Annual Report
1997-98

National Research Centre For Women In Agriculture
(Indian Council Of Agricultural Research)
Bhubaneswar - 751030

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NATIONAL RESEARCH CENTRE FOR WOMEN IN AGRICULTURE
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
BHUBANESWAR - 751 030

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PREFACE

It gives me immense pleasure in presenting the Annual Report of 1997-98, for the National Research Centre for Women in Agriculture (NRCWA), in the Golden Jubilee year of independence of India, which depicts the modest achievements of Centre with multidisciplinary approach. In this report major activities of the Centre are covered.

Participation of women in agriculture, horticulture, animal husbandry, fisheries and allied fields has always been appreciated without any recognition and recording their contribution. By and large they have remained " Invisible Workers " because most of their activities are carried out within the confines of home steads. Womens' importance in agriculture is of significance to agricultural extension and research because they have almost different production objectives than a man, limited access to resources, less educated and more constraints on time and energy due to her responsibilities as a home maker. This Centre is engaged in research and training with the objective to act as repository of information relevant to women in Agriculture, strengthening use of gender analysis in research and technology development, developing training module and imparting trainings.

The Centre is at present in infancy stage. During the period under report significant development has been made by the Centre in various aspects like infrastructure development, staff recruitment and maintenance of close linkage with sister institutes and departments. A workshop-cum-Training on " Gender Implications in Family Based Food and Economic Security Systems " was organized from April 19-25, 1997 for women participants from different KVKs of West Bengal and Bihar.

I would like to express my indebtness and sincere gratitude to Dr. P. Das, Deputy Director General (Agriculture Extension), ICAR for his constant guidance and encouragement to tackle with the hurdles in development of this Centre. The timely support of Dr. B.N. Chaoudhary, ADG (LLP) and Dr. B.S. Hansra, ADG (AE) are also highly solicited.

I wish to compliment with appreciation of all Scientific, Technical and Administrative staff of the Centre for the active involvement in development of Centre, compilation, editing and preparation of this Annual Report.

S.S. GHOSH
Director.

Bhubaneswar.

EXECUTIVE SUMMARY

The National Research Centre for Women in Agriculture was established in April 1996 in a rented building at Bhubaneswar. Since then the NRC is in the process of creating all infrastructural facilities like procurement of 61.60 acre of land from OUAT, Bhubaneswar, purchase of furniture, E-mail and Fax etc. Recruitment of a few administrative, technical and scientific staff are in progress.

Training modules have also been developed on gender implications in family-based food and economic security systems. A workshop-cum-training programme on food and economic security systems was also organised for 7 days from April 19-25th, 1997 at the NRC. A total of 12 Home scientists belonging to the KVKs of Bihar and West Bengal participated in the programme.

Agro-ecosystem analysis applying PRA tools was conducted in two villages i.e. Pradhan Sahi and Jamukoli in Khurda district of Orissa. It led to the fact that contribution of women in food and economic security in the families is less, restricted by social factors and opportunity for supplementary income resources. The relevance of gender implications in food and economic security thus assumes greater importance.

The boundary of 61.6 acre site area of NRCWA were ear marked and necessary process of construction of boundary wall was undertaken with CPWD by depositing Rs. 18.44 lacks as first instalment of estimated construction cost. A few scientific and administrative staff were recruited.

3. INTRODUCTION

Considering the predominant role of women in agriculture and allied activities, the Working Group of Agricultural Research and Education constituted by the Planning Commission recommended to establish a National Research Centre for Women in Agriculture (NRCWA) by the Indian Council of Agricultural Research during the Eighth Five Year Plan. Thus, the Centre was established and started functioning at Bhubaneswar since April, 1996.

The mandate of the NRC is to develop technologies appropriate to farm women of different production systems and to disseminate it backed by the increased sensitivity and capability of research and development specialists addressing the issues pertaining to gender implications in agriculture and allied activities. The objectives of the NRCWA are as follows:

1. Acting as repository of information relevant to women in agriculture,
2. Strengthening the use of gender analysis in research and technology development to ensure that womens' as well as mens'agricultural enterprises and operations are fully considered for defining research programmes and setting priorities,
3. Collaborating in women-specific research, education and technology assessment and refinement with relevant national and international organisations,
4. Developing training modules and imparting training and publication of manuals for sensitising gender related issues in research/programme/policy development,
5. Developing and testing women specific extension models for technology transfer that are to be promoted through regular extension agencies by collaborating with SAUs/ ICAR Institutes,
6. Providing leadership and sponsor training programmes in order to strengthen the knowledge and skill related to gender implications in farming systems approach for the researchers and extension personnel and
7. Providing consultancy services within and outside the country on women-specific research/ project/programme development.

The NRCWA conducted a workshop-cum-training programme on Gender Implications in Family Based Food and Economic Security Systems during April 19-25, 1997 in which 13 women scientists from different parts of the country participated. The overall aim of the workshop-cum-training programme was to enhance the capability of the participants to develop research, extension, development and policy agenda for addressing gender issues and other related social concerns in family based food and economic security systems. The specific objectives were that by the end of the workshop the participants will be able to:

- understand the concept of family based food security and production systems,
- learn gender implications in family based food security patterns practised under different production systems,
- acquire skills in handling participatory appraisal tools for understanding agro-ecosystems pertinent to food and economic security with gender concerns and

- develop action plan for integrating gender concerns in research and extension agenda to support food security in family based modules.

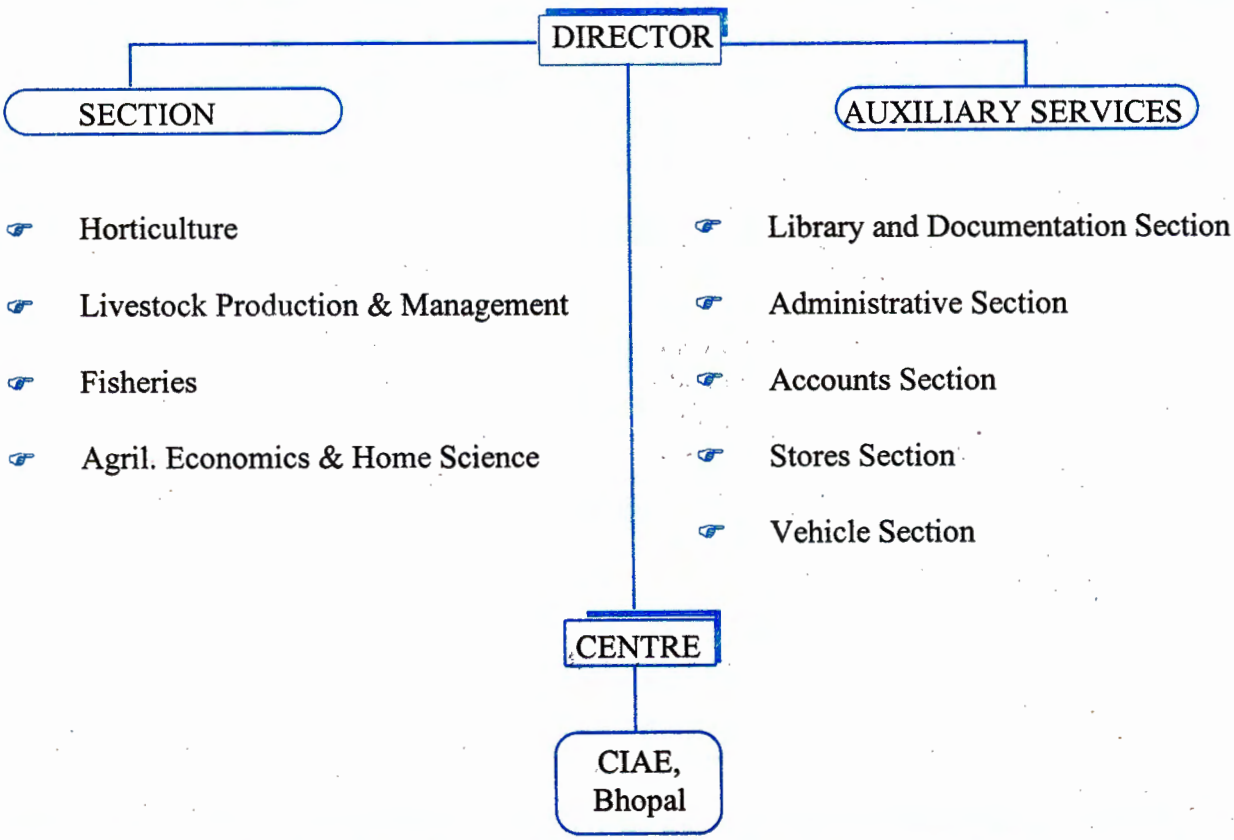
The programme was designed on participatory training mode in the framework of Experiential Learning Cycle (ELC) using the training methods like Interactive Lecturette(IL), Participatory Discussion, Large Group Exercise (LGE), Small Group Exercise (SGE), Case Study, Games, Films and Field Visit to various farming systems.

