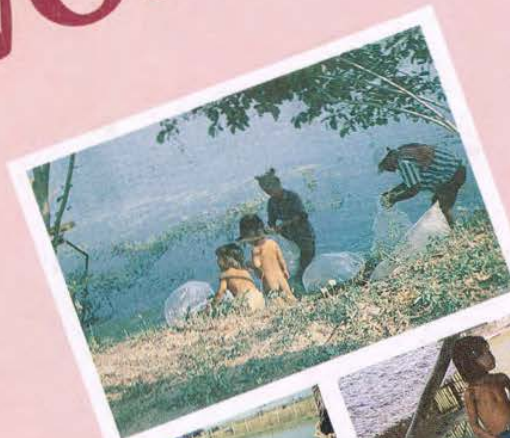
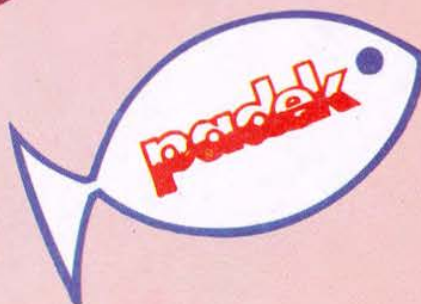


WOMEN



IN CAMBODIAN FISHERIES



NATIONAL WORKSHOP
on
WOMEN IN CAMBODIAN FISHERIES
7-9th November, 1994

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Proceedings of the
NATIONAL WORKSHOP
on
WOMEN IN CAMBODIAN FISHERIES

Bati Fisheries Station, Prey Veng Province, Cambodia

This report contains some of the papers presented in the
National workshop on Women in Cambodian Fisheries,
in draft form.

Photo credits: Cover page - Padek and Mr. T.S. Tana
Back page: - Mr. Nao Thouk

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INAGURAL ADDRESS

MICHIEL PEYRA

Director of Padek, Phnom Penh

Excellencies, distinguished guests, ladies and gentlemen, good-morning and welcome to you all.

I am very happy and honoured to be with you on this important occasion of inaugurating the first national workshop on women in cambodian fisheries. Although this workshop was initially planned to be organised in october, due to a number of constraints, it had to be postponed to this month. Let me start by apologizing for any inconvenience that this may have caused to you.

Cambodia is a very special country in many respects. It is certainly unique in having a relatively large women population, with women accounting for 60 to 65 percent of all adult inhabitants. We all know that, as a result of cambodia's turbulent history, the traditional roles of men, especially in the agricultural sector, have often by necessity been taken over

by women. Thirty to thirty-five percent of all households are at present being headed by women, and it is a well known fact that women contribute very importantly to cambodia's agricultural gross domestic product. Agriculture, which accounts for over 45 percent of the total GDP, will continue to dominate the cambodian economy, and within the agricultural sector fisheries is seen to play an ever increasing role.

We are here today to analyze in detail the contribution of women to the fisheries sector. My presentation would focus on low-cost aquaculture technology, a field in which padek has over the past years gained good experience.

In the context of this analysis, two assumptions are of great importance. The first of these assumptions is that the significance of fisheries, and especially of low-cost technology

aquaculture, is as yet underrated as an economic activity in small scale farming. The typical cambodian farm is one or two hectares in size, produces rice and sometimes vegetables, and is one on which farmers catch or raise fish for daily family consumption. Fish provides a primary source of protein in the diet, and therefore fishing or fish production are vital economic activities for many, if not all the rural families. I have been told that 70 percent of all animal protein consumed in cambodia is provided by fish.

The second assumption is that the contribution of women aquacultural activities is also heavily underestimated. The effort of women, despite an often theoretical recognition of their socioeconomic equality to men, usually goes unrecognized by society. In the coming days I hope that the importance of women to the survival and flourishing of small scale aquaculture in Cambodia would be highlighted. Since 1986, Padek has been taking an active interest in the fisheries sector, by rendering support to different activities. For padek, the start of our involvement in this sector has initially been a small project with a focus on capture fisheries. This small project mainly tried to assist fishermen by providing them with netting materials and with technical

equipment to undertake fishing activities in natural waters. However, with the recognition of fish in the diet of the Cambodian people, especially in view of the fast growing human population and a decline in the availability of natural resources, padek's activities in this sector slowly shifted to aquaculture as a means to create greater food security for the subsistence farmers and the poor people of this country.

In 1991, a program on fish culture in the Prey Veng and Svay Rieng provinces was initiated. The program was based on need assessment study results, in which farmers played a key role in determining their requirements. It quickly became obvious, however, that this program would not prosper without adequate technical support. To cover this need, a fish seed production and research center, was established in Bati during 1993.

While pond fish culture is still in its infancy, Bati fisheries station has, succeeded in training and coaching a first batch of successful aquaculture farmers in this part of the country.

Personally, I have been much inspired by a "fish farmers meet" which we organized at this station last june. A number of farmers

participated in this event, among whom also a number of women. From the discussions and the exchange of experience, it was very obvious that women were often the key players in aquaculture. Though this was a bit of a surprise to me (but what do i know about aquaculture!), to the staff of this station it was only a confirmation of the results of a survey which they had carried out in order to investigate the impact of women on fish farming\fish raising. Women indeed appear to be largely responsible for the day to day operation of many of the fish ponds; fertilisation and feeding, which, are not basically labour intensive/stressfull activities, and can be taken up next to the daily household chores by women. Often also, it happens that men are away from the house for long hours and hence only the women can provide the regularity and discipline required for day to day pond management. On the other hand, the return on investment in aquaculture, provided that adequate care is exercised from the beginning to the end of the culture period, is high. It is often higher than any other onfarm activities in which women traditionally participate. And then we have ofcourse the nutritional value and the positive impact of fish on family health.

I am informed that the fresh water fish production in cambodia is at present just a little more than 50% of the production obtained up to the late 1960. The decline in the production after 1970 has been largely attributed to the massive destruction of wetland forests, which have been feeding and breeding grounds for many species. If the per capita availability of fish prior to the war was about 20 25 kg per year, it has now shrunk to a mere 13 kg per capita per year. Cambodia's population is growing by 2.5 to 3% per annum. Fish and rice remain the common diet of the cambodian people. As a result, there is a large and growing gap between the supply of fresh water fish and the actual needs of the population.

It is likely that, given the decline in the production of fish from natural water resources, aquaculture will expand rapidly in this country. Aquaculture, and especially pond culture which in cambodia is only of recent origin, is certainly not the only the solution. We may not exaggerate the importance of aquaculture, which presently contributes about 7.6% of the total of cambodia's fish production. Restocking of open waters will also have to be given attention, cage culture techniques will have to be developed and refined and the

problems in the coastal fisheries sector have to be addressed.

However, pond culture is certainly showing rising trend over the last decade, and will increase further as its importance for the average small scale farming family was recognised. We all can contribute to that, if all of you who are gathered here today and who are concerned in the developmental efforts will join together and plan an effective approach, the average small scale farmer would be benefited. Above all, there is a need to consider the needs of women in relation to aquaculture in all aspects, ranging from technology development to workload assessment, and from training to dissemination of know-how.

