of labour within households in crop production activities**

| Operation                     | TYPE OF LABOUR |        |            |              |          |
|-------------------------------|----------------|--------|------------|--------------|----------|
|                               | Male           | Female | Hired Male | Hired Female | Exchange |
| Seed Preparation              | 6.0            | 93.5   |            |              | 0.5      |
| Tilling                       | 76.7           | 0.1    | 23.3       |              |          |
| Sowing                        | 80.2           | 1.0    | 18.0       | 0.2          | 0.5      |
| Planking                      | 85.8           | 0.1    | 13.5       |              | 0.5      |
| Sealing                       | 86.4           | 0.3    | 12.8       | 0.13         | 0.4      |
| Collecting Farm Yard Manure   |                | 88.9   | 1.4        |              |          |
| Applying Farm Yard Manure     | 58.2           | 38.7   | 2.8        |              | 0.4      |
| Spreading Chemical Fertilizer | 96.5           | 0.6    | 2.4        |              | 0.6      |
| Taking Off Fodder             | 49.0           | 50.0   | 0.5        |              | 0.5      |
| Weeding                       | 47.8           | 46.9   | 3.4        |              | 2.0      |
| Harvesting                    | 53.9           | 32.5   | 4.4        | 2.2          | 7.0      |
| Binding (Wheat)               | 67.1           | 20.1   | 3.8        | 0.4          | 8.6      |
| Husking (Maize)               | 55.4           | 30.4   | 5.9        | 3.6          | 4.5      |
| Preparing Threshing Floor     | 88.1           | 9.0    | 1.9        |              | 1.1      |
| Threshing                     | 50.1           | 23.5   | 22.2       | 0.4          | 3.9      |
| Drying                        | 45.4           | 51.5   | 2.5        |              | 0.5      |
| On-Farm Transport             | 80.7           | 13.0   | 5.1        | 1.3          |          |
| Off-Farm Transport            | 93.4           | 5.2    | 1.0        | 0.4          |          |
| Selling produce to Agent      | 98.1           | 1.9    |            |              |          |
| Preparing Storage             | 26.7           | 73.0   | 0.3        |              |          |
| Storing Food for Home         | 32.5           | 66.2   | 1.0        | 0.2          | 0.2      |
| Storing Fodder                | 76.1           | 19.9   | 2.5        |              | 1.5      |

**Table 2. Division of labour within households in livestock operations**

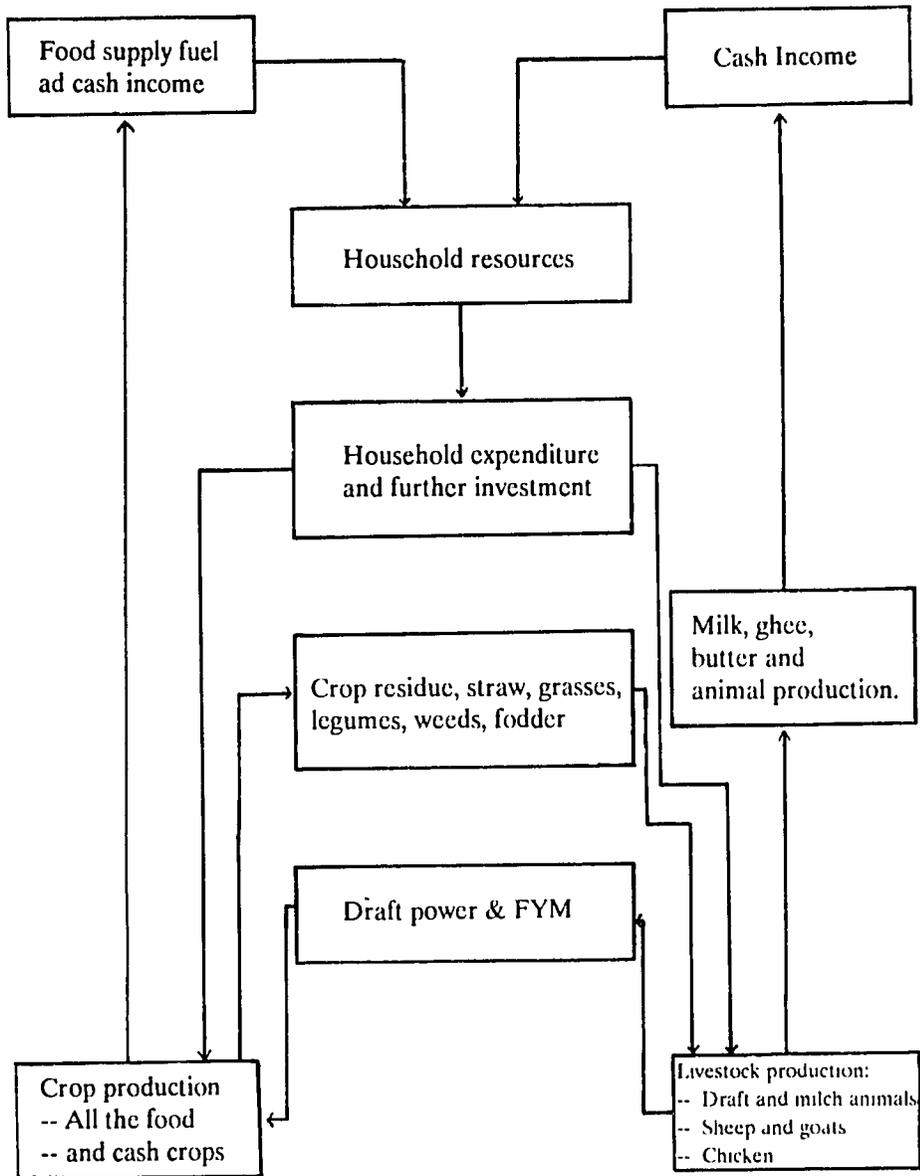
| Operation                     | TYPE OF LABOUR  |                 |               |                 |
|-------------------------------|-----------------|-----------------|---------------|-----------------|
|                               | Male<br>-Family | Female<br>-Male | Hired<br>Male | Hired<br>Female |
| Building & Maintaining Sheds  | 17.1            | 1.3             | 81.1          | 0.4             |
| Cleaning Sheds                | 8.4             | 90.7            | 0.8           |                 |
| Cleaning Animals              | 49.1            | 50.0            | 0.9           |                 |
| Grazing Animals               | 87.0            | 11.2            | 1.8           |                 |
| Watering                      | 55.4            | 43.8            | 0.8           |                 |
| Bringing Fodder               | 46.7            | 52.5            | 0.8           |                 |
| Milking                       | 32.2            | 67.4            | 0.4           |                 |
| Preparing Ghee                |                 | 100.0           |               |                 |
| Egg Collection                | 13.0            | 87.0            |               |                 |
| Manure Collection             | 6.2             | 92.9            | 0.9           |                 |
| Care of Birthing Animals      | 52.4            | 47.2            | 0.4           |                 |
| Care of Sick Animals          | 75.5            | 24.0            | 0.4           |                 |
| Selling Produce to Agents     | 86.7            | 12.7            | 0.6           |                 |
| Selling Products to Villagers | 5.9             | 94.1            |               |                 |

In fact, women's participation in maintaining the farm/livestock interface consumes appreciably more of women's time than their participation in crop harvest, storage and processing. A large portion of the time that women commit to livestock production goes towards collection and taking manure to the fields and bringing green fodder from the fields for feed, including clearing and watering the animals as well as collection and selling of animal products. This livestock production is the most important income generating activity for the average women as the women make income from the sale of milk, butter, eggs and animals. A gender division of labour within the farm-livestock interface is shown in Fig 2.

In most areas of Pakistan and indeed for many farming households of Asia and Africa, animal production services are principal to protect households from unexpected misfortunes in crop production. Hence one would expect to see a greater proportion of income coming from animal products among lower income households.

The broad areas of job-performance and activities are grouped under the following categories:

1. Farm Crop Production
2. Food Processing and Preservation
3. Livestock Management Activities
4. Fruit and Vegetable Growing
5. Activities in Agro-based Cottage Industries



**Fig. 2. Crop-livestock interface.**

## Problem Statement

The rural women form about 36 percent of the total population of Pakistan but only 7 percent of them can read and write. The low literacy rate in the provinces range widely i.e., Baluchistan has only 1.75 percent, N.W.F.P. 3.8 percent, Sind 5.0 percent and Punjab 9.4 percent(32).

From the prevailing cultural and socio-economic conditions in the rural Pakistan it is apparent that rural women are tradition bound, ignorant, unskilled, and are using the same age-old traditional production system.

Another issue that where women live is also a factor that has a strong influence over women's participation in various operations. In the areas where women more earnestly avoid the company of men by staying more within the household, they will tend to participate less actively in operations that take them outside the village or into the fields and where there are fewer restrictions on women's movement, they will participate more.

Pakistani rural women also play a significant role in the farm operations as well as farm decision-making. The decision-making authority reflects the influence that women have within the network of family social relations - something which should be effected by cultural norms of "proper" female role just as much as the extent of female participation in farm operations or in other words, the greater the female participation in farm operations, the greater is the decision-making score and vice-versa. The Table 3 shows the percentage of decision-making by men and women both in the Barani and Irrigated Punjab.