The whole concept was further operationalised and practised through a village study in order to find out the applicability of the methodology in understanding the gender perspective and their applications in reality.

The NRCWA is in the process of building up the institute. At present it has 2 Principal Scientists in the field of Horticulture and Livestock production & Management, one scientist in the discipline of Fisheries & another Agril. Economics, one Training Assistant (Home Science), one T_1 and one Asstt. Administrative Officer. The total amount released during the year 1997-98 was 65.0 lakh of which, 40.99 lakh was utilised. The NRC has a sub-centre at CIAE, Bhopal for gender specific research in agricultural engineering.

Organisational Set-up (As on 31.03.1998)

NATIONAL RESEARCH CENTRE FOR WOMEN IN AGRICULTURE, BHUBANESWAR



CHARACTERISTICS OF THE STUDY SITE

4. ACHIEVEMENT

Trainning

A Workshop-cum-training programme was conducted by NRCWA at Bhubaneswar during April 19-25, 1997 on 'gender implication in family based food and economic security systems' for 13 participants from KVKs of Bihar and West Bengal. The details of this workshop-cum-training programme are presented herein.

For understanding the systems of food and economic security prevailing in farm families and the related problems, it was decided to study villages that are poorly endowed. Accordingly, two villages, namely, Pradhan Sahi and Jamukoli in Khurda district of Orissa which are about 17 km away towards south from Bhubaneswar were studied. Both the villages are identical in terms of socio-economic-cultural and agro-climatic conditions and represent typical villages of Khurda district where rainfed agriculture is predominant and is known to be a backward area. Total area of the villages is 138.0 ha, out of which 70.0 ha is under cultivation, the remaining area is cultivable wasteland under fruit orchard (6.0 ha) and household occupancy (2.0 ha). About 77 percent of the cultivated land is rainfed. The annual rainfall is about 1500 mm. Thus small production system (SPS) which is complex, diverse and risk-prone (CDR) is prevalent in 54.0 ha, where as green revolution production system (GRPS) covers 16.0 ha. Out of 70.0 ha cultivated land, 14.0 ha is upland, 50.0 ha is medium land and 6.0 ha is lowland. Irrigated area of 16.0 ha encompasses low and medium lands. The transect map is depicted in Fig. 1.

Socio-economic condition

The total population of the villages is distributed caste-wise into 3 groups namely, scheduled caste, schedule tribe and other castes. The average literacy rate is 26.8 per cent. The literacy rate of male is 32.9 per cent and for female it is 20.1 per cent. The main occupation of the 90 per cent families is agriculture. According to farmers' perception, the families are categorised into 3 groups-good well-being (22 percent), moderate well-being (44 percent) and poor well-being (34 per cent) who differ in their income and expenditure patterns.

Indigenous technological knowledge

Indigenous technological knowledge (ITK) that is practised over generations is presented in Table 1. The ITK covers pest management, grain storage and cattle disease management which are mostly practised by women.

Seasonality

Seasonality of important parameters that affect food availability and income are presented below :

Rainfall

Data suggested that although rain is received in April to December, it is heavy in the months of July and August and receeding thereafter with traces during January, February, March and April. Under rainfed situations, water availability for crop production starts from the month of June.

Land type	Upland	Medium land	Lowland
Soil	Hard and rocky, gravelly	Hard and sandy loam	Loamy
Land use	Social forestry, fruits, houses,animals,homestead enterprises	Field crops : Rice, blackgram, greengram	Field crops : Rice,blackgram, greengram
Average productivity		Cow-1.5 lit milk/day/animal Rice (*Kharif*) - 15.0q/ha Blackgram/greengram- 3.0 q/ha	Rice (winter)-40.0 q/ha Blackgram/greengram- 3.0 q/ha
Trees	Eucalyptus, Acacia, cashewnut, jackfruit, bamboo	-	-
Livestock	Cow, bullock, sheep, goat, poultry	-	-
Water resource	Hand pump	Well and lift irrigation	Lift irrigation
Crop sequence	-	Rice-blackgram/greengram	Rice-rice/blackgram/ greengram
Problem	Undulating stony and gravelly soil, unavailability of irrigation facilities(*rabi*), soil erosion. Low productivity of meat in sheep and goat. Low productivity in homestead garden. Lack of irrigation. Acidic soils, deficient in plant nutrients. Disease in bamboo	Fallow in *rabi*. Low and unstable productivity of rice	Unassured irrigation water supply for winter rice
Opportunity	Private/community forestry, horticulture, increasing productivity of animal husbandry enterprises and homestead garden.Increasing employment through various off-farm activities	Increasing productivity of rice, increasing cropping intensity	Increasing productivity of rice in sequence under irrigated conditions. Increasing cropping intensity in rainfed conditions

Fig.1. Transect map of Pradhan Sahi and Jamukoli villages

Table 1. Indigenous technological knowledge in practice

Subject	Practice
Crop production	1. Spraying of cow-dung @ 1kg/litre of water/acre for control of leaf blight in paddy.
Fruit processing	1. Preserving lemon as pickle by keeping in 60% saline water.
Grain storage	1. Storage of foodgrains by putting dried neem *(Azadirictaindica)* leaves in it.
Storage vegetable seeds	1. Application of smoke on dried vegetable seeds to improve its keeping quality. 2. Mixing of cowdung to increase the keeping quality of bitter gourd seed for longer time.
Potato storage	1. Storage of potato in sand to avoid spoilage.
Cattle disease management	1. In case of Filariasis in cattle, 6-7 eggs are mixed in 100g warm mustard oil and applied. 2. In case of body pain, 20-25 cashewnuts are cut into small pieces, fried in little amount of ghee before feeding the medicine to the cattle.

Crop

Under small production system, paddy is the only crop cultivated in monsoon (*kharif*)season. Blackgram and greengram are taken as paira crops in post - monsoon (*rabi*) season. Vegetables are taken only in the backyards. Rice-rice cropping sequence is the predominant system under green revolution production system.

Food availability

Rice produced in their farms is available to the farmers, on an average, for about 8 months during December to July .The quantity available decreases with time. Pulse is available from the month of January to July in decreasing amount. However, availability of food varies with well-being categories. Families of good well-being have food available to them almost round the year. Moderate well-being families have to depend half of the year on purchased food. It is two third for the families of poor well-being families category.

Fodder

Information showed the variability in availability of straw, husk, green grass and green leaves which are the major sources of fodder for animals (mostly cows and bullocks with little number of goats and sheep). Fodder availability depends on amount and distribution of rainfall that influence crop and grass yield.

Fuel

The main sources of fuel for cooking are fire wood, dry leaves and cowdung cakes. Availability of fire wood is more in the rainy season during July to November . Fuel requirement is met mostly with dry leaves/twigs of trees and cowdung cakes for the remaining 7 months of the year.

Income

Income of farm families belonging to moderate well-being categories is highest in the month of November which declines over the months . Sources of income are: (i) own land based, and (ii) working as labourers in others agricultural lands. Income from outside source is practically nil in the months of August, September and October. Seasonality of income is matched with harvesting of crops.

Expenditure

Farm families incur higher expenditure in the months of October, January, February and March that coincide with religious festivals. Farmers borrow money from rich persons in the village mortgaging their assets in the months when expenditure is more than income.

Economic hardship

Economic hardship is experienced by families belonging to all the 3 well-being categories for different periods . Evidently hardship is faced by longer period by the people of poor well-being category during dry season and at planting time in monsoon season.

Human diseases

Data showed that Diarrhoea and Filaria are fairly spread over in the rainy month of August causing further hardship to the people. Scabies affect the people in the months of March, April and May.

A view of village Pradhan Sahi

Farm women engaged in post harvest operation

Labour availability

Gender-wise availability of labour during the year indicated that labour availability is seasonal depending on the need of raising crops, being higher during paddy transplanting and harvest periods. While elderly men work as wage earner, elderly and adult women hardly work in the field as wage earner even though money is required at home. This is due to social taboo prevailing in the villages.

Labour migration

Migration of adult male to Bhubaneswar city for livelihood earning is prominent in lean agricultural season and economic hardship periods in the months of April, May and June . Migration reappears in the months of August, September and October after completion of paddy transplanting in the villages, followed by crop harvest and post - harvest activities. Notably there is no female labour migration despite hardship.

GENDER IMPLICATIONS IN FOOD SECURITY SYSTEMS

Information presented in the previous chapter provides insight of the resource availability in two villages and the status of the farmers as influenced by the resource base. Involvement of women in the land based activities is regulated by social norms, biased by caste. Gender implications in different aspects are highlighted in this chapter.

Activity analysis

Irrespective of well-being categories, women of higher castes do not participate in the agricultural activities as shown in Table 2. These women,however, handle post-harvest operations, pertaining to paddy. Women of lower castes are in contradiction to it, getting themselves involved in field activities for helping themselves to reduce expenditure on labour. However, women of higher castes having animal component in their farming system enterprises take substantial care of the enterprise. Animal husbandry is conspicuously absent with the farmers of lower caste due to financial constraints.