In the processing and marketing sector, it is clearly the women who play an important role in carrying out almost all the activities. While men take active part in harvesting the natural resource, it is the women who often do the processing, and who take care to avoid the wastage and to produce a valuable consumable product.

It is in view of these important contributions of women in the aquatic resource management, Padek has taken the lead for the

organisation of this meeting. The main purpose of this workshop is to create a forum to discuss a number of issues related to the contribution of women in the fisheries sector. A large number of agencies are now entering into this sector, and, I'm happy to project, also government is also planning more and more activities in aquaculture. While all these are good signs, we need to streamline the thinking of all concerned on how to secure productive lines in aquaculture development. I believe that the present workshop will be contributing to that end.

If, during these days, we succeed in discussing various issues related to women in fisheries, not only the technological aspects but also the social and economic issues which are more relevant in making a technology accepted or rejected, the workshop will be successful. Based on the output of this workshop, suggestions may be formulated, not only to safeguard the interest of women in fisheries sector, but maybe also to serve as guidelines for the development of policies of the government and other organisations.

I am pleased to see the participation of such a large number of agencies, international organisations and the representatives from the

royal government. It should be remembered that this workshop is only a beginning and largely aims to develop a frame work for undertaking more detailed investigations on the role of women in the fisheries sector. If all of you feel at the end of this three day meeting that it would be opportune to hold another workshop in the coming year to discuss more in detail on the role of women in fisheries sector, padek will be most willing to join hands with other agencies in the organisation of such a meeting.

There is one special welcome that I would like to extend. I am glad that Dr.Revathi Balakrishnan, an authority on the women issues in fisheries sector, has travelled all the way from USA to deliver the Key note address on social and economic issues related to women in fisheries. She has accepted our invitation and fitted in her busy schedule, even with our last minute request. With the extensive knowledge you have in this area, it should be possible for the participants to develop a good frame work for more in depth research in this important area.

Bati fisheries station is a small place. Many inconveniences might occur. I appeal to all of you to excuse the organisers for any such

inconveniences and to participate actively in the meeting.

Thank you for bearing with me.

I wish you all good luck, pleasant stay and fruitful meeting.

SUMMARY REPORT

M.C. NANDEESHA

Padek, Phnom Penh, Cambodia



With a large section of the Cambodian adult population being women (about 60%) and nearly 30-35% of the families being headed by them, greater responsibilities in terms of creating food and economic security for the family lie in their hands. Though it is widely acknowledged that women's participation in different agricultural activities contributes significantly to food production in the country, there are paucity of efforts to understand their problems. Hence, programmes designed to address the problems of women in agricultural sector including fisheries have not been effective.

Like in agriculture, women contribute significantly to almost all activities in the fisheries sector too. Unfortunately, the contribution of women in the fisheries sector is always underestimated. Often, when fisheries issues are discussed and developmental programmes are formulated, it is always assumed that most activities are being carried out by men.

In an effort to provide a forum to address the issues related to the participation and contribution of women in the fisheries sector in Cambodia, a national workshop on Women in Cambodian Fisheries was organized from 7-9th

November, 1994 by PADEK in collaboration with the Prey Veng Province. The workshop aimed to generate awareness among the public, policy makers and policy implementers about the invaluable contribution made by women to different fisheries activities in the country. In addition, the workshop aimed to gather information on the problems faced by women and examine the prospects for their increased participation in the fisheries sector.

The workshop was intended initially to be a planning workshop to promote in depth studies to understand the role and contribution of women.

However, owing to a large number of participants and to a number of contributions received for presentation, the workshop was subsequently aimed towards understanding both the status and contribution of women on the one hand, and the development of guidelines for further studies based on the presentations made in the workshop on the other. The areas covered in the workshop included:

- (1) Women in Aquaculture
- (2) Women in Capture Fisheries
- (3) Women in Fish processing
- (4) Women in Fish marketing
- (5) Women in Fisheries Development, Research and Education.

The workshop was attended by over 160 participants from all over the country and was well represented by all the concerned Ministries. The workshop was inaugurated by H.E. Tep Nannary, the Governor of Prey Veng Province. The occasion was graced by H.E. May Sam Oeun, Undersecretary of State for Agriculture, Forestry and Fisheries, Ms. Hiam Rum, Undersecretary of State for Women Affairs, and Mr. Michiel Peyra, Director of PADEK, as well as a number of other distinguished guests from various organizations. Dr. M.C. Nandeesha, in his welcome address, informed the group that the workshop was convened with the objective of gathering information on the contributions made by women to the fisheries sector and the problems encountered by them. Through this process it is not only aimed to increase peoples' awareness of the invaluable contribution of women to the fisheries sector, but also to influence the policy makers of the Royal Government to develop appropriate programmes to solve the problems and meet the needs of women.

All three representatives of the Royal Government indicated that it would be pleased to consider the recommendations of the workshop to improve the status of women in the fisheries sector. The highlights of the three speakers can be summarised by the following points. Women in Cambodia have been traditionally involved in processing and marketing. However, it was mentioned that their contribution to the aquaculture sector was not yet understood clearly. Women not only assist in carrying out various

activities, but they are also responsible for household maintenance and bearing children. In reality, women carry out large part of the fisheries activities and are responsible for a greater part of the family maintenance. The fisheries sector was one of the best examples wherein it was traditionally perceived that most jobs were done by men, although this contradicted existing practices. The representatives of the Royal Government appreciated PADEK for this unique initiative and urged the participants to discuss the issue vigorously and come out with recommendations to enable it to initiate appropriate action to improve the situation of women in the fisheries sector. Mr. Michiel Peyra explained how and why PADEK took initiative in fisheries and in particular, the organisation of the present workshop. Fisheries is an important activity in Cambodia and fish is a basic element in peoples diet. Development programmes related to the fisheries sector will not be successful unless they are gender sensitive. As fisheries development is receiving a new thrust in the country, Mr. Peyra informed the group that PADEK wants to increase the awareness of the people and the policy makers to the needs and the contributions of women in the fisheries sector, and through these efforts avoid gender blind programmes in fisheries.

A number of presentations made by various other speakers highlighted the contribution of women in different sectors of fisheries in Cambodia. Following these presentations, group discussions were held on each of the following

topics, women in aquaculture, women in capture fisheries, women in fish processing, women in fish marketing and women in fisheries research and development and education. A summary of these group discussions is presented here. Wherever appropriate and necessary, results presented by various authors have also been used.

WOMEN IN AQUACULTURE

In Cambodia, aquaculture is practiced in different intensities and using different systems. Prevalent systems could be broadly classified as pond fish culture and cage culture. Though cage culture originated in this country, pond fish culture is new. In pond fish culture, intensive culture of catfish (Pangasids) and small scale fish culture involving different species is practiced. The latter type is becoming very prevalent and it is gaining increasing popularity throughout the country. The contribution of women to different activities varies in different type of aquaculture systems. In cage culture, a large number of activities like cage construction, seed collection, feeding fish, daily monitoring of cage/fish, and so on, are carried out either solely by women or in collaboration with men depending on the intensity of operation. In pond fish culture of cat fish, feeding is done usually by women, while men assist in cooking.