**Table 3. Female Decision-making Authority in the Barani Farming Systems of Punjab**

| Operation                               | Female Respondent | Husband | Other | Female Respondent | Husband | Other |
|-----------------------------------------|-------------------|---------|-------|-------------------|---------|-------|
| Weeding                                 | 28.8              | 14.4    | 56.8  | 3.2               | 53.8    | 43.0  |
| Collecting Rape leaves For Green Fodder | 53.7              | 9.5     | 36.8  | 12.3              | 49.4    | 38.3  |
| Husking Maize                           | 28.7              | 20.8    | 50.5  | 23.4              | 22.6    | 54.0  |
| Threshing Groundnuts, Maize or Rapeseed | 21.6              | 20.6    | 57.8  | 16.4              | 37.1    | 46.5  |

## Need for Development of Rural Women

In spite of all the above given facts, there is a thirst to identify the technology being used at present and future technological needs by rural women in farming systems research. As such there is a need to consult their problems, priorities and development needs.

In view of this, aiming at the socio-economic progress and welfare of the rural population, the priority has been given to the rural women in the development sector/rural women have always been assigned low status and secondary role in the farm family. This leads to the need of diagnosis and characterization of the women component in FSR of Pakistan. This is important because greater involvement of women in groups and individual families in planning and implementation programme at farm level would help to make the programme more successful. Lastly, without the active involvement and training of rural women in FSR, whole of the agricultural production system seems to be incomplete. Therefore, the women of small households in different agro-ecological zones and sub-cultures of the target areas under the FSR project should be included in the development process. The variables of women's participation are given in Annexure A.

## Policy Statement of Chairman, PARC

The general guidelines and policy statement of the Chairman, Pakistan Agricultural Research Council, Islamabad, needs to be noted. He has placed high priority by assigning responsibility to essentially incorporate rural women component in the Farming Systems Research/MART Project.

## Conceptual Framework

As agricultural household can be the most common and basic unit of production and consumption, the study can be viewed as a system with socio-economic and institutional factors (Social system) resource extraction patterns (Technology system) Fig 3.

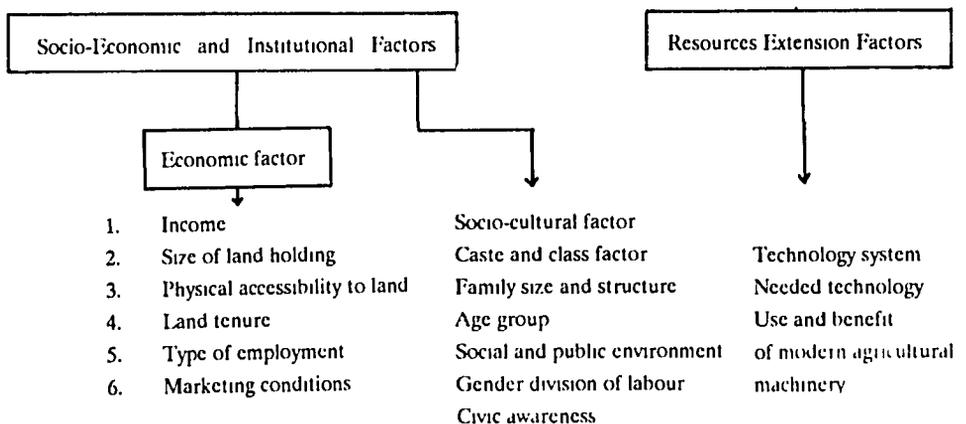


Fig. 3. Conceptual framework analysis

To integrate women in any development project (design and implementation) it is very important to first identify what women should do and why. After this, given conceptual framework can be utilized to work out relationship between socio-cultural and economic factors and women's decision and participation level.



## METHODOLOGY AND STRATEGY

### Utilization of Secondary Data

Secondary data on important aspects of women's participation in FSR and farm decision-making (such as type of farming, production trends, natural and socio-economic environment and other factors effecting and promoting their role) were compiled and reviewed, which helped to understand the situation and background information of the area. As research on women in development in Pakistan is field oriented and action directed, it has been used with varied degrees to raise the consciousness of the policy-makers, programmers and public at large in order to bring changes in the status of women and in the legislation policies and programmes for their betterment.

The studies by Kishwar and Pervaiz Akhtar (1981) on "an investigation into the patterns and problems of improving skills of rural women" indicate the need for motivating the women workers and institutions for setting up cooperatives with the help of provincial welfare departments and cooperative departments.

M.B. Abbasi's (1988) studies on "Socio-economic Characteristics of Women in Sind" suggest the need for linking various kinds of small scale industries within the frame of large scale industries and of small markets with large markets so that women employed in small productive work become a part of the large setting.

### Diagnostic Study

The primary data have been collected through the informal survey held from July 10-14, 1988, (Annexure B) where the target group was the female heads of the small farm households of Fatehjang area in the Barani Punjab. The results of the diagnostic/informal surveys have been examined for their utility in improving or expanding the projects. So far, the projects generate a change in will outlook from indifference to involvement, community participation, awareness of social services, sense of accomplishment and skill development with possible income generating potential. For the present study, the following criteria was kept under consideration for selection of the farming systems research and extension target area and more in detail of the specific domain. Schedule for diagnostic study is attached in Annexure B along with list of participants.

### Project Selection Criteria

- (1) *Cooperative and Progressive* attitudes and potential interest of the *small* farm families (in farm-family unit), who are willing to participate in the Farming Systems Research and activities and programmes.

- (2) *Optimum Potential* of quick *beneficial impact* on the participating families to serve as an adoption and replication *model* in the local farming community.
- (3) Making available *services, facilities, technical know-how* and providing essential *inputs and outputs* for successful farming both by the *public and private sectors*.
- (4) Opportunity for *improving the welfare and progress* of farm women by maintaining possible equity thrust in the rural community.
- (5) Easy access to village in terms of distance and metalled road.

### **Participant & Work Group**

A multi-disciplinary team of women scientists, social and biological scientists (economists, sociologists, anthropologists, agronomists, plant pathologists, entomologists, social scientists, animal health, and nutritionists, poultry specialists, horticulturists, subject and training specialists) was organized. This approach proved to be a powerful technique in obtaining rapid understanding of the existing farming systems, priority research problems and constraints that rural women face in FSR.

The survey team was divided into 3 groups. Each group had a resource person who was familiar with the area. Interviews were conducted informally with the rural women in three types of dialogues, group to group, key informant to group dialogues and person to person conversations and discussions.

### **Background Material & Guidelines**

- (a) To help the researchers in the informal interviews, a two days training workshop was conducted which trained the scientists through lectures and mock interviews in the techniques of diagnostic survey.
- (b) A check-list for activity analysis according to the farming systems research criteria was provided to the researchers. This included a list of socio-economic indicators, crop-production categories, livestock and poultry management questions, household and off-farm activities. (Annexure C).
- (c) No questionnaire was used in the survey but the multi-disciplinary women scientists' team interacted with rural women to define their problem/constraints and suggested resolution from their point of view.

### **Records & Proformas**

Records of the proceedings were kept by the FSR Women Consultant during the group discussions in the evening sessions. At the end of this study, proformas were given to the participants to summarize their assessment of constraints and intervention opportunities in the target areas. These proformas were collected and analyzed afterwards.

### **Results**

- (a) The present report is a result of the informal survey on "Rural Women in the Farming Systems of the Fatchjang (Barani Punjab)". This is an action strategy

for women's development in FSR. This is also an outcome of multi-disciplinary approach which draws upon resource scientists already present and accessible and delineates priority areas of intervention.

- (b) This is a basic framework and an initiating step towards replicating this type of exercise in other project areas.
- (c) The descriptive representation of the study analyzing the features of the target areas and women's on-farm productivity constraints is given in Chapter 4. Methodology with each and every step is given in Annexure D.



## RESULTS OF INVESTIGATIONS

### A. General Setting

#### *Bio-Physical Profile*

The present study was conducted in the flat uplands of the Punjab known as pothwar. The area is a large sub-mountainous plain some 25,000 square kilometers in the northwest of which is the Tehsil Fatehjang, situated at a distance of 45 km. from Islamabad. The pothwar upland is generally open and undulating country metalloid by soft loess deposits.

#### *Rainfall*

Rain is the major source of irrigation in Barani Farming Systems and varies each year. Heavy rains occur in July-August bringing half of the annual rainfall, while the remaining rains spread out from October to December(2).

#### *Socio-Demographic Profile*

##### *Caste & Class System*

A social hierarchy within the target areas exists according to castes. Upto five or six castes live in a village and differentiate themselves as Awan, Melyar, Mughals and Moens in descending order. Population growth rate is 2.18 percent/annum (development alternatives 1987: 1-4) doubling after every 33 years(6). It means that women have more children to take care of and more mouths to feed. Thus to improve the livelihood and status of barani household women, an understanding of the demographic situation is necessary.