Livelihood

Livelihood analysis has revealed income and expenditure patterns and contribution of women among the farmers of different well-being categories. Agriculture contributes 60 percent of income, followed by service (25 percent), business (10 percent), animal husbandry (3 percent) and interest from money lending (2 percent) for families of good well-being category. Food accounts for 70 percent of expenditure. However, women's contribution in income sources are agriculture (15 percent), animal husbandry (30 percent), business (10 percent) and interest (10 percent). Except service, where men's contribution is 100 percent, women's contribution is perceptible only to a small extent .

Families of moderate well-being earn 60 percent of income by working as labourer, whereas contribution of agriculutre is 40 percent. Expenditure on food is 60 percent of the total. A substantial fraction (20 percent) goes for health care. Women contribute 20 percent as labour wage, out of the 60 percent income generated by the family. Women's contribution in agriculture is 35 percent .

Labour wage is the only source of income for the families of poor well-being category. However, food and health care alone takes out 94 percent of expenditure, where contribution of women is 20 percent

The information furnished above clearly indicate that poor resource base prevailing in the villages has led to a situation where food is not accessible to most of the farm families throughout the year. Income from agriculture needs to be supplemented for sustenance mostly by labour wage. Social structure and opportunity for alternate enterprises limit women in contributing to a greater extent in family income busket.

Table 2. Gender disaggregated activity analysis

Activity	Men	Women of higher caste	Women of lower caste
Agriculture			
Seed bed preparation	✓	✓	✓
Nursery raising	✓		✓
Land preparation	✓		
Transplanting	✓		✓
Manuring	✓		✓
Agro-chemical application	✓		✓
Weeding	✓		✓
Harvesting	✓		✓
Threshing	✓	✓	✓
Winnowing	✓	✓	
Paddy boiling		✓	✓
Drying		✓	✓
Milling	✓		
Storing		✓	
Marketing	✓		
Nutrition garden		✓	
Animal husbandry			
Grazing	✓		
Animal care		✓	
Milking		✓	
Selling milk [within village]		✓	
Selling goat at market	✓		
Poultry care		✓	
Selling egg [within village]		✓	

GENDER-BIASED OPPORTUNITIES

An analysis of the village situation suggests that a multi-pronged approach is required for upliftment of the economic conditions of the farm families in general, and to enhance contribution of women in family income, in particular.

Land based enterprises

On priority (determined by matrix ranking), low productivity of *kharif* rice in midland and low milk yield in cows are the major problems of the families belonging to good well-being group. Problem trees are presented in Figures 2 and 3. For moderate well-being families, low yield of *kharif* rice in midland and low productivity of vegetables in kitchen garden are the major problems. The problem tree for low vegetable yield is given in Fig.4. The problem of low meat yield of sheep and goat is shared by both moderate and low well-being families for which the problem tree is depicted in Fig.5. Women of poor well-being category face acute shortage of work opportunity. The problem tree for the same is given in Fig.6. The problem cause diagram for poor human health of poor well-being families is depicted in Fig.7.

Intervention decision matrix

Gender-focussed intervention decision matrices that provide information on the intervention points, types of interventions and the programme design for the problems identified on priority described above for the good, moderate and poor well-being families are presented in Tables 3,4 and 5. As location-specific technology is yet to be developed, various types of activities such as awareness camps, training, demonstration and on-farm research (OFR)/on-farm trial (OFT) are required to be undertaken as emerged from farmer-scientist interface. Gender implications for each solution of the problems which will benefit the women have been specially mentioned.

Off-farm activities

As envisaged, solution of the problems of land based activities will increase accessibility of farm families to food due to higher crop production and income generation. However, social taboo which decides involvement of women in farm activities will limit contribution of women in these enterprises, particularly for higher castes. While the women of good well-being families can remain satisfied with the limitation, women of moderate and poor well-being families expressed concern for starting enterprises that will provide them additional income. The choice matrix incorporating different criteria is presented in Table 6. Poultry and goatery which are in little existence in the villages, but offer good scope for income generation came out to be the preferred most. Other enterprises which have opportunity in preference are agarbatti (sandal stick) making; cattle rearing; tailoring; papad, bari and mixture making; knitting and embroidery and soap making.

Table 3. Gender-focussed decision matrix of families of good well-being category under small production system

Problem	Intervention point	Key question	Hypothesis	Type of intervention	Proposed programme	Gender implication
Low productivity in midlands *kharif* Rice	a. Use of local seeds	a. How use of improved seed will be made?	a. The use of quality seed will improve productivity.	Technology	OFR/demonstration	Use of HYV seeds, fertilisers and plant protection chemicals will increase labour demand in rice cultivation with higher production and thereby women and men particularly of moderate and poor well-being groups will have more employment opportunity, in addition to harvesting more paddy in their own fields. Accessibility to more food grain and more wage earning, particularly by women will be a step for food and economic security.
	b. Imbalanced and inadequate use of fertiliser	b. How balance and adequte use of fertilisers will be made?	b. Balanced and adequate use of fertiliser will improve productivity.	Technology	OFR/demonstration	
	c. Disease and pest infestation	c. What type of control measures will be used?	c. Adoption of disease/pest control measures will improve productivity.	Technology	Demonstration	
	d. Lack of awarness	d. How to create awareness?	d.Awareness camps will lead to popularise use of improved methods.	Extension	Awarness camp	

OFR = On-farm research

Contd...

Problem	Intervention point	Key question	Hypothesis	Type of intervention	Proposed programme	Gender implication
Low milk yield in cows	a. Improper feeding	a. How level of feed quality can be enhanced?	a. Feed supplements/enrichment with locally available materials will provide quality feed leading to higher milk yield.	Technology	OFR / demonstration	Almost all the livestock activities pertaining to feed and health care are carried out by farm women. With these programmes farm women will be benefitted directly and get opportunity to become educationally and economically empowered which will ultimately help to provide economic security to the families.
	b. Local non-descript. breed	b. How the inferior breeds can be improved?	b. With the introduction of artificial insemination using semen from superior exotic breeds.	Technology	Demonstration	
	c. Occurence of foot and mouth disease	c. How the foot and mouth disease can be checked?	c. With proper preventive measures foot and mouth disease can be checked.	Technology	Demonstration / training	
	d. Lack of knowledge	d. How knowledge can be improved?	d. Improved knowledge regarding cow rearing will enhance awareness.	Extension	Training	

Table 4. Gender-focussed decision matrix of families of moderate well-being category under small production system

Problem	Intervention point	Key question	Hypothesis	Type of intervention	Proposed programme	Gender implication
Low productivity of vegetables in kitchen garden	a. Recommended fertiliser/ compost is not used	a. How the use of recommended fertiliser/ compost can be made?	a. Use of recommended fertiliser/ compost will increase productivity.	Technology	Demonstration	Kitchen gardening is the domain of women. Increased productivity of vegetables in kitchen garden will not only provide them with the opportunity of part time engagement but the families will have access to balanced diet.
	b. Non-availability of improved seed/seedling	b. How and what type of improved seed/seedling can be made available?	b. Improved seed/ seedling will increase productivity.	Technology	Demonstration	
	c. Lack of knowledge	c. How villagers' knowledge can be upgraded?	c. Improved knowledge of villagers will enhance productivity.	Extension	Training	

Table 5. Gender-focussed decision matrix of families of poor well-being category under small production system

Problem	Intervention point	Key question	Hypothesis	Type of intervention	Proposed programme	Gender implication
Low meat yield in sheep/ goat	a. Lack of improved breeds	a. How to improve the breeds of sheep/ goat?	a. With the upgradation of breeds meat yield can be increased.	Technology	Demonstration	Income from small animals like sheep and goat generally goes in the hands of women. Therefore, these activities will empower them economically.
	b. Lack of quality fodder	b. How the fodder quality can be improved?	b. With introduction of quality fodder meat yield of sheep/ goat can be enhanced.	Technology	OFR/ demonstration	
	c. Lack of health care	c. How the sanitation can be improved and disease prevention measures can be provided?	c. Use of preventive measures will check the disease. Medicare will cure the diseased animals.	Technology and extension	Demonstration/ training	
	d. Lack of knowledge	d. How the knowledge regarding sheep/ goat rearing can be provided?	d. Proper technical knowledge will improve the management of sheep/goat and thereby meat yield will increase.	Technology	Training	
	e. Lack of shearing	e. How wool shearing can be popularised?	e. With proper knowledge on shearing, meat production can be increased.	Extension	Demonstration / training	

Contd..