In the case of small scale aquaculture practiced in some areas of the ^{Angkor} country, women have been found to be largely responsible for carrying out most of the activities. Research

studies conducted by various organisations in their project areas have clearly identified the contribution of women as the key to success in this new activity. Many of the activities related to small scale aquaculture could be carried out by women independently with little or no assistance from men.)

However, the Government and the developmental agencies have not understood, the contribution of women to aquaculture. It was unanimously agreed that the contribution of women to various aquaculture activities, particularly when it is carried out at family scale, outweighs the contribution of men. This contribution is on top of the normal activity of taking care of the family and children. Hence, it is necessary to upgrade the knowledge of women in fisheries in order to achieve rapid progress in small scale aquaculture. Since the literacy rate of women is very low, and they do not have enough time to attend training, it is essential to design effective methods, taking into consideration the literacy rates, to deliver the message to farmers doorsteps. Apart from using female extension agents, other extension methods were suggested for investigation.)

Though the information presented in the workshop clearly indicated the contribution of women to aquaculture, the studies did not identify the access and control of the resources, or the status of women following the introduction of these new activities. Hence, it was suggested that information should be generated through detailed

studies of the above issues. This would help to better understand the position of women in the family. It would be interesting to know whether the new activities only added additional burdens or whether it has helped change the position of women in the family.

The participants appreciated the contributions and felt that in view of small scale aquaculture becoming a part of established farming systems, further detailed studies would help in laying a proper, gender sensitive, foundation for the future development of this specific activity.

WOMEN IN CAPTURE FISHERIES

In Cambodia, fishing methods for catching almost all varieties of fish are well developed. Based on the size of the fishing gear used, there are broadly three different types of fishing methods, namely, industrial scale fishing, medium scale fishing and family scale fishing. In all the three types of fishing, women contribute significantly to various activities either directly or indirectly. In large and medium scale fishing, they are heavily involved in fixing bamboo frames, net repairs, grading of fish by size and species, and so on. In family scale fishing, women are often involved in carrying out many of the activities related to fishing by themselves or in cooperation with other family members. Preparation of fishing material and carrying out fishing activities is often done as a necessity to meet the family fish requirement.

In the group discussions, most concern was expressed about the decline of fish from the natural environment as a result of destructive fishing practices. These destructive practices include fishing with electricity, the use of fine mesh size nets for fishing, the use of poisons and the use of explosives. In all these cases, fishes of all size groups of different species are killed resulting in the decline of production of several species. These destructive fishing methods are reaching an alarming level, resulting in food security problems for the poor people who depend on the natural waters for fish. Owing to the widespread use of pesticides in paddy cultivation a most dangerous situation is now emerging. It is likely that if the trend to increase paddy production through unsustainable means is continued and the usage of pesticides is increased, there would probably soon be no more fish in the paddy field. It should be remembered that nearly 20-30% of the country's fresh water production probably comes from fishing in and around paddy fields.

In addition to the above problems, the destruction of flooded forests which are known to be feeding and breeding grounds for a variety of species of fish is also reported to have caused the decline in fish production.

The group pointed out that most of these destructive activities are carried out by men. However, it is not only necessary to educate men, but women also should be educated on the negative effects of the above type of activities.

Women would probably be able to play an important role in controlling such destructive activities at the family level. Moreover, the group identified aquaculture as an activity which could help in avoiding such destructive activities by ensuring adequate production of fish at the family level to meet the family fish needs. It was also suggested to improve the processing techniques as it would help in year long preservation of fish and, thereby ensuring an adequate supply of fish throughout the year.

It was requested to make an in depth analysis of the fisheries situation in Cambodia and develop effective means for the better management of the aquatic resources. In the management process, women should be involved in all activities at all stages. The design of aquatic resource management strategies which are gender sensitive are also necessary. With the reported decline in the capture fisheries production, such strategies are essential to arrest further decline.

WOMEN IN FISH PROCESSING

Cambodia is well known for preserving fish using various traditional fish processing methods. Different methods of fish preservation have come into existence because most fish land in the country within just 2-3 months and unless these fish are processed and preserved for year long consumption, there would not be any fish available during the dry season. Necessity has resulted in the invention and adoption of several indigenous techniques for fish processing and

preservation. Common methods of fish preservation are fermented fish products (prahok, pahork), smoked fish, salted and dried fish, fish sauce and so on. In all these activities, women are the major force and contribute in some cases to more than 90% of the activities. Nearly 30% of the fish harvest is utilized for preparation of various products. The major concern of the discussion group were the difficulties faced by women in the processing itself and also the availability of adequate finances at reasonable interest rates. As the women's knowledge of hygiene is limited, and as they are usually unaware of the harmful effects of various insecticides and pesticides, there have been instances of poor quality production causing health hazards to consumers. In the preparation of fermented fish products, as well as fish sauce, poor hygiene can attract worms and insects. To prevent insects, there have been cases of using insecticides around the product.

The group felt that hygiene education should be carried out to avoid health problems as the country is already limited in human resources.

Secondly, efforts should be made to organize financial assistance to the women's groups. Most importantly, improvements to traditional processing and preservation methods should be carried out through research and through providing the people with alternate technologies. The need to improve the country's communication systems was also strongly felt since the existence of such a system could help the bulk harvest of fish in one place be moved to other fish deficit

areas. Presently, a significant proportion of the catch is wasted as there are no effective means to preserve such huge harvests and there are no easy ways to transport fish from one place to another.

In order to understand and quantify the contribution of women to this important activity, it was suggested that an intensive study be carried out by the organizations involved in fisheries development in this country. However, it was made clear that processing is an activity dominated by women and that the skills required are more user friendly among women than men.

WOMEN IN FISH MARKETING

As in almost all developing countries throughout the world, fish marketing is also an activity being carried out largely by women in Cambodia. As stated already, Cambodia has a variety of fish products and hence marketing involves sales of both fresh fish and processed fishery products. A considerable proportion of the retail trade are women and marketing activities are usually concentrated around provincial towns.

The poor marketing infrastructure and highly fluctuating currency values have been causing an enormous amount of problems for women. High inflation had a direct effect on marketing and income.

The group expressed serious concern about inflation and urged the Government to do all it could to keep inflation rates stable. The Government was requested to improve the market

areas for fish and fishery products and provide loan assistance to women on easy terms, since most of the women who are involved in fish marketing are poor and are carrying out small scale activities.

WOMEN IN FISHERIES EDUCATION, RESEARCH & DEVELOPMENT

Though Cambodia is a society dominated women, the involvement of women in education, research and developmental activities is far below their representation in the population. Even in the fisheries sector this situation holds true. A perusal of both the National Fisheries Department and the Provincial Fisheries Department indicates that only 23% and 13% respectively, of employees are women. Most of these employees are also not adequately educated and hence they work as low level cadre. While there is no emphasis on women in the recruitment process, often it is assumed that women would not be able to carry out the field activities and men are chosen for a variety of such field jobs. Also, the percentage of women graduating from both the Prek Leap Agricultural College and Royal Agricultural University is low.