##### *Age & Sex Structure*

The mean age of the sample population is 28 years, of which 43.2% and 6% consists of children and elderly people of the age of 15 and 65 years respectively. This is a typical age structure for the population of a developing country. Sex ratio is in favour of females. Age for working women is 15-50 years and an average household size is seven.

##### *Off Farm Employment*

Generally the male members of the household in the barani area have migrated overseas or to other provinces to seek and take up work. In these cases, women are solely responsible for agricultural production. Economically, such a trend has improved the livelihood of the household receiving benefits from their overseas members (Gender Survey, 1988).

## **Socio-Economic Profile**

### *Land Holding & Tenure*

The average farm size is 4.9 hectare in the survey area and operational size of holding is too small to support a family of an average size. The percentage of tenants is 42. The uncertain powers of the tenants over their lands result in low level of long term farmers investment and low usage of improved technologies. Repeated efforts by the government of Pakistan have been made towards land reforms, provision of security and freedom for the widespread tenancy. The consequences of these are the tenant eviction and direct cultivation by the landlords.

### *Income & Education*

Most of the people in the survey area are marginally poor depending upon the subsistence farming. Common source of cash income are (1) Livestock (sales of sheep and goat and sales of milk especially for women), (2) Groundnut and cash crops which bring only 10% of cash income. (3) Off-farm employment including remittance account for 40% of the household income. Cash needs at the time of sowing and harvesting are also met by women contribution through their income generating activities. Educational attainment in the areas is low and negligible for women as the educational facilities are lacking. Moreover women are significant labour force on farms supplemented by inter community labour exchange and hired labour.

### *Source of Livelihood*

Farming is the main source of livelihood for the people in the area but excessive soil erosion coupled with long drought have apparently accounted for decline in farm production. The livestock production serves to protect the poor families from the misfortune that can befall crop production. The introduction of sunflower in the surveyed area seems to be a major incentive for cash income to the farmers.

### **Resource Extraction & Extension Services**

This system is more important in barani areas than in the irrigated areas due to timely performance of operations and moisture conservation. The use of agricultural machinery has risen with tractors, wheat thresher, seed drills and mould-board ploughs being available to the farmers. Machinery is purchased by the large farmers and rented out to the small farmers. Agri-chemicals are also in use, although farm yard manure is still the basic fertilizer. Agricultural extension services system is there for the area but not doing well for many reasons and for women in agriculture the extension department is absolutely absent.

Almost every village in the survey area is connected either with metalled or kacha roads. Except for the rainy season, the rural communities can be approached throughout the year. The Government of Pakistan is paying special attention to infrastructure for rural areas development.

## **Barani Farming Systems**

The farming systems in the barani tract is quite complex and has become only a part time job for the farmers. This complexity arises out of small farm-size, management strategies, production of food and cash crops, fodder supply risks, aversion, and uncertain climatic conditions. The major crops in the area are wheat, maize, rape-seed, gram, lentils, sorghum, millet and groundnut. The practice of inter-cropping is widely observed and the cropping patterns are subject to adjustments in a given year depending on timing and quality of rains.

Livestock in the barani areas provide a wide range of important products and services i.e. farm yard manure, milk products, draft power and investment. Emphasis is given to the quantity than quality. The importance of livestock increases in areas, where rainfall is erratic, but animal number is limited by supply of feed. The dry winter months bring scarcity of fodder and according to the farmer resources supplemental feed is purchased. Livestock management activities are performed by women and livestock keeping has resulted in specialized crop management practices e.g. inter-cropping of mustard in wheat and sorghum in maize. Maize thinning and following of land are also fed to animals.

## **B. Women in Agriculture/Farming Systems**

### *Women's Place in Farm Family*

The communities of the Fatehjang show a defined and rigid gender hierarchy. They are characterized by a remarkably low status of women, lacking alternate life styles and career opportunities. They have very little education and a majority of them do not participate in labour market.

In the rural economy, women are very productive. They not only participate in crop-production and livestock management but are also fully responsible for household activities and make handicrafts to maintain a steady flow of household income. They also play a significant role in farm decision making.

Much of the data available on the gender division for rural Pakistan indicates about a 10% proportion of women in the agricultural labour force. Social ideals allocate separate roles of how women and men influence actual work on farm, and the data has been collected on the basis of this bias. Broader definitions of what constitutes economic farm activity yields 30-45% females in Pakistan labour-force.

### *Women in Crop Production*

Farming in Pakistan is a family enterprise requiring all family members to contribute to the various activities ending up in farm production, its domestic consumption and disposal of the surplus. Women's involvement in farming operations in the fields and when the produce is brought to home, its handling/distribution and storage is well established. Thus for a better understanding of these activities, from



*Harvesting fodder is an important task for rural women*



*After harvest women engage in chopping fodder and feeding animals*

women's participation and decision-making perspective, the operations have been studied under two heads as following.

- (a) pre-harvest -- crop preparation activities
- (b) post-harvest -- crop harvesting, processing and management activities.

### *Women in Pre-Harvest Activities*

Pre-harvesting activities start with crop production cycle or with the crop preparation activities. As the yields are much less in Barani Punjab then the irrigated Punjab, this factor makes the female participation in Pothwar area more obvious.

In crop preparation activities women share only those activities which are intended to help men. The land levelling and ploughing are mostly male dominated mechanized processes, with no women labour input in actual operations and only in support activities

Sowing of seeds is performed through drilling methods with tractor by men, and women only help men in the seeding operations, because they have lack of necessary experience in the seed sowing.

In fertilizer application women participate on a small scale but their participation in applying IYM to all crops is very high.

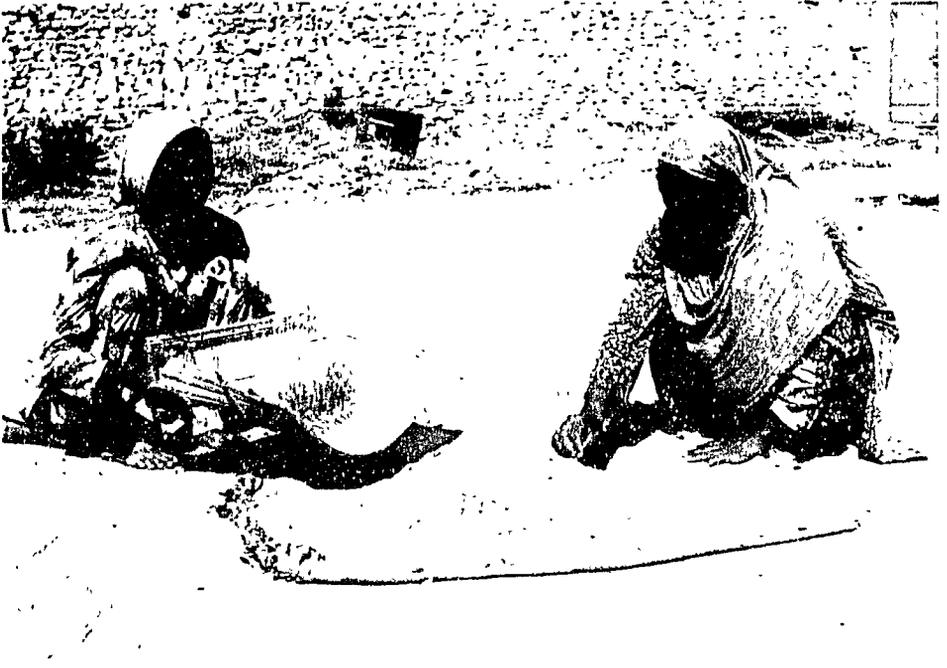
Women are extensively involved in weeding and fodder cutting with a manual tool called *khuapa*. But in the study area this activity is mainly done for collecting fodder and not only to save the crops from damage.

Women from higher socio-economic strata do not participate in weeding and engage servants for these jobs.

### *Women in Post-harvest Activities*

The post harvesting activities start from the crop harvesting and crop processing and management responsibilities. As far as the economic contribution by women in the area is concerned, these activities are of significant importance. Thus during both crop seasons the Rabi and Kharif women are highly and actively involved in crop processing and management process. When the labour demands are at peak, all the family members get involved in it. In many cases due to the off-farm employment of men, women fully take the responsibilities of this work. In very few cases women provide seasonal labour on crop share basis.

Threshing is done by the modern agricultural machinery, but threshing with draft power involve high women labour. On the thresher, women perform tasks like helping men by giving bundles of unthreshed wheat, cleaning and storing threshed grain and supervision of the transportation of the crop to the house. The storage of



*Seed cleaning occupies much effort by the rural women*



*Stripping of sugarcane shared by women*

farm produce is essential to maintain the seasonal supply of grain to satisfy continuous demand and it is extensively women's domain and specialization activity. Thus women's contribution is very high in the management of the stored grains.

#### *Women in Livestock/Poultry Husbandry*

Livestock farming is a labour intensive operation handled by women where large portion of their time goes towards collecting manure and bringing green fodder from the fields. The women in the barani area not only care for the small ruminants but also herd the large animals. Their activities include feeding, cleaning, watering, milking, milk processing and assessment of animal health. Women also handle collection, processing and selling of animal/chicken by-products. The interface of crop-livestock system is an important aspect of the entire farming system and women are the principle custodian of relevant knowledge. They collect leaves and weeds and bring them to the animals. They collect animal manure, dry it and take it to the fields

#### *Women in Off-farm Activities*

Handicrafts are produced and sold by women as an acceptable form of off-farm industry. Labour input in this industry is very high, but the existing marketing infra-structure is very poor.