Problem	Intervention point	Key question	Hypothesis	Type of intervention	Proposed programme	Gender implication
Non-availability of work opportunities among women	a. Lack of opportunities for off-farm activities	a. How oppertunities of undertaking off-farm activities can be provided?	a. Undertaking appropriate off-farm acvities by women will provide them gainful employment.	Technology	Demonstration	Providing work opportunities to women through various off-farm activities would solve their problem of unemploymnet, thereby ensuring income to the families.
	b. Lack of skill	b. How skill pertaining to off-farm activities can be imparted and improved?	b. Skill-oriented training will enable them to under take off-farm activities.	Extension	Training	
Poor humam health	a. Negligible cultivation of pulses/vegetables/fruits in the village	a. How cultivation of pulses/vegetables/fruits can be enhanced in the village?	a. Introduction of pulses/vegetables/fruits in existing cropping system in backyards will enhance their cultivation.	Technology and extension	OFR/ demonstration	The area mainly being monocropped with rice is unable to provide balanced food to most of the families leading to poor state of the people in general and women in particular. These activities will not only meet the reqirement of food security but also will provide employment and economic security to both men and women in order to improve health status.
	b. Imbalanced food	b. How villagers can be motivated for taking balanced food?	b. Nutrition education programmes will motivate the villagers for balanced food.	Extension	Training	
	c. Lack of income generating activities	c. How income of women can be enhanced?	c. Introduction of suitable off-farm income generating activities will increase the family income and thereby nutritive food could be made available to the families.	Technology	Demonstration	

Table 6. Choice matrix of women of moderate and poor well-being families for off-farm activities

Criteria	Tailoring	*Agarbati* making	Knitting	Embroidery	*Papad* and *bari* making	Mixture making	Fruit and vegetable preservation	Soap making	Poultry	Goatery	Cattle farming
Availability of raw materials	◎◎◎	◎◎◎	◎	◎	◎	◎	◎	◎	◎◎◎	◎◎◎	◎◎◎
Availability of know-how	◎◎◎	◎◎◎	◎	◎	◎◎	◎◎	◎	◎	◎◎◎	◎◎◎	◎◎◎
Marketing prospect	◎◎	◎◎◎	◎	◎	◎◎	◎◎	◎	-	◎◎◎	◎◎◎	◎◎◎
Social compatibility	◎	◎◎◎	-	-	◎◎	◎◎	-	-	◎◎◎	◎◎◎	◎◎
Economic feasibility	◎◎	◎◎	◎	◎	◎◎	◎◎	◎	-	◎◎◎	◎◎◎	◎◎

Legend

Importance of enterprise :	
Most important	◎◎◎
Moderately important	◎◎
Not so important	◎

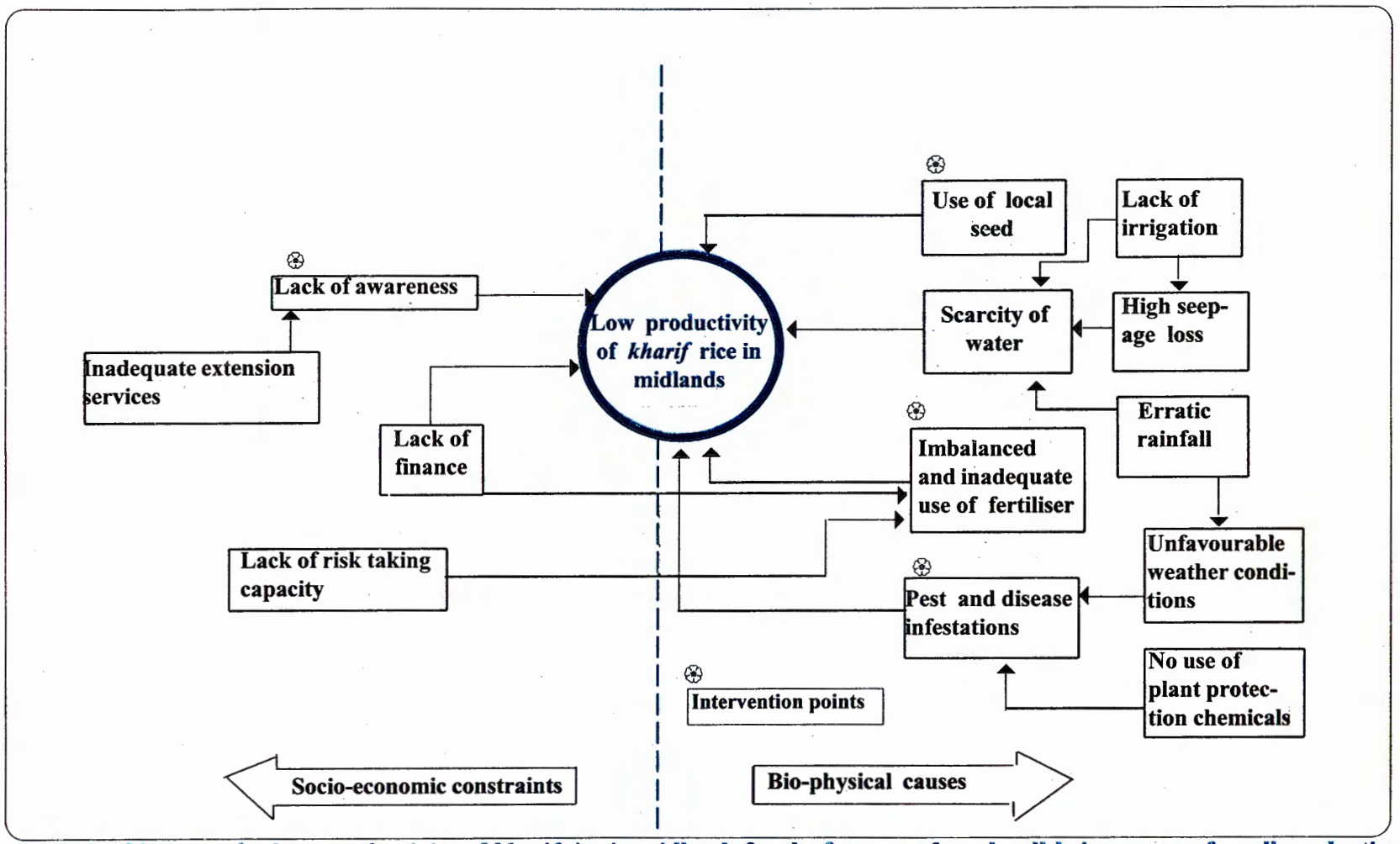


Fig. 2. Problem tree for low productivity of *kharif* rice in midlands for the farmers of good well-being group of small production system

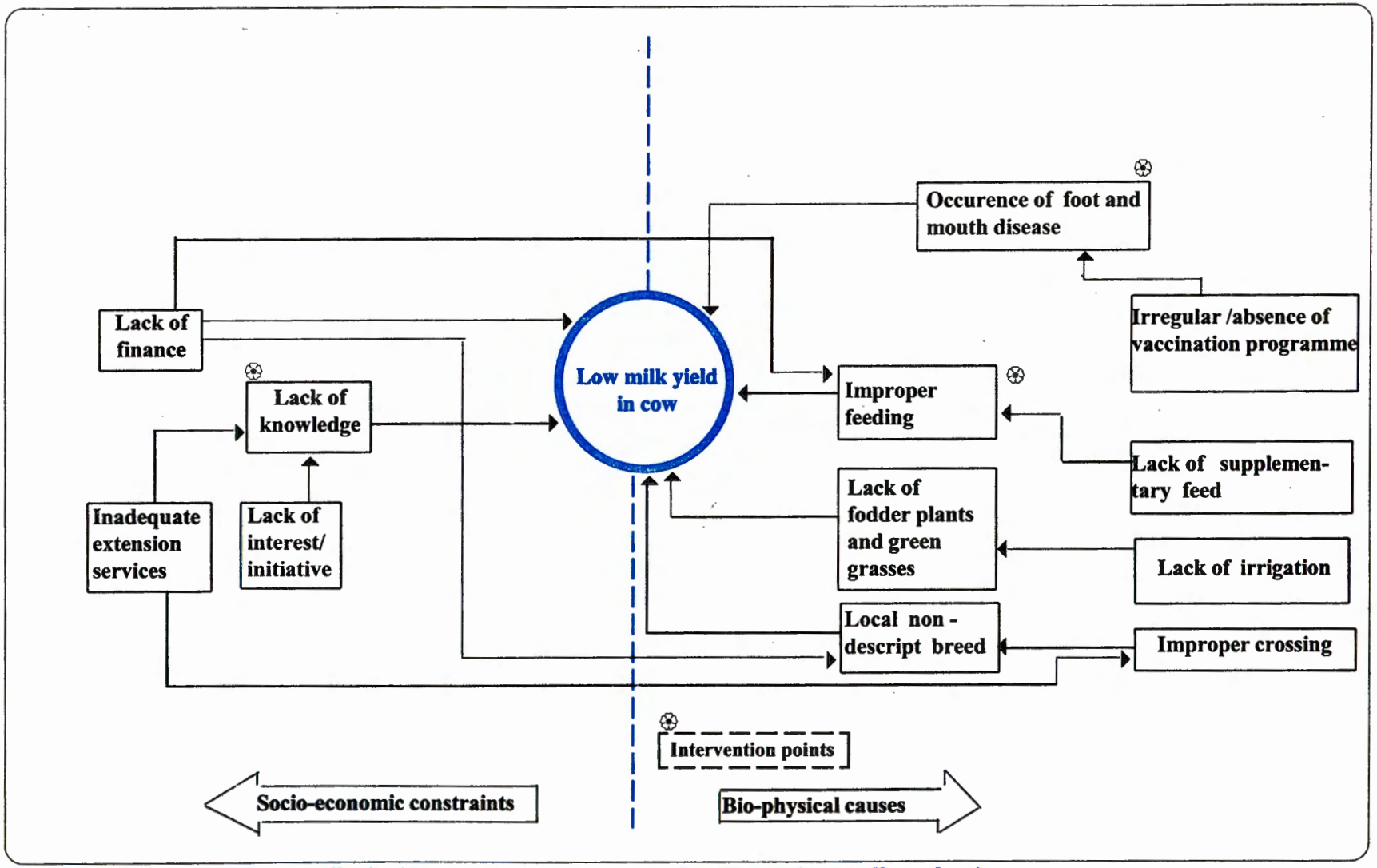


Fig. 3. Problem tree for low milk yield in cow of good well-being families under small production system