In Prek Leap, out of 197 vocational graduates, only 18% were women, although in the agent course which is just a one year programme, the percentage of women formed 25% of the 63 people who have completed so far. In the Royal Agricultural University, out of 137 graduates completing courses since 1984, only 19% were women. Most of these educated women are employed with the central fisheries department or

in the provinces adjoining Phnom Penh. A number of reasons were identified as the causes for such a concentration of a technical pool in one place and a request was made to disperse the minimum technical pool available to different provinces to reap maximum benefit.

There are no women involved at the moment in the fisheries education sector. Similarly, no women are actively engaged in the newly developing research field either. Most of the available women work in development. The number of women is far below requirement although at this stage the knowledge gained by them at graduation level being poor, they are not in a position to meet the needs of the farming community. Hence, it was urged that available women should be given priority in training, both within and outside the country. It was requested that special emphasis is made to attract as many women as possible for courses and to provide all assistance to train them and utilize their services for fisheries development in the country. However, such a developmental plan requires several policy adjustments. It was requested that such a policy review be made immediately bearing in mind the country's need for development.

Conclusion

The workshop was considered a good beginning in addressing an important issue which would help in developing gender sensitive programmes and hasten the developmental process in the fisheries sector. In contrast to the

common assumption of the people that most fisheries activities are being carried out by men, women contribute significantly more than men in carrying out many of the activities. Hence, on this basis, it was urged to develop gender balanced programmes to better help women in the fisheries sector.

Though in the workshop, a number of issues ranging from social to technical aspects were discussed, it was felt that more in-depth studies would be useful to quantify the contribution of women in various spheres of fisheries activities. It was suggested that such studies should determine whether women have due access to the resources generated largely owing to their contribution. A number of guidelines were provided for further study based on the presentations made and discussions held. It was recommended to avoid too much emphasis on just data collection. Much of the situation of women could be better understood through informal discussions and observations of the specific situation in different areas.

Following were the major points that emerged from the workshop.

- (1) Women contribute significantly to many of the fisheries activities in Cambodia. The level of contribution and the extent of involvement is almost the same or in some cases even higher than that of men. However, thus far, no effort has been made to understand their contribution and

the constraints faced by them. Hence, PADEK's initiative in organising this workshop for gathering information about the role of women in the fisheries sector was considered as an appropriate step. It was recommended that the information gathered was to be used to build public awareness about the role of women in the Cambodian fisheries sector and influence policy makers to develop such programmes which would benefit women.

- (2) Five major areas namely, aquaculture, capture fisheries, fish processing, fish marketing and fisheries research and education were examined in detail in the workshop to assess the involvement of women and examine the contributions made and constraints faced by them. In all these sectors, excepting in fisheries research and education, women were found to contribute significantly to different activities. In small scale aquaculture, fish processing and marketing, most of the activities were found to be carried out by women. However, there are no programmes to assist them either financially or technically to enhance their knowledge, which could help them to contribute more effectively.

- (3) It was recommended that attempts should be made to solve both the social and

technical problems faced by women and urged that as a preamble to that end, all the programmes designed by various agencies should be gender sensitive.

Since Cambodian fisheries sector has several social and technical issues all of which requiring priority attention, it was recommended that the burning issues should be addressed as highest priority. One such important issue identified was the poor knowledge of women about technical aspects of fisheries. It was recommended that various strategies be adopted to enhance the knowledge of women including the use of women extension agents. Also, at the same time, it was suggested that research be intensified to generate quality, local information which could be used for educational activities besides solving location specific problems.

- (4) Lack of financial support (credit) was identified as another major constraint being faced by women undertaking economic activities in fisheries. It was suggested that ways be explored to provide financial support to women with soft loans through the existing GO and NGO structures. Research was suggested in to this area to understand needs and the means to provide such support in an appropriate way. It was recommended that the issue of access to the resources created/generated through

the efforts of women be investigated, as well as looking at the status of women in the family.

organisations involved in fisheries sector have agreed to conduct research in their area of operation prior to such a meeting.

- (5) As the number of women entering fisheries courses was small, it was suggested that schemes should be developed to attract women to existing fisheries courses. Also, it was felt that in order to have nationwide fisheries development, it was proposed that seats at academic institutions related to fisheries should be reserved for women from various provinces. Presently, most women graduated from the fisheries institutes are either from Phnom Penh or adjoining provinces.

In his closing remarks, Mr. Michiel Peyra assured the assembly that PADEK would pursue further studies on this issue and provide information to the Government to enable them to develop gender balanced action programmes in the fisheries sector. He also promised to continue PADEK's efforts in awareness building campaigns and generation of quality scientific information on the contribution of women to fisheries and constraints experienced by them in this sector including the organisation of another workshop / seminar on Women in Cambodian Fisheries during 1995-96.

- (6) It was suggested that efforts should be continued to understand the contribution of women to the fisheries sector and the constraints faced by them. Such studies would help generate information which could not only be used to develop effective strategies to solve their problems, but also to educate all sections of the population on the role and necessity of women in the fisheries sector.

- (7) The participants unanimously decided to meet again during 1995-96 and discuss in more detail the role of women in the Cambodian Fisheries sector based on the scientific data gathered. All the

WOMEN IN CAMBODIAN FISHERIES SECTOR

TOUCH SEANG TANA

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Abstract

Women are an important work force in the Cambodian fisheries sector. They are actively involved in fish processing, marketing, capture fisheries and aquaculture. In this paper an effort has been made to summarize the information on the role of women in different sectors. Information has been gathered through both personal interviews as well as discussion with key persons in each sector. The results indicated that women involved in subsistence fishery, working as labor are more illiterate. These women also are poor and do not possess basic minimum needs required for the maintenance of the family. However, these women were found to be able to make decisions on many of the issues. Better educated women/married women had less influence in decision making. Highly educated women were not found in the fishery sector. Educated women were rarely found in the small scale fisheries sector. In contrast, in large scale operations of capture fisheries, aquaculture and marketing better educated women could be seen.

Introduction

Based on the Cambodian Fisheries Statistics of 1992, there were 18,196 fishing families with a population of 80,005, in which 52,566 labor force was involved in capture fisheries of both inland and marine sectors. About 4,147 families with 17,480 population, in which 12,512 labor force were involved in fish processing. While in aquaculture there were only 3,500 families with 13,624 family members in

which 8,544 labor force were involved in the farming activity. There was no information available on the number of people involved in the area of fish marketing. It is important to note here that this information has been gathered from licensed fishermen only and others have not been included.

Women labor involvement is not significant in large scale capture fisheries

and large scale aquaculture activities (shrimp farms in the coastal area). Most women seen in these areas are involved in cooking activity. However, women are active in fish processing and marketing activities. Further, they are active in all the areas of small scale fishery operations.

Methodology

In order to obtain some preliminary information in the areas wherein women are involved, three steps were adopted. In the first step, review of the selected area was done to understand the existing local conditions. In the second step, interviews were held with key informants and in the third step, information was collected from women involved in the activity through discussion.

Description of the study areas and summary of the results

Women in large scale capture fisheries - Chhralay fishing lot

Location: Commune Kompong Chhnang, Roleab Phaeat district about 18 Km from Kompong Chhnang Town.