#### *Women in Farm Decision-making*

Ideally the male household heads designate the role and responsibilities of other household members in the barani area. The roles are allocated to women and children on the basis of the beliefs about what women and men should do. But certain factors effect this authority as the level of contribution of the women to household income, the age, size of household, her education, her level and extent of participation in farm operations.

Farming includes all members of the farm family from production to the disposal of the produce. Viewing consultation as an important ingredient of the democratic process at farms, the respondents were asked if they were consulted during the last sowing and harvesting seasons on certain farm activities? The observations depict the role of women in decision-making which obviously suggests that decision making score of women is high, where their participation is high, and if they do not participate in farm operations, they have low score. As in land levelling, ploughing and sowing, they have low decision-making authority. Then from the observation it is hypothesized that greater the use of agricultural machinery in crop production activity, the lower the women's participation and decision-making authority.

Existing literature on the subject supports the findings. Saleh Begum in her article "Women & Technology" says that the modernization of agriculture means declining the female participation and more fully because rigid gender based division of labour that disapproves women's access to any kind of agricultural machinery and



*Dung cake making for fuel is major activity of village women*



*Ghee making for the family and for sale*

technology as well as decision-making.

Women have strong decision-making power in the areas in which they are specialized and are involved intensively. This statement is supported with Abiva's finding that "The involvement has direct relation to decision-making involvement". Weeding is an area for women decision-making regarding time input, field selection and quantity of weeding.

Women's involvement in decision-making for various crop processing activities is high as most of them are performed manually. Regarding the disposal of crops, democratic decisions appear predominant followed by no consultation category. The consumption and disposal decisions of processing grain are monopolized by women but men take over the responsibility of marketing.

The grain-storage is highly women decision-making area regarding pre-storage, sun drying, place of storage, quality and quantity to be stored and grain protection measures.

In the study area farmers of some casts seem to be ignoring their women-folk in decision-making process more than the farmers of the rest of the castes in almost all of the farm activities. As for storage, the decision of the majority of Awan women prevailed, while in Syed caste the male member is dominant in the decision-making authority in every respect.

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## CONSTRAINTS AND PROPOSED INTERVENTIONS

The study in general suggests that women are fully occupied in working outdoor and in-door activities, but the society has assigned to them a very low skilled and non-remunerative work and has denied to them the facilities for skill up-gradation. Public policy formulation has contributed little to evaluating the status of rural women.

Problems identified by women multi-disciplinary scientists, who conducted the diagnostic survey in Fatehjang area were analyzed in the context of their role in farming systems operation, skills and opportunities improvement in agriculture for the development of rural women and their circumstances articulated. Summary is attached in Annexure E.

### Socio-cultural Problems

- Illiteracy, social customs and taboos.
- More stress on women's role as a mother, a daughter or as a wife.
- Patriarchal society where all technology-oriented tasks are performed by men, leaving only manual work for women.
- Poor health conditions combined with triple obligation of household, farm and human capital reproduction.
- Lack of information and civic awareness among rural women and no direct suggestions to improve their lives financial status.
- A major part of the time is spent in washing, cooking, child care, bringing water and collecting fuel due to lack of improved household technologies.

### Suggestions

Government should take a policy decision to increase provision of facilities for female education. Specific attention needs to be paid to professional and vocational education where there is no separate institution for women.

A study by Ashfaq Hussain suggests that adult education centres may be introduced for girls and skills like sewing, knitting, embroidery, gardening, poultry and dairy farming be integrated with the existing system of formal education.

Specific education oriented programmes towards the attitudes of male and female in general and women's participation in economic activities in particular. A Mobile school with lowered minimum qualification for teacher and introduction of the system of mixed enrollment in all new and existing schools from Class 1 - 3 is required.

In the field of health and social welfare, the size of development programmes in the rural areas need to be expanded/increased. Women need to realize their economically productive roles, at least those acknowledged by men.

Introduction of household technologies, for example, Bio-gas Plant will relieve women from many arduous tasks, save their energies and health and will surely increase the economically productive activities alongwith a healthy change in their lives. As in village Godho of Barani Punjab and NGO "Rural Development Foundation" has successfully introduced the Bio-gas Plant.

### **Economic Problems**

- Under representation of women's economic contribution and labour participation ratio.
- Exclusion of women in development programmes and resulting in gender specification of all agricultural production operations.
- Complete non existence of institutional and organizational support for women in their areas of specialization as they do not have credit facilities for initial investments as productive industries. They have no means to upgrade their skills to maintain production system and no services to sustain their production efforts. As the mint in this area could be processed and packed but on the part of women, it demands some investment. Other examples are embroidery, bee keeping and cocoon farming.

### **Suggestions**

- The National bureau of Statistics should depict the data on women's economically productive activities.
- The Planners and policy makers must include women in all the agricultural development programmes at all levels.
- Establishment of village centre for women and small credit schemes should be made available to women in the agriculture sector. The ADBP's Credit Scheme for women should be expanded in other areas and women must be accepted as collateral for sanctioning loans for initial involvement in cottage industries. In a study conducted in Lahore by Farida S. and K. Mumtaz, it is found that women who worked through a middle man failed to work on their own simply because they did not have contacts and capital. In the study the idea of an order work centre drew much more support from the women than the idea of settling up exclusive industrial homes. In the latter cases, the emphasis would be on learning rather than earning.
- The concept and mode of saving among rural women needs to be highlighted.
- Establishment of small scale training-cum-production units linked with well organized marketing channels for cottage industry is needed, such as industrial homes for training and production of embroidery, stitching, wood work, jute work etc.
- Expansion of the processing of the agricultural products from urban to rural

areas in order to contract the scarcity of jobs is essential for the uplift of rural women. In this regard, the use of radio or both audio-visual programmes oriented mainly for the benefit of women in agriculture will be the best method to communicate ideas, such as drying, processing and packing of ground-nut and mint.

### **Crop-production Problems**

- Use of traditional out-dated skills and technologies resulting in low productivity of women's labour and time input. As groundnut has recently been introduced in the Fatchjang area but traditional cultural practices result in low productivity since considerable investment of female hand labour i.e., hand harvesting of ground-nut, manual weeding, cleaning of seeds and shelling ground nuts are arduous time consuming jobs.
- Weeds such as Carthamus species reduce cash crop yields but are seldom removed by women.
- Grain losses during storage of seeds is considerable, since women use jute bags early attached by rodents, insects, aflatoxins, fungi, infest seeds, which have not been adequately dried. Chemical treatment of grain during storage sometimes can be dangerous to one's health. Women have little knowledge and experience in the wise use of pesticides.

### **Proposed Intervention**

- Primitive tools available to rural women for operational work needs may be substituted with modern labour saving devices such as ground nut digger, reaper for harvesting, small blower for winnowing and Husking machines.

### **Livestock Husbandry Problems**

- Decrease in the number/size of livestock herd each year is reported by women. Because of disease outbreak they are neither able to diagnose nor provide adequate treatment.
- Low milk yields are due to malnutrition and poor feeding practices. During winter there is a scarcity of fodder and animals are fed with wheat straw, cattle cake and oil cakes.
- Supplemental feed is experienced and scarcity of fodder is common. Women are directly and adversely affected since cash income from livestock is largely women's responsibility.

### **Proposed Intervention**

These may include:

- Establishment of small veterinary units at village level.
- Improved feeding practices using low cost supplemental feed and increased fodder.
- Training in improved livestock husbandry and health care.

- Introduction of appropriate technologies for the processing of milk and preservation of milk products to enhance the income of rural women as it has been observed that income from dairying even in this primitive and traditional style has a margin of profit, that some households give preference to keeping milk animals over drought animals.

### **Problems of Poultry**

- High mortality of poultry due to lack of disease prevention practices is common.
- Women lack the management and marketing facilities to earn favourable income from eggs or meat products

### **Proposed Intervention**

- Upgrading of women's skill/knowledge to diagnose and treat common disease of poultry.
- Development of complete package to up-grade poultry husbandry, health and marketing practices.
- Extension of packages at low cost and sustainable supply system.

### **Vegetable Production Constraints**

- Fatehjang families show a very low productivity in kitchen-gardening due to lack of motivation and furthermore non-adapted varieties for arid conditions preclude much growing of vegetables.

### **Proposals**

- Assessment of vegetable varieties which can be grown under local conditions and profitably marketed.
- Introduction of trial kitchen-gardening with requisite skill training, seeds and nursery plants.
- Encourage exploring markets in the target domain.

### **Extension & Marketing System**

- Women have no access to the existing extension services in the area of agriculture. The present system only addresses the problems of male farmers i.e., educational/informational services. Relative to both agricultural production and marketing, skills for rural women are urgently needed. The second needs much more attention from the farm gate, since ghee, butter and eggs are collected by the middle men outside the village community to retail to the town market. Much profit is absorbed by men monopolists.
- Women have little mobility outside the village to market farm-products. In this way they lack a reliable and equitable mechanism, which would provide an incentive for increasing salable products.