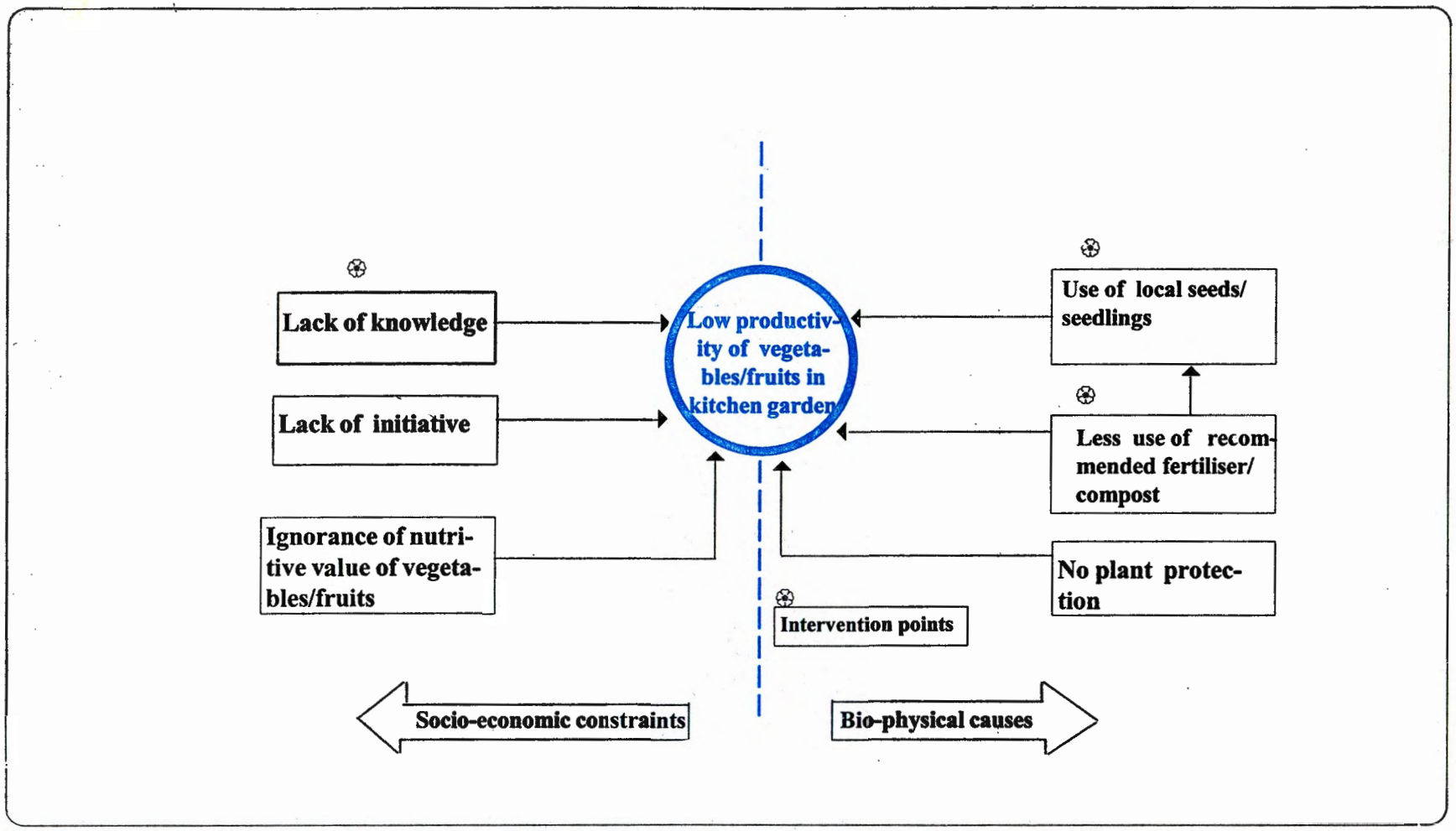


Fig. 4. Problem tree for low productivity of vegetables/fruits in kitchen garden for moderate well-being families of small production system

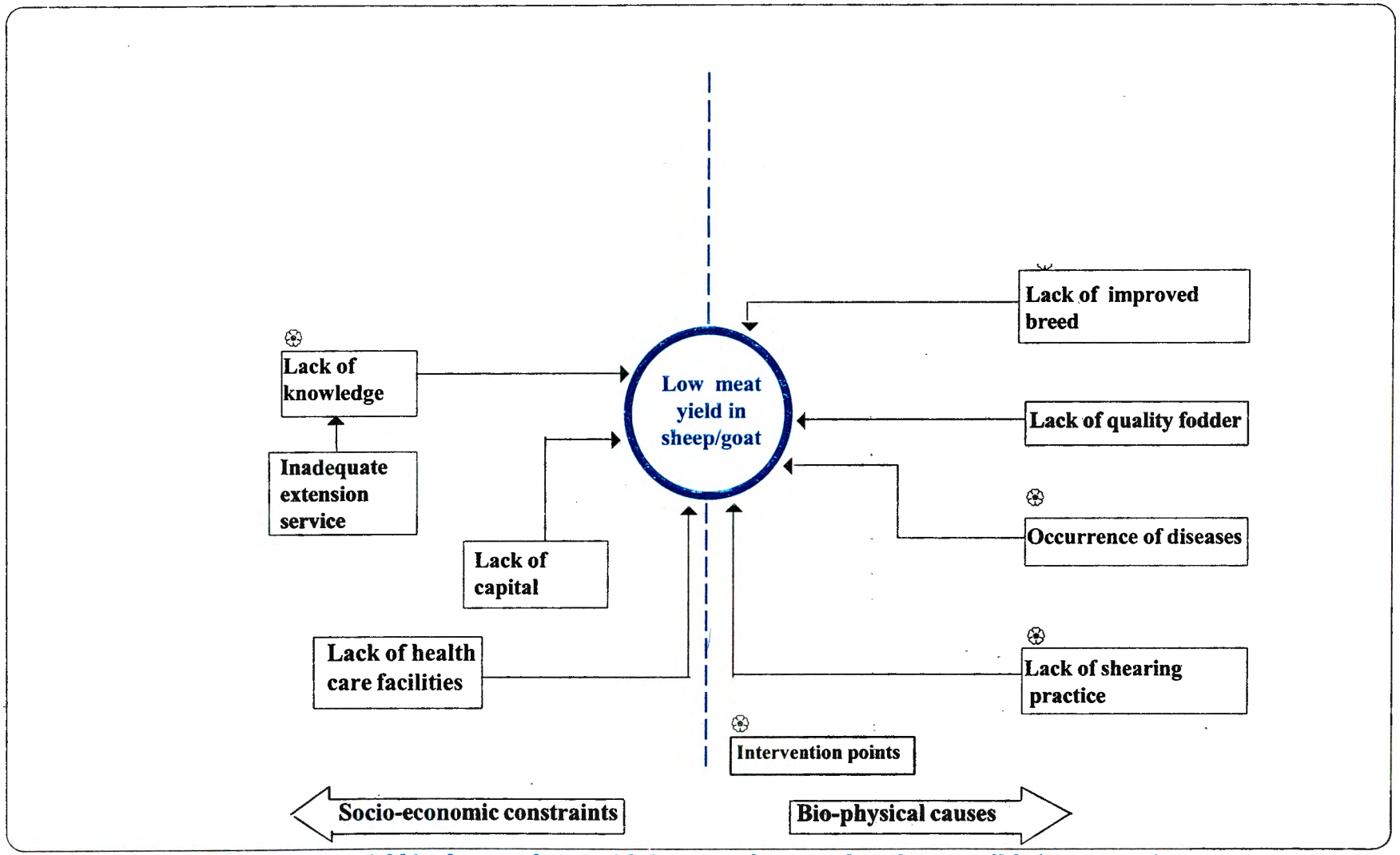


Fig. 5. Problem tree for low meat yield in sheep and goat with farmers of poor and moderate well-being categories