Geographical feature: Two rivers: Cham Chi river and Phlong river flow through the area

Technology used for catching fish: Fishing barrage, Drag net.

Hired labor: 35 Permanent labour in which five are women; 60 temporary labour in which 22 are women.

2 Women in small scale aquaculture, a case study in rural Svay Rieng province

Location: Southeastern part of the country

Area: 2,966 Km² with 200,000ha arable land

Population: 433,000 in 1992 and in which 224,000 are female

Ethnicity: 97-98% are Khmer and rest are ethnic Vietnamese and Chinese.

Socio-economics status: >90% of the population are engaged in agriculture

Agricultural situation : Agriculture is mainly rainfed

Main food of population : Rice and fish

Fisheries status: Flood plain and Rice field fisheries; wild fish depletion; aquaculture is new to the area and its contribution is still negligible.

General status of women: Large number of women are involved in the activity.

3 Women in subsistence inshore capture fisheries, a case study of Islamic fishing Community of village #4, Dong Tong commune, Dong Tong district, Koh Kong province.

Location: South of Koh Kong town and at eastern side of Dong Tong river

Household family number: 1160 families in which 70% are engaged in capture fisheries

Ethnicity : 65% are Cham and the rest are Khmer

Status of fisheries: 700 motorized fishing boats (of 5-10 HP) and 200 non-mechanized boats involved in inshore capture fisheries and collection of oyster and snail for shrimp feed.

Fishing technique: Gill nets, crab trapping, beach purse seine.

General status of the community: Poor

Average income of fishermen and gatherers: 10,000-30,000Riels/fishing day; 3,000-10,000Riels/gathering day.

Women status : Most married women are House wives except some young married women without children assist their husband in near shore fishing; widow families (about 7% of the household in the community) are engaged in fish collection (60% of them) and rest are involved in fish marketing

4 Women in small scale marine capture fisheries, Peam Krasob fishing commune, Mondol Seima district, Koh Kong province.

Location: about 10 Km to the east of Koh Kong town at the margin of the wetland mangrove forest of the national wildlife sanctuary.

Household family number: 76 households which are distributed in two villages.

Population: 398 in which 190 are women

Ethnicity: 90% are Khmer and rest are Cham, Thai and Chinese.

Socio-economics status: 90% of household are engaged in fisheries and rest are engaged in mangrove charcoal production and in small grocery shop in the commune.

Fisheries status: 5 trawlers (30-42 HP), 60 gillnetters (5-10 HP), 20 non-mechanized boats which generally operate not far from the shore.

Living condition: 3% rich, 50% fair and rest are poor.

Women status: 80% are house wives and rest are involved in inshore fisheries with their husband and some work at charcoal kilns.

5 Women in coastal aquaculture- a case study of shrimp farming in Koh Kong province

Number of licensed shrimp farm: 79 registered farms among which 30 farms have already commenced operation and another eight farms are under construction.

Areas licensed: 800 ha of which about 300ha are already under operation.

Intensification of culture: Intensive (stocking density 80-100pcs/sq.meter)

Labor: About 800 workers (for operation of farms) in which about 100 are women who are mainly involved in cooking.

Wages for labor: 300,000 riels/month for Thai technical labor, 200,000 riels/month for

Khmer technical labor, 100,000 riels/month for ordinary Khmer and Thai labour staff, 50,000 riels/month for women (cook). Meal is commonly provided on-farm to all workers.

Output: Varied from 3 to 7 tons/ha/rainy season crop during 1994 (about 80% of harvested pond had financial loss).

Problems encountered during the last crop: Freshwater impact from Dong Tong river and heavy rain, shrimp death due to diseases, pollution due to heavy feeding, low salinity, application of environmentally unfriendly technologies.

6 Women in fish processing - a case study of fresh fish collector and steamed fish processor at Tomnup Rolork commune, Kompong som city.

Owner: Mr Siek Heng

Established: 1983

Production capacity: 300 tons of steamed fish/year and 200 tons of fresh marine fish & shrimp/year

Inputs: 500 tons of scad and mackerel species for steamed unit (40% weight loss after steaming) and 50 tons of fresh shrimp, 150 tons of seabass/ grouper/snapper/tuna/ marine catfish/mullet etc..Fresh scad and mackerel price varied from 400-1300riels/Kg depend its availability. The other commodities price is steadily fluctuated due to many factors.

Labor for steamed fish unit: 8 permanent staff including 2 women and another 2 temporary staff

Labor for fresh fish gathering unit: 5 permanent staff including 1 women and 5 temporary staff including 3 women.

Raw materials suppliers: contracted 12 seine netters of 42-130 HP (for scad and mackerel) and other local fishing boats (for fresh fish and shrimp).

Distribution: Steamed mackerel used for distribution in the country while fresh fish and shrimp use to export to Thailand.

Whole sale price of steamed fish varied from 2,200-2,300 riels/kg.

Results and discussion:

Women in fishing lot assist men in many ways. More particularly they are involved in making bamboo mats, repair of nets, assist in sorting of the harvested fish, processing fish and cooking food for the fishing lot members. In families surveyed, all the women were living in poor condition. In the small scale aquaculture sector, women were active participants in many of the activities; pond digging, seed collection, stocking, fertilization, feeding, harvesting and processing/marketing of harvested fish etc. In pre-stocking preparation, men were more active, while in post stocking operation women were found to be active. Particularly in the area of fertilization and feeding, they played an important role in maintaining the

activity. However, here again women were found to be living in poor condition.

Women in the coastal areas wherein fishing was observed to be carried out for subsistence living by the community largely consisting of Chams, women were found to be largely responsible for household activities. However, in some families with no children, house wives were found to help husband in fishing activities. Here again, living condition of women was poor and majority of the women were illiterate. In the marine fishing sector, women were not involved, but in near shore fishing activity, women were found to assist men in the fishing activities. In the coastal aquaculture sector, though women involvement was seen, it was largely restricted to cooking in the farm and feeding. Living condition of women in this area was better since they could earn better wages from these commercial farms. In the marine fish processing sector, the living condition of the women was poor.

Some of the information obtained from the above areas are summarized in Table 7. Among the 42 women interviewed, 66.5% were married and rest were widows. Even those who were literate, did not possess higher education. The living condition of most of the families was poor.

In order to understand the role of women in decision making process, few

questions were asked to women (Table 8). Four groups of women were made: Group 1: Widow with children; Group 2: Widow without children; Group 3: Married women without children; and Group 4: Married women with children. Widows being the family heads, they had good power to decide on most issues. However, those with children, had to consult grown up children on certain matters and hence the power to decide on some of the issues were not entirely with women. In those cases wherein women were married (with/without children), decision making power was greatly reduced. It appears that in these cases, it was the men who still played a major role in making final decision on many issues. Women also expressed the difficulty in meeting the family expenses with the earnings made. In all such cases, women had to increase their working hour and in some cases they also had to make the children undertake the work at the cost of their schooling.