## **Proposed Interventions**

- Initiate a separate wing in the agricultural extension services solely staffed by women.
- Impart the skills to the farming women.
- Pest and weed control methods.
- Harvesting, processing and preservation technologies in crops, vegetables and milk products.
- Use of audio-visual instrument to accelerate improved farming knowledge and skills.
- Establish sustainable marketing mechanism within the villages, that is reliable and equitable for village women. Saiyeda Zia, A. also supports that in some way marketing and training centres can be used for encouraging the local traditional art and handicrafts.
- Upgrading the marketing skills and awareness of village women by:
  - Enlarging the size of markets.
  - Securing the inputs at reasonable cost.
  - Selling the output at reasonable prices.

## **Women Co-operatives**

- Women in the target area do not have any access to co-operatives. Women labour needs to be organized and strengthened to make them more productive.

## **Proposals**

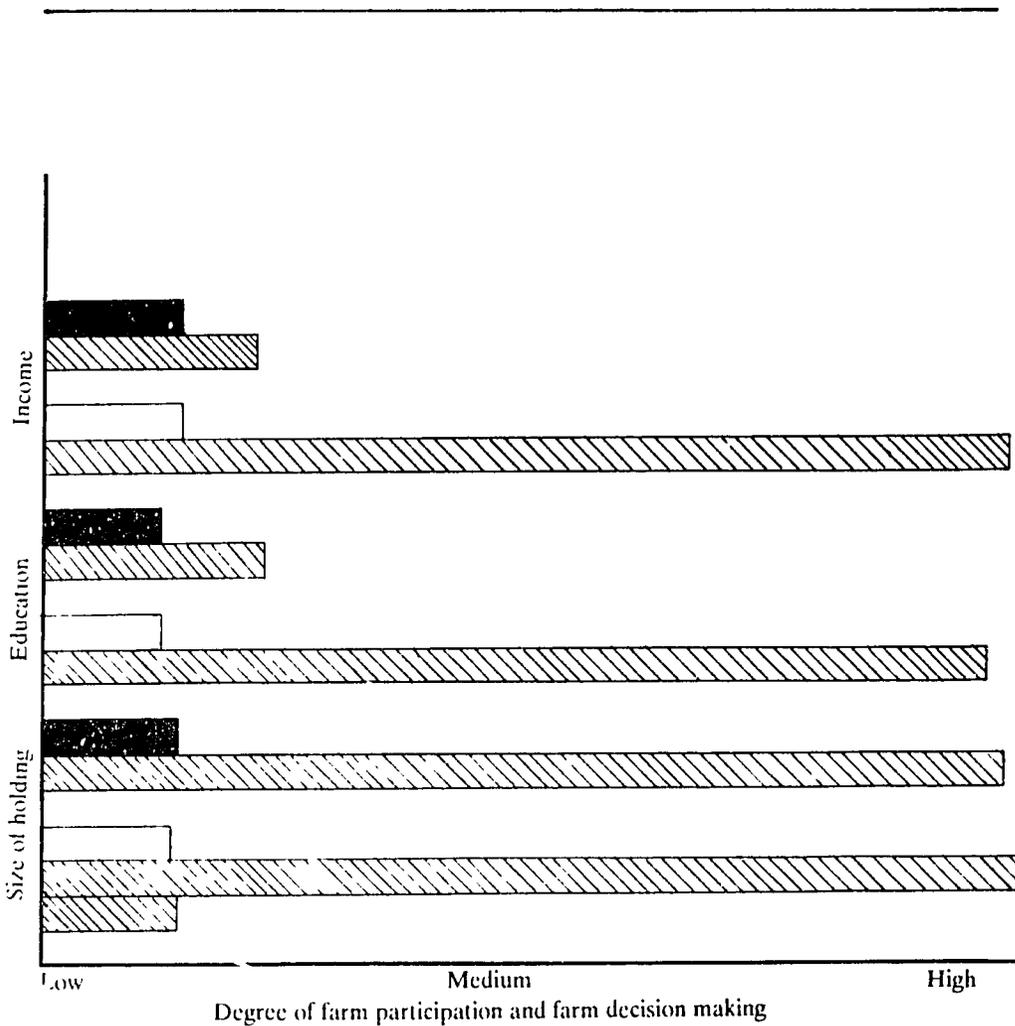
- Small co-operative should be introduced in the area and women may be trained to run co-operative through lady co-operatives or inspectress.
- Women co-operatives or rural women groups could assess and accelerate the adoption of improved technology.

## **Other Factors**

There are some other factors which also effect women's participation in farm operation on either side (Fig 4).

## **Research Areas**

- During the diagnostic study, further areas of research especially for the social scientists have been identified. These areas would serve to elucidate and alleviate women's role in farming operations. The areas include:
  - Women labour force in agriculture.
  - Women Extension System and Co-operatives.
  - Agricultural chemicals and safety for women's children.
  - Need, sources and utilization of farm credit by rural women.
  - A profile of existing training facilities for rural women in FSR.



- *High income, education, size of holding*
- *Low income, education, size of holding*
- ▨ *Degree of farm participation and farm decision making*

**Fig. 4. Factors affecting women's role in FSR**

## PROJECT DESCRIPTION

On the basis of the information available during informal survey attached at Annexure E, the designing practices or recommendations for a particular farming system by the analysis of the constraints/problems of that system are given. The recommendations are produced which are suitable for the specific local conditions.

For implementing a farming system project, a clear understanding of the implicit and explicit linkages between these systems is necessary. Taking into account these relationship/linkages, project/proposals for each sub-system has been developed. The various sub-systems of the farming system may interact or overlap each other. These are described in Table 4.

### Training Procedure & Material

The master trainers will be selected from 3 to 5 villages of the target domain i.e. Fatehjang area and it will be facilitated with the help of Assistant Director, Women Training Programme, ABAD. Training courses on the specific subject in accordance with the needs of system will be organized for the master trainer. Collaboration of training staff and facilities of the concerned organization will be managed as has been shown in the project design for different systems. For example, the Director Poultry Research Institute and Director Dairy Development Departments have agreed to arrange combined courses in poultry and goat husbandry.

Training material will be designed and developed according to needs, interest and desired intervention diagnosed during the informal survey. Training kits on rural poultry will be provided free of cost by the Poultry Research Institute, Rawalpindi. The training material on the subject required will be designed, developed and produced by the Allama Iqbal Open University, Islamabad.

### Terms of Reference

This section includes job description for FSR/Women component team members namely economist, agronomist, entomologist, sociologist, anthropologist, poultry scientists and subject matter specialist.

To generate and identify better production alternatives than the one known/used by the rural women in farming operations, the FSR women component counts on a group of professionals and scientists at different levels grouped in support programme.

This team means an energetic group of people, who are committed to

**Table 4. Outline of various subsystem's at Fatehjang**

**A. LIVESTOCK/POULTRY PRODUCTION**

| Priority Problems                                                                                                                                                                                                  | Subject Methodology                                                                                                                                                                                        | Collaborating Agency/Dept                                                                                                                                                                                                                                      | Inputs                                                                                                                                                                             |                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>-- Lack of knowledge in Management techniques and disease breakout</li> <li>-- No Credit facilities</li> <li>-- No extension services</li> </ul>                            | <ol style="list-style-type: none"> <li>1. Rural poultry Keeping</li> <li>2. Goat Husbandry at village level</li> </ol>                                                                                     | <p>Poultry Research Institute, Rawalpindi</p> <p>Livestock &amp; Dairy Dev Dept Rawalpindi<br/>Social Sciences PARC</p>                                                                                                                                        | <p>Foreign/Local experts</p> <ul style="list-style-type: none"> <li>-- Local Training</li> <li>-- Publications</li> <li>-- A.V. Aids</li> <li>-- Monitoring/Evaluation.</li> </ul> |                                                                                        |
| Project Goal                                                                                                                                                                                                       | Measures of Goal                                                                                                                                                                                           | Assumptions for Goal Achieving                                                                                                                                                                                                                                 | Source of Information and Data Used.                                                                                                                                               | Output                                                                                 |
| <ul style="list-style-type: none"> <li>-- Increasing the cash and subsistence return to the farming household by increasing the efficiency of women's contribution to the livestock/poultry production.</li> </ul> | <ul style="list-style-type: none"> <li>-- Increased household income.</li> <li>-- Acceptance of technology by women</li> <li>-- Improvement in social indications like health education library</li> </ul> | <ul style="list-style-type: none"> <li>-- A continued support to women's program</li> <li>-- Cooperation of all the institutions engaged for the uplift of rural women.</li> <li>-- Provision of logistical and management support by MART Project.</li> </ul> | <ul style="list-style-type: none"> <li>-- Project's evaluation</li> <li>-- Quarterly reports</li> </ul>                                                                            | <p>A design for implementing research and extension for women in animal husbandry.</p> |