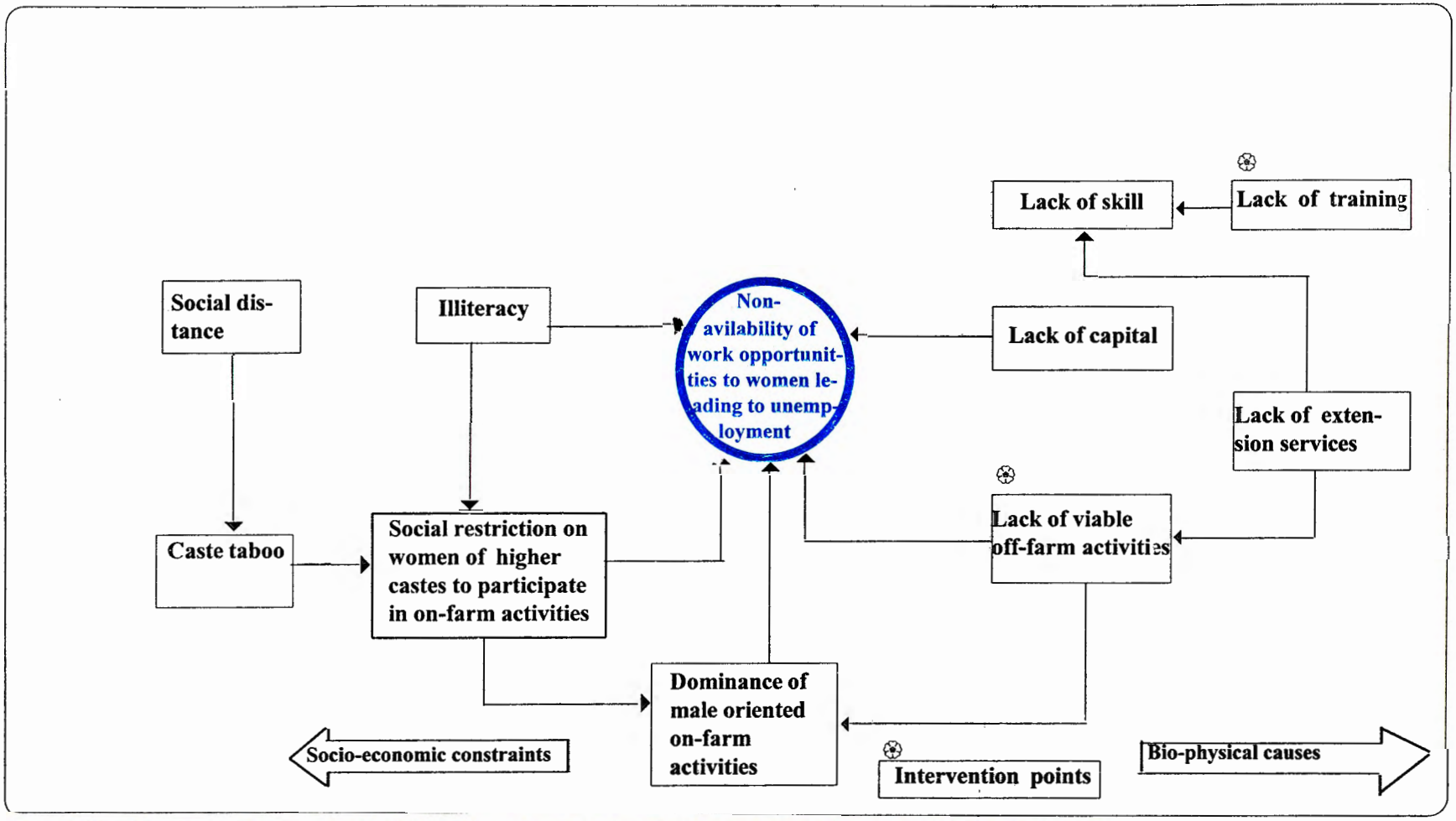


Fig. 6. Problem tree for non-availability of work opportunities for women of poor well-being category

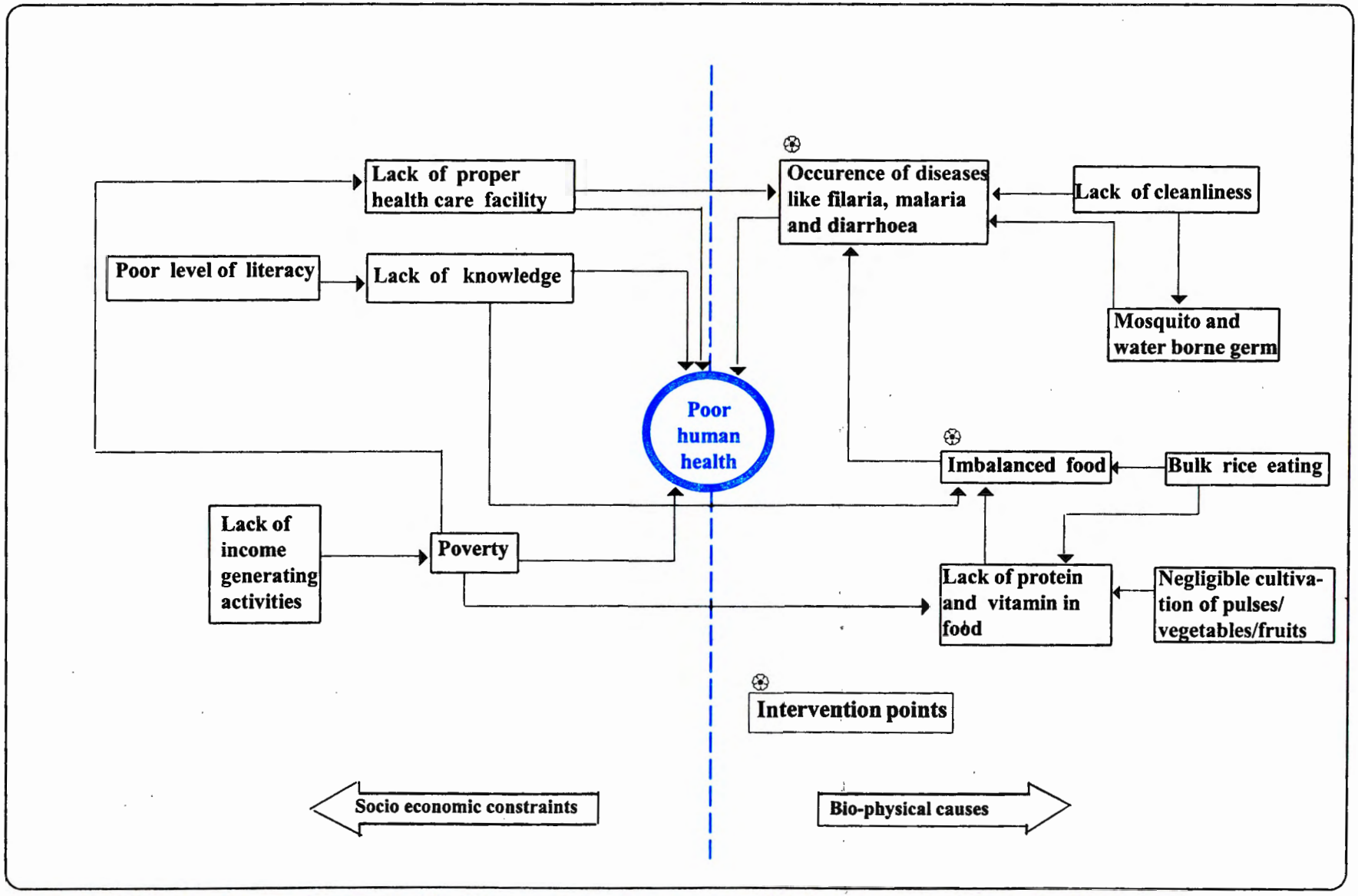


Fig. 7. Problem tree for poor human health of farmers belonging to poor well-being group of small production system

Farmers of Pradhan Sahi and Jamukoli villages in Khurda district of Orissa, a typical rainfed region, where agricultural output with traditional technology is dependent on the vagaries of monsoon have access to food from their own production for 4 to 10 months depending on the well-being group to which they belong. Money for purchase of food is earned by the moderate and poor families by working as labourers in the village or migrating to city. With poor quality food, the associated problem is poor health of the farmers. Contribution of women in food and economic security in the families is less, restricted by social factors and opportunity for supplementary income source(s).

Result of the agro-ecosystem analysis conducted by applying PRA tools have brought into sharp focus the problems encountered by the farmers and the agenda of action that will be acceptable to the farmers for upliftment of their economic conditions through better resource use and opening of income generating enterprises. The agenda includes training, demonstration and on-farm research/trial, besides general extension activities for creating awareness. Gender implications of the action plan highlight the advantages that will be harvested by farm women. In the circumstances, when men are the major contributors of family income by working in the village and also as seasonal labourers in the nearby city, women have enough time to engage themselves in profit making activities. The relevance of gender implications in food and economic security thus assumes greater importance. The study conducted would lead to development of women with special reference to the development of women in Pradhan Sahi and Jamukoli villages.