Conclusion

Women play a major role in almost all spheres of fisheries activities either directly or indirectly. If they are not involved directly in the activity, they are mainly engaged in taking care of the household responsibilities. In capture fisheries, they are an important part of the shore based activities, in processing and fish culture, they are the key components of many activities. In

coastal fisheries sector, they are again active more in the shore based activities. In all cases illiteracy is acting as the major hindrance factor for the women to gain required social status. Hence, programmes should be designed to educate women and all efforts should be made to change the attitude

of men towards women. This change in attitude can be brought only through long term programmes which not only address the problems of women, but enlighten the population on the contribution made by women as a mother at home and as a co-worker in the field.

Table 1 Women data collected from 7 interviews of the 6 fishery components:

Status	Widow with children	Widow without children	Married with children	Married without children
Age:		1	1	6
< 25 years				
25-40 years	7	2	15	
> 40 years	3		7	
Education:	9	1	12	1
Illiterate				
Primary School	1	2	9	3
Secondary School			2	2
Above high School				
Living Condition:				1
Good			5	
Better		2	1	3
Poor	10	1	17	2

Table 2 Women role in household management and decision-making

Parameter	Group 1	Group 2	Group 3	Group 4
Head of family	10	1		
House wife			5	
Family financial management	10	3	18	4
Decision for expense :				
For purchase of Food				
powerless		2	5	2
fair		1	12	3
powerful	10		6	1
For purchase of Cloth:				
powerless			15	3
fair		2	4	2
powerful	10	1	4	1
For purchase of household Assets:				
powerless		1	17	2
fair		1		2
powerful	10	1	6	2
For prestige				
powerless		2	17	4
fair		1	1	1
powerful			5	1
For entertainment				
powerless			15	2
fair		3	2	4
powerful	7		6	
For family business:				
powerless			5	1
fair		2	13	4
powerful	10	1	5	1

SOCIAL AND ECONOMIC ISSUES RELATED TO WOMEN IN FISHERIES

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Introduction

The focus on women's social and economic issues related to fisheries should be viewed in the context of women's role both as managers of natural resources and as providers of basic needs. At the household level women have multiple roles. In many developing countries women are primary producers of food crops, where they are active workers in the subsistence farming and small scale production systems. These productive roles can be in the crop-livestock system, forestry related or associated with marine and aquatic resources. In the post harvest sector, women around the world play a crucial role. In various developing societies women assume supporting roles in crop production, livestock rearing, and harvesting. In almost all regions of the world women are

the primary providers for the basic needs of household members. In performing all these multiple roles, women are linked to natural resource utilization.

In the fisheries sector, all activities associated with marine, freshwater, and aquaculture production are linked to the community's natural resource base. "The world's marine ecosystems support vast numbers of fish that are a vital part of the global food supply. An estimated one billion people, mostly in developing countries, depend on fish as their sole source of protein. Yet there are signs that many of the world's marine fisheries are in serious trouble" (World Resources Institute, 1994). It is estimated that mangrove fisheries provide

employment for up to half a million people. In most mangrove areas, the income generated from fisheries products is several times greater than that from forestry (FAO, 1989). In most countries in Asia and the Pacific Region, there exists large number of communities that are coastal and sea-based, and which rely on the seas for sustenance and as source of income (APWRCN, 1992). As a farm household enterprise, aquaculture is tied to agriculture, livestock and fisheries, which are linked to natural resource management.

In the developing countries, it is important to identify women as managers of natural resources in their roles both as producers and consumers (Rodda, 1993). In this context women's socio-economic roles and concerns related to fisheries have important implications for efficient management of ecological assets while supplying food to the world's growing population. A focus on women's economic and social issues in fisheries is important one on its own. Additionally, the discussion on women in fisheries gains further significance from a dual perspective of ecological sustainability and food security.

Women are the most under valued and inappropriately utilized human resources of the developing world. In the fisheries sector, the situation is not any different. Socio-economic issues related to women in fisheries should be analyzed in the framework of their participation in various spheres of activities within both the households and in the fishing communities. Women's socio-economic issues can differ among coastal fishing communities and aquaculture communities. But the fact remains that women in their various capacities make direct and indirect contributions to the fisheries sector, that are seldom counted and economically valued.

Position of women in fishing communities is well described by Heel (1986): "The status of fisherwomen has two components: status in the family and in the community or society. Their status depends on the various tasks they perform in relation to the occupation of fishing. Traditionally, fishermen capture fish, (in India) the women engage in shore-based activities. The tasks performed by men are considered productive and therefore superior and indispensable, while those performed by women are considered insignificant and inferior.

Household labor and other unpaid work done by fisherwomen is considered secondary and their economic activities are almost totally ignored. It is nevertheless a fact that the role played by fisherwomen is vital not only to their families but also to the village economy, as they are the main sellers and distributors of fish."

Women's Activities in Fisheries

As we take a look at the fishery production systems around the world, it is evident that women are actively involved in various stages of production and processing of fish. Yet, their work in fisheries is not well documented. In its strategy for Fisheries Management and Development, FAO points out that "women play a prominent role in production, processing, and marketing in small-scale fisheries and aquaculture in many countries" (1988). A primary and important social issue that has economic implications centers on the undocumented and undervalued contribution of women in production and processing in marine sector, aquaculture, and fresh water fisheries. Any appraisal of women's activities in the fisheries sector should be examined for diversity and complexity, since their

participation varies by country, local culture, and indigenous customs, and beliefs. Within the same country the differences could be found from one community to another in women's participation.

2.1 Women's Activities in Coastal Communities

In coastal fishing communities women can be directly involved in harvesting aquatic resources. Women often turn to fishing as a source of potential income, apart from their crucial role in collecting food from sea for daily subsistence (APWRCN, 1992). In reviewing the roles of women in fisheries in the Bay of Bengal Region, Madhu (1989) identifies the diversity as, "apart from activities as wife, mother, and homemaker-which engages them from dawn to dusk-fisherwomen market fish as retailers, auctioneers or as agents of merchants; make and repair nets; collect prawn seeds or fish seeds from back waters to supply to fish farmers; work as laborers for shrimp processing firm (at the landing site, at peeling sheds or at the processing plant); dry and salt fish; and prepare variety of fish products (fish crackers, fish balls, fish paste etc.)". In parts of India, women net prawns

from backwaters; in Laos, women fish in canals, and in the Philippines, women fish from canoes in coastal lagoon" (FAO, 1987). According to a government estimate by the end of 1989 the fisheries sector in Fiji had 20,000 persons who were involved in subsistence fishing, of which the majority were women (Hamida Bibi, 1990). In a southern state of India, fisherwomen go by boat to a seaweed "ground", then swim around and "pluck seaweed" (Madhu, 1989). In the Northwest Lingayen Gulf, Philippines "Gleaning as an economic activity imposes a heavy workload for women in particular. The increasing rarity of commercially-important organisms in the degraded habitats means longer gathering hours" (Mcmanus, 1989). A review from the African region documents that "in many African countries women are responsible for most shore-based fisheries activities, including fish curing, processing and marketing" (Lartey and Dzidzienyo, 1986).