**B. CROP PRODUCTION**

| Priority Problems                                                           | Subject Methodology                                                          | Collaborating Agency        | Inputs                                                                      |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>-- Low techniques in pre-</li> </ul> | <ul style="list-style-type: none"> <li>-- Site specific technical</li> </ul> | <p>Crop scientists NARC</p> | <ul style="list-style-type: none"> <li>-- Foreign/local experts.</li> </ul> |

(contd.)

|                                                                                                           |    |                                                                                                                                                     |                                                                                                                                 |                                                                                 |                                                               |
|-----------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------|
| harvest and post-harvest process                                                                          |    | training to upgrade the knowledge and skills of rural women about harvest storage and processing of food                                            | Social scientists PARC                                                                                                          | -- Site specific<br>-- Site specific                                            |                                                               |
| Weed problem                                                                                              |    |                                                                                                                                                     | Allama Iqbal Open Univ.                                                                                                         | -- Publications<br>-- Audio-aids                                                |                                                               |
| Storage loss by insects. Marketing problem for crop product.                                              | -- | Small cooperatives for marketing of crop product.                                                                                                   | ADBP                                                                                                                            | -- Small scale model rural industry.                                            |                                                               |
| <b>Project Goal</b>                                                                                       |    | <b>Measures of Goal</b>                                                                                                                             | <b>Assumption for Goal Achieving</b>                                                                                            | <b>Source of Information and Data Used</b>                                      | <b>Output</b>                                                 |
| Upgrading the knowledge by increasing the efficiency of women's contribution to the crop promotion system | -- | Increased knowledge about harvest/storage and processing of foods.<br>-- Decreased storage losses.<br>-- Organization of small scale rural industry | -- A continued support to women's program<br>-- Cooperation of rural society<br>-- Understanding the objectives of the program. | -- Project's evaluation<br>-- Progress report by rural women and their analysis | Trained rural women in crop promotion research and extension. |

**C. FRUIT AND VEGETABLE PRODUCTION**

| Priority Problems                                | Subject | Methodology                               | Collaborating Agency          | Inputs                                                            |
|--------------------------------------------------|---------|-------------------------------------------|-------------------------------|-------------------------------------------------------------------|
| -- Low production                                | --      | Kitchen gardening                         | -- Biological scientists NARC | -- Timely cooperation and continued interest of the institutions. |
| -- Lack of skills in processing and preservation | --      | Low cost storage and preservation methods | -- Fruit & Vegetable Peshawar | -- Experts & Specialists.<br>-- Modern technology introduction.   |

(contd.)

(contd.)

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|                                                                                         |                                                                                                       |                                                                                                                                                | -- Evaluation.                                             |                                                                      |
|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------|
| Project Goal                                                                            | Measures of Goal                                                                                      | Assumption for Goal Achieving                                                                                                                  | Source of Information and Data Used                        | Output                                                               |
| To increase the production of fruit & vegetables in the Project target areas            | Establish kitchen gardening.<br>Acceptance of transmitted evaluation program recommendation by women. | Continued interest by rural women in the areas.<br>The beneficiaries support the project enthusiastically.                                     | Interim evaluation report<br>Report by Director personnel. | Effective design of research and effective training of participating |
| <b>D. OFF-FARM ACTIVITIES</b>                                                           |                                                                                                       |                                                                                                                                                |                                                            |                                                                      |
| Priority Problems                                                                       | Subject Methodology                                                                                   | Collaborating Agency                                                                                                                           | Input                                                      |                                                                      |
| Unskilled and untrained rural women                                                     | Craft production training and facilities.                                                             | -- ABAD Rawalpindi                                                                                                                             | -- Local training                                          | -- Equipment providing                                               |
| -- Low market prices.<br>-- Financial constraints<br>-- Lack of facilities and guidance | -- Small women cooperatives<br>-- Acceptable credit schemes<br>-- Appointment of extension workers    | -- ADBP Islamabad or Federal Bank for Cooperatives if possible.<br>Extension Dept.                                                             | -- Maintenance and                                         | -- operatives.                                                       |
| Project Goal                                                                            | Measures of Goal                                                                                      | Assumption for Goal Achieving                                                                                                                  | Source of Information and Data Used.                       | Output                                                               |
| To provide income generating activities to rural women.                                 | -- Increased household income<br>-- Improvement in socio-economic welfare.                            | -- Women's interests according to the project implementation.<br>-- Provision of moral and logistical support by the institutions as required. | Survey Evaluation.                                         | -- Skilled female labour force.                                      |

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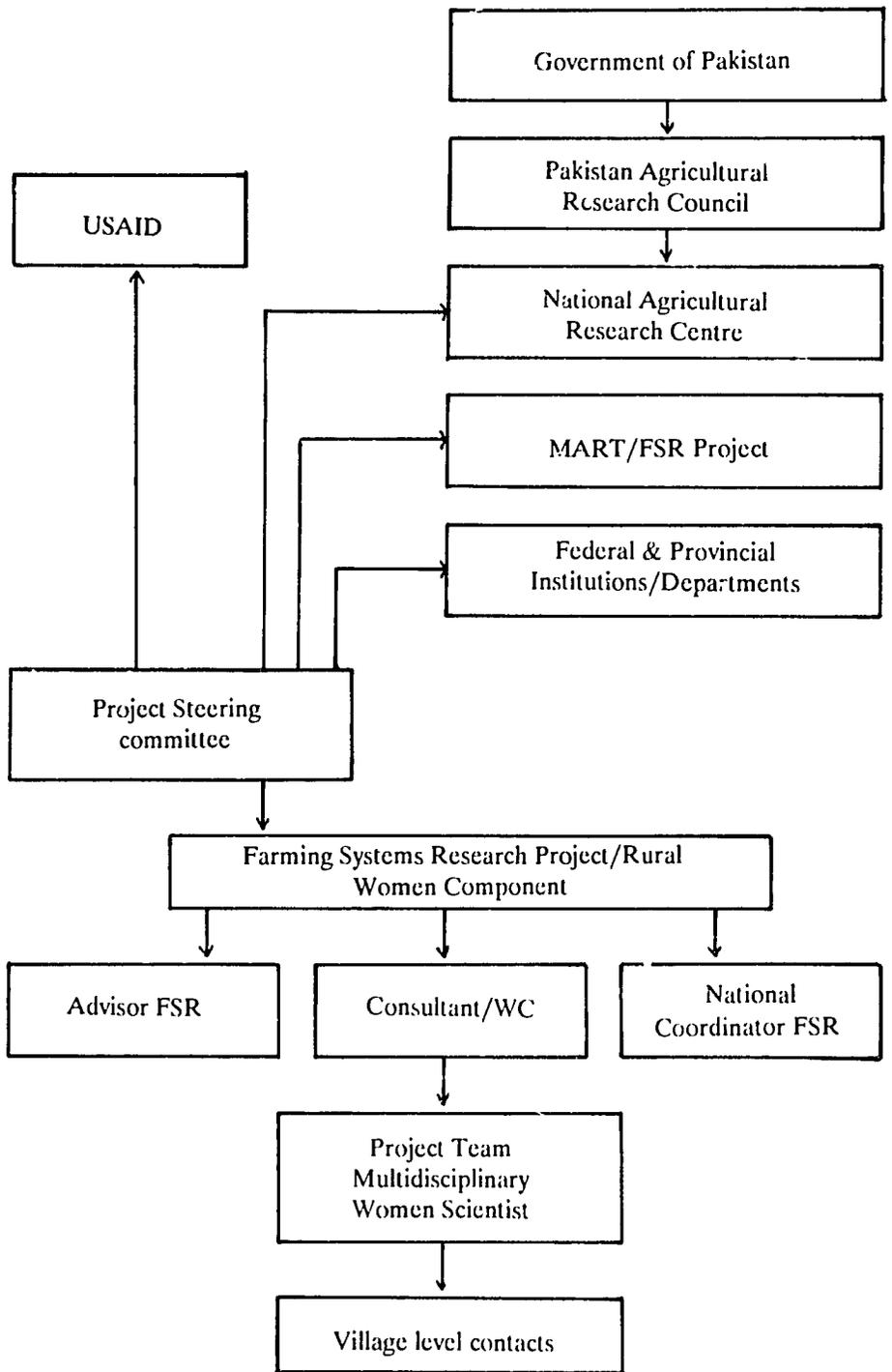


Fig. 5. Project organization chart

achieving the common objectives and produce high quality results.

*Economist:* Working closely with sociologists. Study current condition, existing practices and their reasons, constraints i.e., physical, social and economic, limiting their action. Price-system, marketing facilities, consumers requirements, social and economic effect of new technologies adoption.

*Sociologist:* Study socio-cultural practices. Sorting the reasons why certain technologies are not acceptable, traditional values, social environment, etc. What changes are more practicable, productive and profitable, social norms and folkways etc.

*Anthropologist:* The family structure and human behaviour to the acceptance of technology i.e., human psychology.

*Animal Scientist:* Would study animal management, grazing system, by-products of crop used as feed and now animals fit best in FSR, constraints for productivity that women face training needs, women's area of skills. What better management practices can be adopted easily related to nutrition, health, and reproduction. The workable and profitable changes.