5. IMPACT EVALUATION OF TRAINING PROGRAMME

NRCWA organised a Workshop-cum-Training programme on "Gender Implication in Farming Systems approach" during May 11 to 12 of 1996 with the objectives of enhancing the capability of participants to develop research, extension, development and policy agenda for addressing gender issues.

Another Workshop-cum-Training programme entitled " Gender Implications in Family Based Food & Economic Security Systems " was organised during 19th to 25th April, 1997 with the objectives of enabling the participants to (1) understand the status of family based food security and production system, (2) learn gender implications in family based food security patterns practised under different production systems, (3) acquire skills in handling PRA tools for understanding agro-ecosystem pertinent to food and economic security with gender concern and (4) develop action plan for interesting gender concerns in research and extension agenda to support food security of family based modules.

The impact of above two trainings is under study with the following objectives:

OBJECTIVES

1. To assess the knowledge level of trainees on gender implications,

2. To measure the attitude of trainees towards gender issues in Farming and family based food and economic systems,

3. To assess the extent of skill improvement in using PRA technique for agro ecosystem analysis as proceived by respondents and

4. To assess the extent on the job application of gender issues by the respondents.

QUESTIONS TO ASSESS KNOWLEDGE LEVEL

A. Fill up the Blanks with appropriate words

1. Agriculture in our country may be classified into three different production systems such as .....&..... .....&.....

2. Women's involvement and drudgery is highest in _____ type of production system.

3. Four patterns of agro-ecosystem analysis are _____ , _____, _____ _____ & _____.

4. Four main characteristics of an agro-ecosystem are _____, _____, _____&_____.

Transect mapping of village Pradhan Sahi

Participants preparing PRA report

B. Carefully read the following statements and Tick Mark against True or False (T/F)

1. Involvement of women is lowest in GRPS (T/F)
2. Stability is the ability of a system to maintain productivity when subjected to stress (T/F)
3. Milking and distribution of milk are the two activities undertaken mostly by women of Northern India (T/F).
4. Under SPS, the role of women in rice production is distinct in Post harvest operations (T/F)
5. Transect is used for knowing the historical background of a particular region (T/F)
6. PRA stands for Preparatory Rural Appraisal (T/F)
7. Experiential learning cycle is the most effective training method imparting skill (T/F)
8. Equatibility character of a system will deprive farm women of their due benefits from the system (T/F)
9. Analysis of activities, access and control over resources and benefits is one of the objectives of gender analysis (T/F)

ATTITUDE STATEMENT

Sl. No.	Particular	SA	A	UD	DA	SDA
1.	Economic freedom will seriously impair women's household obligations.					
2.	In certain enterprises, women are seen to be more enterprenuring than man.					
3.	Farm women cannot be effectively engaged in all types of farming activities.					
4.	Financial empowerment of women would help improving their social status significantly.					
5.	Gender analysis in perspective of farming system research will not help much in increasing production and productivity.					

Contd..

Sl. No.	Particular	SA	A	UD	DA	SDA
6.	Extension intervention made on the basis of gender analysis will be more effective for addressing the problems of the clientles.					
7.	Gender sensitive approach to Research & extension will create conflict between farm men & women.					
8.	Farm women should have a greater say in decission making process relating to farm activities.					
9.	Farm women cannot be good farm managers.					
10.	Farming system Research/extension will be effective when gender concerned are appreciated.					

SA = Strongly agree; A = Agree; UD = Undecided; DA = Disagree; SPA = Strongly disagree

SKILL

It is expected that the training which you received from NRCWA has helped in developing your skill in gender analysis for farming system Research/Extension including PRA. Please indicate upto what extent you feel that your skill has been improved.

Sl. No.	Item	Fully Improved	Partially improved	Not Improved
1.	Identification of Production systems			
2.	Gender analysis			
3.	Making case study			
4.	Conducting on farm research			
5.	Preparation of social map for sapce analysis			
6.	Time analysis			
7.	Flow analysis			
8.	Matrix ranking			
9.	Venn Diagram			
10.	Problem-cause analysis			

ON THE JOB APPLICATION

The training programme on gender implications in farming system approach might have increased your knowledge level, improved your skill and inculcated appropriate attitude in you. Thus it is expected that such knowledge, skill and attitude have inspired you for undertaking different women oriented activities. Please indicate the status of such programmes/Projects/activities from the list given below by giving tick mark.

Sl. No.	Item	Completed	Under Implementation	In planning Stage	Yet to Plan
	A. Organisation of Training Programme				
1.	Crop production				
2.	Dairy and Livestock production				
3.	Poultry				
4.	Bee-keeping				
5.	Mushroom cultivation				
6.	Sericulture				
7.	Kitchen Garden				
8.	Fruit and Veg. Preservation				
9.	Post harvest technology				
10.	Any other				
	B. Research Project				
1.	Action research				
2.	Impact study				
3.	Survey				
4.	Extent of Adoption				
5.	Any other				
	C. Extension Activities				
1.	Group Discussion				
2.	Demonstration				
3.	Exhibition				
4.	Field Trip				
5.	Film Show				
6.	Video Show				
	D. Development of Teaching Materials				
1.	Audio Cassettes				
2.	Visuals				

5.1. AN IMPACT EVALUATION OF THE TRAINING PROGRAMME ON GENDER IMPLICATIONS IN FAMILY BASED FOOD AND ECONOMIC SECURITY STSTEMS

5.1.1. OBJECTIVES

1. To assess the knowledge level of trainees on gender implications in family based food and economic security systems,

2. To know the perceived effectiveness of training programme in participants' skill formation and knowledge improvement and

3. To assess the reaction of respondents to various steps considered for revitalisation of women's role in India's foods and economic security.

5.1.2. QUESTIONAIRE

Please fill up the gap with appropriate words, choose the correct ones from alternatives given and tick true/false wherever necessary.

i. Major components of food security are _____ _____ & _____

ii. Rural population spend _____% of their income on food.

iii. A family is food secured when two conditions are fulfilled, write those two conditions:
(a)
(b)

iv. Which of the following groups is the most vulnerable to malnutrition
(a) Female Elders
(b) Female Adults
(c) Female Children
(d) Male Children

v. Major causes for widespread malnutritions in India are
(a)
(b)
(c)

vi. Which is the major source of income for poorly endowed families.
(a) Labour wage
(b) Land cultivation
(c) Small Business
(d) Animal Husbandary & Dairy

vii. With the increase of family monthly income, participation rate of women declines. (True/False)

ix. Existing social structure and lack of opportunities to alternate enterprise limit farm womens ability to contribute more to family income. (True/False)

Below given some problems, please mention the technological recommendations.

PROBLEM		TECHNOLOGICAL RECOMMENDATION
i. Low productivity of kharif rice	(a)	
	(b)	
	(c)	
ii. Low milk yield in cow	(a)	
	(b)	
	(c)	
iii. Lack of enough job opportunities for poor	(a)	
	(b)	
	(c)	
iv. Poor health conditions of women	(a)	
	(b)	

5.1.3. PLEASE INDICATE THE PERCEIVED EFFECTIVENESS OF TRAINING ON YOUR SKILL FORMATION

S No.	Item	VME	ME	LE	VLE	NE
1.	Transect mapping					
2.	Social mapping					
3.	Resource mapping					
4.	Timeline analysis					
5.	Analysis of changing Trends					
6.	Livelihood analysis					
7.	Well-being ranking					
8.	Preparation of Intervention decision matrix					
9.	Questionnaire preparation					
10.	Prioritisation & selection of problems					
11.	Gender based activity analysis					

VEM = Very much effective; ME = Much effective; LE = Least effective; VLE = Very least effective; NE = Not effective

5.1.4. PERCEIVED EFFECTIVENESS OF TRAINING IN IMPROVING YOUR KNOWLEDGE

S.No.	Item	VME	ME	LE	VLE	NE
1.	Concept of family based food & economic security					
2.	Concept & causes of malnutritions					
3.	Poverty & its ramifications					
4.	Policy for sustainable food security					
5.	Importance of indigenous knowledge					
6.	On farm research					
7.	Participatory Rural Appraisal					
8.	Different production Systems					
9.	Gender-activity analysis					
10.	Off farm activities for women					

5.2. HERE ARE SOME POINTS CONSIDERED WHICH ARE EXPECTED TO RE-VITALISE WOMEN'S ROLE IN INDIA For FOOD AND ECONOMIC SECURITY. PLEASE INDICATE, HOW IMPORTANT ARE THESE POINTS IN YOUR KNOWLEDGE

S.No.	Items	Very Important	Important	Not so Important	Unimportant
1.	Educating them about the need for food & economic security				
2.	Providing multiple income earning schemes outside farm				
3.	Imparting free education & training women lot at all stages				
4.	Equal pay/wage for equal work to both sexes				
5.	Providing reservation facilities in jobs to women in selected areas				
6.	Allowing for their access & control over resources & benefits through suitable laws				
7.	Political empowerment of women				
8.	Fighting malnutrition directly through allocation of food grains				
9.	Designing & developing women friendly technologies in Agriculture & allied sectors				
10.	Organising women's co-operatives on large scale with provision of necessary funding whenever required				

6. LINKAGES AND COLLABORATION

National Research Centre for Women in Agriculture has established linkages with sister Institutes at Bhubaneswar and Cuttack viz. Central Institute of Freshwater Aquaculture (CIFA), Central Rice Research Institute (CRRI), Cuttack; Water Technology Centre for Eastern Region (WTCER), Bhubaneswar; Regional Centre of Central Tuber Crop Research Institute (CTCRI), Bhubaneswar; Horticultural Experimental Station of Indian Institute of Horticultural Research (IIHR), Bhubaneswar; Orissa University of Agriculture and Technology (OUAT), Bhubaneswar and Regional Plant Resource Centre (RPRC), Bhubaneswar. Scientists of NRCWA frequently interact with scientists in the above mentioned institutes for planning research and extension activity in the field of agriculture, horticulture, animal husbandry, fisheries and allied fields. The scientific expertise from NRCWA and facilities available in other sister institutes are shared for conducting research and trainings in agriculture and allied fields.