2.2. Women's Activities in Aquaculture Communities

For aquaculture development, a comprehensive understanding of the local economy necessitates a thorough examination

of division of labor by gender, age, and status (World Bank-151, 1991). In many aquaculture communities women are active participants in production. "In those countries where aquaculture sector has been well established women have rapidly involved in aquaculture at every level. Not only have they expanded their traditional fisheries roles in marketing, processing, and credit, but they have become active in farming itself (production)....The participation of women throughout the industry of aquaculture worldwide covers a broad spectrum, as diverse as the many levels of sophistication attained in each country" (Nash, Engle, and Crosetti, 1987).

The diversity of aquaculture can be categorized as subsistence or barter oriented production systems and as semi-intensive and intensive systems for profit and trade. The nature of the production system impacts on women's role in aquaculture. When promoted in an integrated approach, aquaculture is an element of crop-livestock-fish farming systems. In such systems women in farm households participate at various stages of fish production ranging from collecting materials to fertilize the ponds to feeding the fish with household waste materials. Their

indirect aquaculture roles relates to their activities in other agriculture and livestock enterprises that are integrated with fish farming. At Binong, West Java in rice-fish farming systems, quantification of labor contribution in different rice-fish patterns provides evidence that female labor is an important resource in rice-fish production (Wardana and Syamsiah, no date).

In a personal communication Veverica indicates that in Rwanda (a land locked African country) participation by women has led to the rapid and successful growth of Aquaculture (1990). Rwandan women have successfully demonstrated their interest and ability to utilize modern aquaculture technology developed and disseminated through a USAID sponsored Pond Dynamics and Aquaculture Research Support Program (Konnar, 1989).

2.3. Women in Fish Processing

Women in both coastal fisheries and aquaculture participate intensively and extensively in processing fish (Wanigasundara, 1981; Mcmanus, 1989; CIRDA, 1989; Yater, 1982). This could be as simple as drying the surplus fish for future

household consumption or working as paid labor in fish processing plants. In both informal and formal sectors of fish processing women's tasks are labor intensive. In addition given the nature of seasonal variations in fish harvest, the women's formal sector activities can fluctuate depending on seasonal demand for labor. Sandhu (1989) observes that "in most places, fish processing (whether it is smoking, salting or drying) is a social system as well as a livelihood. The social organization or the division of labor is already fixed. By and large, fishing is the domain of men, while processing belongs to women"

In a case study of woman in a Kerala fishing community, a woman narrates her experiences as an agent in shore based prawn peeling enterprise that involved selling the peeled prawns to export firms at a price (Gulati, 1984). Migrant women in Gambia have organized themselves with the help of the extension agents to process sun-dried snails and fish which are traditionally used as condiment (King, 1989). In Ghana, adult women dominate the fish processing sector and a majority of them have been in business for over ten years (Osei-Oare and Tachie, 1988).

2.4. Women in Fishery Post Harvest Handling and Marketing

Women's participation in fishery marketing varies across the countries. Nauen (1989) observes that in West Africa, women have the predominant role in the post harvest sector of artisanal fisheries, though there are great differences from one country to another. Most often women trade on a small scale, but there are exceptions. In Papua New Guinea, where women in Daugo Island trade exclusively market fish caught by men while in Ghana, women own fishery businesses which often involve leasing out fishing boats to men who in turn supply them with fish (King, 1989). In some parts of Africa women are active traders in the fisheries sector. Nauen documents from her African observations that, "as part of her commercial activities, the wife buys fish from her husband and/or sons for processing. If she has granted them a loan for necessary inputs such as nets, spare parts, fuel etc. for the next fishing trip, this loan will be repaid with interest in the form of lower-priced fish.....In the absence of a formal credit sector for artisanal fishing and other small scale operations, women fish processors and traders often ensure crucial credit and

supplies at flexible conditions." In Asia and Pacific region, it is common to sight women as fish traders in shores and local markets. In Kerala-India, women are head load fish vendors, net makers, and prawn sellers (Gulati, 1984).

2.5. Women's Role in Supporting Family Fisheries Enterprises

Women's supportive roles in fisheries are illustrated by their time spent making nets, repairing nets, buying or gathering fuel for smoking fish, building and maintaining fish smoking ovens, making baskets for fishing and transporting fish (ANGOC, 1989). "Mending nets, baiting hooks, packing dynamite and other forms of gear preparation are very much a part of keeping house" (Mcmanus, 1989). In aquaculture, gathering or preparing feed for the fish, collecting compost materials, and mixing compost to fertilize ponds are extended household activities done by women as family labor. In integrated agriculture - livestock-fish systems, women take care of the livestock and fish feeding. Family labor is a crucial input in the integrated aquaculture in West Java where women have a strong voice in farm management (Schmidt, 1980).

3. Women's Knowledge of Fishery Production and Resources

"Women in fishing communities often have significant knowledge about fish resources and techniques" (APWRCN, 1992). In such communities women have the power of knowledge in dual spheres of fishery production and fish consumption - household and market preference of fishes and fishery products. A study of Fulaga in the Lau group in Fiji observed that men had limited knowledge about fish resources, fishing issues, and techniques, while women's knowledge of these was comprehensive (Lal and Slatter, 1982). In almost all fishing communities in the small-scale and subsistence sector, knowledge of fish processing is women's domain. In the aquaculture sector women have the special knowledge of wild plants and leaves that are cost effective sources of pond nutrients and these women possess the skill and knowledge of processing fish feeds from crop residues, cereal by-products, and household wastes.

4. Women's Role in Food Security as Related to Fisheries

In most developing countries women as the primary decision makers and providers of family meals, choose fish and fish products. Thus women play a key role in ensuring family food security. The importance of fisheries in nutrition was recognized in the World Fisheries Conference in 1984, which endorsed a global FAO action programme. The FAO action programme calls for : " The Promotion of the Role of Fisheries in alleviating Malnutrition", which aims at increasing the nutritional impact of fisheries projects in two ways: (a) directly, by making more fish available for consumption by the undernourished, and (b) indirectly, through improving the living conditions and thus the food and nutrition situation of fishing communities" (Heel, 1986).

In certain regions of the world, any decrease in the supply of fish creates constraints on household consumption which in turn places hardship on women in meeting the family's food security needs. According to Brown (1985), "Although per capita fish consumption in Third World continues to be lower on average than in the industrial world, it is nonetheless a key protein source in the diet of coastal people. A scarp of dried fish

can often mean the difference between a nutritionally adequate diet and one seriously deficient in protein. Thus world wide decline in the per capita fish harvest does not augur well for future nutritional improvements in developing countries."

Aquaculture in many African countries provides for the animal protein when deforestation diminishes the supply of wild animals. Thus women's participation in aquaculture directly impacts on family food security needs. In Rwanda, "a main reason for women's participation in fish farming was access to fish for the family meal. Several women fish farmers mentioned that it was difficult for them to buy meat, so they opted for fish farming to produce their own fish " (Balakrishnan et al. 1993).

Households in fisheries communities experience uneven flow of an income depending on seasonal weather conditions and low catches. "The pattern of expenditure and income in fisheries is often irregular and unpredictable" (FAO, 1990). Under these hard circumstances women generate cash income by seeking gainful employment and engaging in subsistence trades to provide for the family's necessities. Many studies have

focused on women's strategies to ensure household food security during periods of famine, seasonal variability of crop yield, and deforestation. But no adequate, reliable information is available on women's coping strategies in fisheries communities.