*Agronomist:* Would study the crop-production methods including soils, fertilizer, agricultural implements, weed problems and how these can be improved through women.

*Entomologist:* Would study which insects are harmful. How insects damage can be limited. Storage problems faced by the women -- what devices can be limited -- what devices can be made, what are the expected results, the acceptable pest management practices. Naturally occurring predators. Chemical and crop manipulation as possible techniques for reducing damages.

*Poultry Scientist:* Would study the technical and human elements hindering the poultry farming, and the possible and acceptable strategies for the rural women to have a successful poultry farming, their training needs and adoption of technologies.

*Horticulturist:* Would analyze the implications of research results, organize farmer's field day and training courses. Locate co-operative farmers. Every time gaining knowledge about female farmers' problems and determine the research need to solve field production problems:

### **Co-ordinating Agencies**

The national development programmes create the need for those institutions that hold the complementary objectives to coordinate their actions and mutually support and strengthen their activities and work programmes.

The co-ordination institutions must agree that agricultural promotion process/uplift of Pakistani rural women and their training must be integrated into a single effort so that the production alternative investigated become the technologies used by the target group.

The MART project, for its part conducts research and prepares possible alternatives under the ecological, social and economic conditions of the different regions of the country. The other institutions establish the promotional and training programmes for the solution of rural women's problems. The various alternatives are tested by scientists and transferred to rural women through technical assistance. These institutions also feedback the possible problems that become apparent during the technology transfer stage.

Based on all that has been said, it is fully justified that these institutions whose interests and actions are oriented to benefit the rural women, should integrate their efforts and contribute resources to carry out these activities together.

### *Broad Objectives*

To investigate efforts and contribute resources to provide a great number of production alternatives to the rural women under the same agro-ecological and social conditions and to make the transfer of technologies more effective and acceptable.

### *Specific Objectives*

1. To co-ordinate agricultural research promotion and training to raise the living standard of rural women by the technician/scientists of the institution.
2. To co-ordinate efforts and to contribute resources for the production of technical training materials that relate to transfer of technology and ultimately to the uplift of rural women.

### *Commitments & Rights*

1. For better co-ordination of the activities that this understanding provides, the institution will name a representative who will check on the growth of activities and will submit periodic reports to both the authorities under whom he or she works.
2. They will select and determine the projects to be carried out jointly and after the projects are determined and prepared, they will be submitted to the directors for their information and approval.
3. The co-ordinating agencies/departments will agree to designate and to cover the travel, boarding and lodging expenses of the personnel involved in the project, and each of them will give the description of its staff along with its budget proposal.

### *List of Coordinating Units*

Following are the co-ordinating agencies and departments:

- (1) Agency for Barani Areas Development (ABAD).
  - (2) Poultry Research Institute, Rawalpindi.
  - (3) Livestock/Dairy Development Department, Rawalpindi.
  - (4) Allama Iqbal Open University, Islamabad.
  - (5) College of Home Economics and Social Sciences, Peshawar.
  - (6) N.W.F.P. Fruit and Vegetable Development Board, Peshawar.
  - (7) University of Agriculture, Faisalabad.
  - (8) Women Division, Islamabad.
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## VARIABLES OF WOMEN'S PARTICIPATION

1. Agro-ecological zone, altitude, climate hilly, plains or arid zone region.
2. Agro-ecological sub-zone having specific climate, temperatures, rainfall.
3. Type of Farming (moisture relationship) irrigated or rain fed (Barani).
4. Natural resources with reference to farm-size, land holdings, and type of soil.
5. Land tenure system i.e., landlord-self-cultivation, or type of tenancy and farming-contract.
6. Cropping patterns, crop rotations, cropping-intensity, conventional or cash crops.
7. Level and type of mix-farming, mutually supporting crops, fodder and appropriate types of livestock.
8. Sub-culture, values, traditions, role and status assigned to rural women in the farm-family.
9. Ethnic group with level of progressive attitudes and achievement-motivation.
10. Degree of dominance by the male as family-head.
11. Level and type of folk-knowledge and skills (efficiency and utility) of rural women, relevant to the important farming operations.
12. Education and literacy parameter adversely affecting low literacy level.
13. Infra-structure situation i.e., farm-to-market roads, electricity-supply, houses, drinking-water sources, school, health, local council, veterinary and agricultural extension services etc.
14. Sources of agricultural information and exposure to mass media e.g. radio, newspaper, printed popular literature etc.
15. Level of adoption and diffusion of agricultural innovation, improved farming practices, seeds, fertilizer-use etc.
16. Availability and mixed use of human and animal power.

17. Labour source and availability -- local labour -- supply, out-migration, shortage or scarcity during busy seasons.
18. Mechanization and use of improved farm machinery or traditional implements and farm-tools.
19. Level of Agro-industrial development or other supporting industry.
20. Sources and System of Agricultural credit i.e., Commercial Banks, Agricultural Development Bank of Pakistan, Farmer's Cooperative Societies etc.
21. Type and level of Training and Development Programmes and Institutions relevant to Rural Women e.g. Women Division, ABAD and concerned Provincial Departments and Agencies.

Annexure-B

### SURVEY SCHEDULE

**Project:** Farming Systems Research/Management of Agricultural Research and Technology (MART)

**Study area:** Tehsil Fatehjang (Barani Punjab)

**Duration:** 10-14 July, 1988

- |       |                                                                                                                                |
|-------|--------------------------------------------------------------------------------------------------------------------------------|
| Day 1 | Participation of participants using interviews and background material. Conducted by FSR Coordinator and FSR Woman Consultant. |
| Day 2 | Morning: Field visit to village Hastal<br>Evening: Discussion Session                                                          |
| Day 3 | Morning: Field visit to village Gagan<br>Evening: Discussion Session                                                           |
| Day 4 | Morning: Field visit to village Jeendar<br>Evening: Wrap -up session and distribution of proformas                             |
| Day 5 | Wrap-up scheduling for foundation document and workshop proceedings.                                                           |

## **PARTICIPANTS**

1. Ms. Farzana Masood  
Consultant FSR/Women Component, NARC
2. Dr. Ms. G Naz  
Poultry Research Institute, Rawalpindi
3. Dr. Mrs. Nasim Fawad  
Poultry Research Institute, Rawalpindi
4. Mrs. Nahid (S.O.), Entomology Labs., NARC, Islamabad
5. Mrs. Khurshid (S.O.), CDRI, NARC, Islamabad.
6. Mrs. Shahida Khalid (S.O.), Weed Programme, NARC, Islamabad
7. Ms. Shaheena (S.O.), Wheat Programme, NARC, Islamabad
8. Ms. Attiya Azcem (S.O.), ASI, NARC, Islamabad
9. Ms. Rukhshanda Munir (S.O.), ASI, NARC, Islamabad
10. Mr. Hafiz (S.O.), Horticulture Programme, NARC, Islamabad.
11. Dr. A. Majeed, National Coordinator, FSR
12. Dr. M. E. Dawson, Advisor FSR/MART
13. Mr. Yousaf Khan, Site Co-ordinator, FSR

## CHECK LIST

### A. INFORMATION DESIRED

- Socio-economic indicators
- Type of farming systems
- Women's role in each farming system/activity
- Resources available
- Possible solutions (farmers' view)
- Technology available
- Technology needed
- Transfer of Technology (methodology)

### B. FARMING SYSTEMS: RESEARCH, ACTIVITY AND ANALYSIS

- *Socio-economic Indicators:*
  - Schools, roads, hospitals
  - Industrial home, electricity
- *Crop-production:*
  - Food crops, cash crops, fodder crops
  - Home gardens, trees
- *Livestock Management:*
  - Cattle, small and large ruminants
  - Draft animals
- *Poultry Farming:*
  - Domestic/Commercial
- *Household Activities:*
  - Food preparation, water collection
  - Fuel collection, general, household care
  - Child care
  - Building maintenance
  - Craft production
- *Off-farm Activities:*
  - Carpet weaving
  - Hired labour
  - Employment
  - Any other.

### C. ACTIVITY ANALYSIS

- House hold activities by gender and age

- When are tasks undertaken
- Time involved and does this vary with age, rank or position or by economic status of the household
- How cultural and social values limit the mobility of women
- Time allocation to other remunerative activities.

#### **D. ACCESS TO & CONTROL OVER RESOURCES**

- Resources required for existing production practices
- Is the shortage/absence of a particular resource a constraint on current production
- Who have access to or control over these resources
- What are the income and expenditure streams for men and women including sources, uses and timing, etc.
- How and to whom new resources can be supplied
- Resources required for technology adoption
- Any suggestion/proposal (Farmer's views).

NOTE: Resources maybe: labour, capital credit, knowledge, market transport training, extension services.

#### **E. BENEFITS AND INCENTIVES**

- Who benefits from the output of current production and how
- What are the desired improvements in the existing system from view point of men, women and children
- What are the other non-farm income generating activities and how do they compare it with farm production enterprises.
- What are the incentives for men and women who contribute additional time or resources for improvement/change in the existing practices
- What incentives/disincentives are actually associated with the particular modifications and how these will affect the individual income streams
- How users or beneficiaries are expected to responded to any change
- Has change in/shift in resources resulted in a shift of beneficiaries.
- With the increase in production, is there increase in consumption, marketing and storage.
- Access of rural women to these outlets.