6.1. Development of National and International Linkages :

At the national level linkages has been developed with various ICAR institutes, SAUs, KVKs, Non governmental organisation, progressive farmers, various Federations, Boards and various women organigations **viz** DANIDA (Danish International Development Agency) TEWA, (Training on Extension for Women in Agriculture), Orissa, Mother Terssa Women's University, Kodaikanal (T.N.); MSSRF (M.S. Swaminathan Research Foundation), Chennai (T.N.); National Commission for Women, New Delhi; Sri Padmavathi Mahila Vishwa Vidyalayam, Tirupati (A.P.), Tamil Nadu women in agriculture (TANWA), Chennai (T.N.); Mahila samakhya Karnataka, Bengalore; women organisation for Rural Development, Ahmedabad (Gujrat); various women cooperative societies viz Orissa women dairy cooperative society, Andhra Pradesh women Milk cooperative society etc. Linkages has been established inrespect of exchange of journals, reports, visits, expertise, research and extension activities.

At the international level, linkage will be developed with International federation for women in agriculture, New Delhi, International Centre for Research on Women, Washington, D.C. (U.S.A); F.A.O. Manila, World Bank and many other related organisations.

7. LIST OF PUBLICATION

i) Das, S.K. Sahoo, P.K. and Ghosh, S.S. (1997) : Gender Issues in Agriculture. National Seminar on the Technological Empowerment of Women in Agriculture. PP 1 to 2.

ii) Das, S.K.; Padhi, G. and M. Jena (1997) : Role of women in Rice cultivation. Indian Farming CRRI, Cuttack Golden Jubilee special issue, Dec., 1996.

RAC, MANAGEMENT COMMITTEE, SRC, QRT ETC. MEETING WITH SIGNIFICANT DECISIONS

8.1. Institute Management Committee :

The management committee of NRCWA was constituted vide F.No. 17(1)/96 AE 1, dated 03.08.1997 for a period of three years with following members :

Dr. S.K. Das Acting Director, N.R.C.W.A., Bhubaneswar.	Chairman (upto Aug. 22, 1997)
Dr. S. S. Ghosh Acting Director, N.R.C.W.A., Bhubaneswar.	Chairman (w.e.f. Aug. 23, 1997)
Sri Bramhananda Rout Additional Secretary, Department of Agriculture, Government of Orissa, Bhubaneswar.	Member
Director of Agriculture, Government of Madhya Pradesh.	Member
Dr. B. Senapati Dean (Research), O.U.A.T., Bhubaneswar.	Member
Dr. (Smt.) Kamla Singh C/o. Sonal Engineering Company, Bhabhua (Kaimur), Bihar.	Member
Mrs. Pratibha Sinha Head Mistress, Project Girls High School, Rajoun, Banka, Bihar.	Member

Mrs. K.K. Bhanot — Member
Senior Scientist,
Central Institute of Freshwater Acquaculture,
Kaushlyaganga, Dhauli,
Bhubaneswar.

Dr. J.K. Roy — Member
Joint Director,
Central Rice Research Institute,
Cuttack.

Dr. O.P. Vijaya — Member
Principal Scientist & Head,
CHES of Indian Institute of
Horticultural Research,
Bhubaneswar.

Director — Member
Central Institute of Agriculture Engineering,
Bhopal.

Additional Director General (Home Science), — Member
Indian Council of Agricultural Research,
Krishi Anusandhan Bhawan,
Pusa, New Delhi.

Finance & Accounts Officer — Member
Central Institute of Freshwater Acquaculture,
Kaushlyaganga,
Dhauli,
Bhubaneswar.

Assistant Administrative Officer — Member
N.R.C.W.A.,
Bhubaneswar.

The first management committee meeting was held on 30.12.1997. Dr. B.N. Chaudhary, Assistant Director General (LLP), ICAR, New Delhi and Dr. (Mrs.)P.K. Sahoo, Scientist participated as special invitees. The silent achievements of the Centre since its inception were presented in the meeting. The agenda items discussed are as under :

i) Approval of rent for the presently hired building,
ii) Hiring of a few more buildings at Bhubaneswar,
iii) Purchase of one two wheeler,

PRA report presentation

Institute Management Committee meeting

iv) Purchase of equipment/furniture/audio visual aids/other items,
v) Condemnation of old jeep,
vi) Purchase of tractor/trailer/implements,
vii) Future technical programme &
viii) Supplementary agenda on change of discipline.

The proceeding of the meeting was approved by the ICAR.

9. PARTICIPATION IN TRAINING/WORKSHOP/SEMINARS

1. Dr. (Mrs.) P.K. Sahoo, Scientist (Fisheries) attended the National Seminar on " The Technological Empowerment of Women in Agriculture " organized by National Commission for women and M.S. Swaminathan Research Foundation at Chennai during Dec. 3-4, 1997.

2. Dr. S. S. Ghosh submitted a research article entitled "Goat Health Problems in West Bengal - An Appraisal" for presentation in the IIIrd National Seminar on 'Small ruminant diseases' held at CIRG, Mathura 2-3 Dec.' 197.

10. VISITOR

Dr. Kirti Singh, Member, Agricultural Scientists' Recruitment Board, ICAR, Krishi Anusandhan Bhawan, Pusa Campus, New Delhi visited on 28.3.1998.

11. PERSONNEL

11.1. SCIENTIFIC STAFF

Discipline	Sanctioned Post			In position as on 31.03.98		
	Scientist	Sr. Scientist	Pri. Scientist	Scientist	Sr. Scientist	Pri. Scientist
Horticulture	2	1	1	-	-	1
Livestock production & Management	-	-	1	-	-	1
Dairy Technology	-	1	-	-	-	-
Fish Processing Tech.	-	1	-	1*	-	-
Agronomy	-	-	1	-	-	-
Agriculture Economics	1	-	-	1	-	-
Agricultural Entomology	-	1	-	-	-	-
Agricultural Extension	-	1	1	-	-	-
Farm Machinery & Power	-	1	-	-	-	-
Food & Nutrition	1	-	-	-	-	-
Home Management/ Resource Management	-	-	1	-	-	-
Child Development	-	1	-	-	-	-
Total	4	7	5	2	-	2

* One scientist (Fisheries) working against the post of Senior Scientist (Fish Processing Technology).

11.2. TECHNICAL STAFF

Designation	Sanctioned Post	In position as on 31.03.98
Technical Assistant T-II-3	9	1*
Technical (T-1)	2	1

* One Technical Assistant (T-4) joined on transfer against the post of T-II-3.

11.3. ADMINISTRATION, FINANCE & ACCOUNTS STAFF INCLUDING SUPPORTING AND AUXILIARY STAFF.

Designation	Sanctioned post	In position as on 31.03.98
Asstt. Administrative Officer	1	1
Asstt. Finance & Accounts Officer	1	-
Stenographer, Grade-II	1	-
Stenographer, Grade-III	2	-
Senior Clerk	2	-
Junior Clerk	1	-
S.S. Grade-I	4	-
Total	12	1

11.4. Staff Members as on 31.3.1998

Director	-	Dr. S.K. Das (Acting Director upto 22.8.1997) Dr. S. S. Ghosh (Acting Director w.e.f. 23.8.1997)
Principal Scientist	-	Dr. S.N. Pandey (Horticulture w.e.f. 15.01.1998) Dr. K.S. Risam (Livestock Production & Management w.e.f. 19.02.1998
Scientist	-	Dr. (Mrs.) P.K. Sahoo (Fisheris w.e.f. 01.8.1996) Shri Hemanta Kumar Dash (Agri. Economics w.e.f. 03.12.1997)
Technical	-	Mrs. Geeta Saha (T-4) w.e.f. Dec. 15, 1998. Mr. B.C. Sahu (T-1) w.e.f. April 1, 1996.
Administrative Staff	-	Mr. Dilip Kar, Assistant Administrative Officer w.e.f. 18.3.1998

12. Budget Position (1997-98)

(Rs. in Lakh)

	Sanction	Expenditure	Balance
Recurring	21.00	12.41	8.59
Non-recurring	44.00	28.58	15.42
Total	65.00	40.99	24.01

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