#### **F. DECISION-MAKING**

- Who is consulted in decision-making (co-operative beneficiary)
- Frequency of consultation
- Why included, criteria? rationale?
- How included, what Methodology
- If not included then why, reasons.

## ACTIVITY CHART

### Phase -- I

|                | (A)                                                                                 | (B)                                                                                                                                                        |
|----------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Activity       | -- National Workshop on the role of rural women in FSR.                             | Site Selection                                                                                                                                             |
| Objectives     | -- To analyze women's role in FSR of Pakistan.                                      | To assess options for project location<br>-- To diagnose problems/constraints women face in Barani farming system<br><br>-- To define their areas of skill |
| Methodology    | -- Country and provincial reports<br>field practicum<br>discussion among experts    | -- Field visit by women consultant and resource person.                                                                                                    |
| Responsibility | -- Consultants FSR/WC<br>-- Advisor FSR/MART Project<br>-- National Coordinator FSR | -- FSR/MART Project                                                                                                                                        |
| Output         | -- Preliminary workplan for Women Component.                                        | -- Village or sites selected according to the criteria (attached)                                                                                          |

### Phase -- II

|             | (A)                                                                                                              | (B)                                                                                                                                                                         |
|-------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Activity    | -- Formation of FSR, Women team                                                                                  | -- Training workshop                                                                                                                                                        |
| Objectives  | -- To form a team of technical and social scientists to work in a multi-disciplinary manner on specific problems | -- To provide knowledge about existing and future programme of women component to women involved in FSR.<br><br>-- Training, understanding and objective of informal survey |
| Methodology | -- Women consultants had individual group meeting with women scientists from various disciplines                 | -- Lectures, guidelines, mock interview<br>-- Integrate practical aspects with                                                                                              |

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(contd.)

(contd.)

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|                      |    |                                                                                                                              |    |                                                                                      |
|----------------------|----|------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------------------------------------------------------|
|                      |    | and briefing FSR program.                                                                                                    |    | theoretical by giving priority to doing rather than talking.                         |
| Responsibility       | -- | Consultant FSR/WC with advise from Advisor FSR.                                                                              | -- | Consultant/women program. Advisor FSR and National Coordinator.                      |
| Output               | -- | The team is formed as is attached                                                                                            | -- | An understanding was developed about informal surveys.                               |
| <b>Phase -- III.</b> |    |                                                                                                                              |    |                                                                                      |
|                      |    | (A)                                                                                                                          |    | (B)                                                                                  |
| Activity             | -- | Diagnostic study                                                                                                             |    | Report writing                                                                       |
| Objectives           |    | To diagnose constraints in crop production, livestock management, poultry farming and needed training and skills.            | -- | To design project, budget proposal.                                                  |
|                      |    |                                                                                                                              | -- | Coordination with collaborating agencies.                                            |
|                      |    |                                                                                                                              | -- | Assigning responsibilities.                                                          |
|                      |    |                                                                                                                              | -- | To develop strategies for implementation programme.                                  |
|                      |    | To develop an action plan for the uplift of females in Barani Area                                                           |    |                                                                                      |
| Methodology          | -- | Interdisciplinary approach assisted in understanding the relationship between tech and human element.                        | -- | Review of secondary data, information collected during informal survey.              |
| Responsibility       | -- | Women consultant and women multi-disciplinary scientists with advise and help from National FSR Co-ordinator and FSR Advisor | -- | Consultant - FSR/WC, advised by National Co-ordinator FSR and advisor FSR Programme. |
| Out-put              | -- | Need information with shared experience and knowledge were collected to plan and implement the developmental programme.      | -- | Planning of the implementation programme.                                            |
| <b>Phase -- IV</b>   |    |                                                                                                                              |    |                                                                                      |
|                      |    | (A)                                                                                                                          |    | (B)                                                                                  |
| Activity             | -- | Implementation of programme                                                                                                  |    | Monitoring/evaluation                                                                |

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(contd.)

(contd.)

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|                |    |                                                                 |                                                                   |
|----------------|----|-----------------------------------------------------------------|-------------------------------------------------------------------|
| Objectives     | -- | To raise the income of farm families and welfare.               | Outline project management strategies.                            |
| Methodology    | -- | Regular visits as per exploit schedule.                         | -- Fielding and Assiting                                          |
|                | -- | Contact village personnel.                                      | -- Preparing disseminate project results.                         |
| Responsibility | -- | Social and biological scientists.                               | -- Social and biological scientists.                              |
| Out-put        | -- | To design the research and extension programme for rural women. | -- To prepare report as guidelines for planner and policy makers. |

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## **SUMMARY OF THE DIAGNOSTIC/INFORMAL SURVEY IN FATEHJANG**

### **GENERAL INFORMATION**

1. The link roads between the village and main road are mainly kacha roads.
2. Health and sanitary conditions are very poor.
3. Literacy level is very low.
4. No cottage industries.
5. No women co-operatives and organization.
6. No home production technologies like refrigerators, hearths and irons, sewing machines, etc., to enhance the productivity of women.
7. Average farm size is 2.0 hectare.
8. Land fragmentation.
9. Cropping pattern is wheat-fallow-wheat and wheat-maize-wheat.
10. Crop in rabi are wheat and mustard.
11. Crops in kharif are maize, sorghum, millet, groundnut and sunflower.
12. Some household have some poultry. Contribution towards the income of the family and large ruminants are cattle and buffaloes used as draft and milch animals.
13. Mechanization is very low.
14. Inter-cropped in the wheat are mainly green fodder in winter with sorghum and millet and summer fodders.

### **Decision-making Role**

Women's decision-making authority is related to:

- Firstly by the belief that what women and men should do? Secondly, upon their level of contribution in the household income. Thirdly, upon the nature and extent of their participation in farm operation and household activities. The age of women is another important factor for their decision-making role.
- Women are consulted in crop production activities like use of seed, fertilizer, crop to be sown, farm machinery, and use of hired labour.
- Decision about consumption and processing of crop are totally made by women while men take the responsibility of marketing.
- In poultry all decisions are made by women because only they are responsible for poultry husbandry.
- Women fully decide about the home production like food preparation, general household care, building maintenance and craft production.

## **Problem/Constraints in Crop Production & Management**

1. Less employment of women in crop production activities because of the low crop production, which is due to low seed varieties, lack of fertilizer, capital, credit and modern technologies in cropping system since their employment is high in the harvesting and storage activities.
2. Problem of weeds.
3. No insecticide and modern techniques for grain storage.
4. No time saving technology in pre-harvest and post harvest process.
5. For vegetables and kitchen garden water is a major problem and the other is non-adopted varieties for arid conditions.

## **Problem in Livestock Management**

1. Lack of fodder (peak period all winter season).
2. Low breed varieties of sheep, goats and chickens.
3. Problem of disease breakout especially in poultry farming.
4. No marketing and credit facilities.
5. Lack of knowledge and training in livestock management.
6. Lack of health units.

## **Suggested Resolutions**

1. Research should be done to develop low cost strategies in crop production process suitable for women, such as peanut digging, grain cleaning and pest management control during storage.
2. Women's skills and knowledge should be enhanced through training in:
  - A: Seed Management:
    - Weed control.
    - Monitoring techniques.
    - Process of food.
  - B: -- Livestock Management, Feeding:
    - Disease control.
    - Health and hygiene.
  - C: Poultry Farming:
    - Vaccination.
    - Feeding.
    - Egg marketing.
    - Disease control.
    - Small credit schemes as ADBP's through lady MCOs farm and poultry products.
    - Development of audio-visual aid for training rural women.
    - Establishment of small rural industries.

## **R·search Areas**

- Women labour force in agriculture.
  - Women and technology development.
  - Women extension system and co-operatives.
  - Women in co-operative development.
  - Effect of un-safe grain protectants for grain storage.
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## PROGRAMME IMPLEMENTATION

| Activity                                                                 | Month |   |   |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------|-------|---|---|---|---|---|---|---|---|---|
|                                                                          | J     | F | M | A | M | J | J | A | S | O |
| 1. National Workshop                                                     |       |   |   |   |   |   |   |   |   |   |
| 2. Site selection and women scientists team.                             |       |   |   |   |   |   |   |   |   |   |
| 3. Training workshop and diagnostic study.                               |       |   |   |   |   |   |   |   |   |   |
| 4. Defining functional policy guidelines. Strategy and procedure.        |       |   |   |   |   |   |   |   |   |   |
| 5. Project management i.e. selection of master trainer from target area. |       |   |   |   |   |   |   |   |   |   |
| 6. Supporting and developing training courses.                           |       |   |   |   |   |   |   |   |   |   |
| 7. Supply of inputs or implementation.                                   |       |   |   |   |   |   |   |   |   |   |
| 8. Monitoring/Evaluation.                                                |       |   |   |   |   |   |   |   |   |   |
| 9. Reporting the progress for further reserach and extension programmes. |       |   |   |   |   |   |   |   |   |   |