5. Economic Implications of Women's Diverse Roles in Fisheries

In this section the economic implications of women's participation in fisheries is discussed. The economic dynamics of women's roles should be analyzed in the context of intra-household gender dynamics and society's valuation of women's contribution.

5.1. Uncounted and Under Valuation of Fisherwomen's Work

Fisherwomen augment households' monetary resources directly by contributing their time, labor, and marketing skills. Women's intensive participation in the subsistence and small scale fisheries is seldom quantified as economic contribution to the national economy. Value of women's time used to mend the net, to transport fish to the market, and to create use-value for the

fish products is seldom counted with money value. Alternatively, if a paid laborer is hired to mend the fish net or transport fish to market, then the labor cost will be counted as a cost of fishery enterprise.

5.2. Fisherwomen's Financial Support to Family in Lean Fishing Seasons

In fishing communities women take on economically productive ventures to generate family income during lean fishing seasons. In Sri Lanka fisherwomen set up food stalls and make coir products and copra to supplement family income. In the coastal communities uneven flow of resources pushes women to seek income alternatives. They manage household finances during the absence of men. Fisherwomen, under these circumstance, are responsible for family's financial decisions. Yet, they are not usually perceived as major decision makers or managers of household resources.

5.3. Fisherwomen in Cooperatives/ Organizations for Collective Gains

In fisheries communities, women's groups are organized to improve their economic conditions. CIRDAP's programs

assist women in Indonesia, Philippines, Sri Lanka, and Vietnam expanding their income generating opportunities in the fisheries sector (CIRDAP, 1989). Bay of Bengal Program's much publicized efforts in this area of work fall under three categories: diversified income generating activities; training packages to improve the participation of women in their own technological, socio-economic and cultural development; and credit (Madhu, 1989). "In Shimoni, Kenya, a women's group has formed a cooperative and bought a fishing fleet, the catch of which they process and market, increasing their empowerment and decision making" (Cam, 1993).

5.4. Fisherwomen and Fisheries Credit

An FAO fisheries report recommends that "the socio-economic role of women in fishing communities should receive more attention and should be supported through appropriate credit and marketing arrangements" (1990). In some regions of Africa women are influential as bankers extending credit to fishermen. While in other regions women assume small loans as start up capital for their fish-smoking enterprise. In certain regions of Asia, women suffer

under the credit burden of their fishermen who are indebted to money lenders. When examined in the framework of household resource flow and dynamics, credit seems to be an essential input in small scale fisheries. A Philippines pilot credit scheme provided credit for women for a number of post-harvest activities such as fish smoking, fish paste, shell-craft and fish trading. In this programme the loan repayment rate was 97.4 percent, and women were able to raise their standard of living (FAO,1990). In the aquaculture context, Nash, Engle and Crosetti (1987) observe that "production projects invariably require a credit component. As access to credit and lack of management skills are constraints to the participation of women as producers, projects must have the facility to provide resources to meet these needs."

6. Ecosystem Degradation: Impacts on Women in Fisheries

Coastal communities depend on harvest from the sea. The harvest of the sea is threatened by increasing pollution and degradation of the environment. The fishing communities and families suffer from the effect of losses in fishes that are important

for subsistence and as a source of income. The sources of environmental degradation that impact on fishery stocks are agriculture run-off (pesticides and herbicides), domestic and industrial sewage, toxic industrial wastes from coastal factories, radioactive discharges, and oil refineries and oil spills. The coastal communities bear the cost of modernization.

"For fisherwomen, certain forms of pollution may directly affect the size of their catch and levels of income. The effect of pollution of rivers and mangroves in Suva, Fiji, was noticed by women in poorer communities who fished daily in those areas to supply the family with food and income" (APWRCN,1992). It is documented that "Many women are involved in fishing in the shallow waters of low-lying coastal areas, and their activities will be affected by any rise in sea level resulting from climate change. In southern Nigeria, where many rural women are involved in fishing and farming, the rivers and creeks are being polluted by the oil industry; and in Sierra Leone, local ponds fished by women are silting up. Women's income generating work of processing and preparing fish is also

affected by reduced fish supplies" (Rodda,1993).

7. Commercial Fishing: Impacts on Women's Fishery Activities

Worldwide increase in demand for seafood fosters commercial fishing. The growth in commercial fishing has led to the use of powerful technologies culminating in the over-exploitation of fish and the destruction of the aquatic ecosystem. Additionally, advanced technologies can threaten the livelihood of those dependent on the traditional fisheries sector. "The introduction of improved technology and methods aimed at increasing fish cash will normally increase women's work load in processing and marketing. This increase may be beneficial to women, permitting them to earn more income, but it can also be detrimental if it burdens them with additional work for which they get no economic reward or for which they are not adequately equipped" (FAO, 1988).

8. Impact of Fish Processing Development on Women in Fisheries

Changes in marketing structures, such as wholesale buying for processing

plants or export many also cause women to lose their traditional roles as processors and sellers (FAO, 1988).

Cam(1993) lists various examples of the impact of fish processing development on women. Some of these are presented here.

In Senegal, the bargaining power of female fish processors has decreased with the development of whole sale fish traders. Culturally in Sierra Leone trucks have always driven by men. The introduction of insulated lorries to improve fish transportation, had the effect of putting many of the predominantly female fish marketeers (who traditionally transported fish) out of paid employment

In India, urbanization has led to greater demand for fish in towns and cities. Fisherwomen, because of cultural and economic barriers, are not mobile and have been forced from the trade by stiff competition from men, who can ride bicycles or rickshaws.

Alternatively, commercial fish processing plants can open up paid employment. But these are usually tedious and labor intensive tasks such as peeling shrimp or working in fish canning lines.

9. Women's Concerns in Aquaculture Development

Technological interventions in the aquaculture sector can have mixed impact on the economic and social integration of women. Based on the information from 18 West African countries, Trottier (1987) summarizes the issues relevant to women and aquaculture development in the region: 1) Introducing fish farming into some key areas may involve the introduction of new species for higher value markets and even exports. These efforts at times can displace women from their traditional economic role in fishery production. In such situations appropriate compensatory alternatives should be established to assist women. 2) Introducing fish farming mainly and exclusively for male beneficiaries usually adds tasks to the work load of women. This produces a predominantly negative impact on the women unless there are returns to them, and they understand the work itself. 3) Access to fish ponds often liberates women from other fishing duties, and presents an opportunity to obtain fish more conveniently and regularly throughout the year. 4) fish pond responsibilities may interfere with other activities, such as cropping, which have

established rights of remuneration (FAO, edited by Nash, Engle and Crosetti, 1987).

8/4 (Though around the world women are involved in aquaculture production, it is almost universally considered men's work. In general women have no direct access to training or extension agents which enable them to acquire the knowledge necessary to increase productivity; only some 10-15 percent of the participants and trainers in training courses worldwide are women. The percentage of women extension agents has been even lower (Engle, 1987).) It is observed that while many opportunities exist for women to participate in aquaculture production, more specific identification of opportunities to upgrade and expand their activities is needed (Nash, Engle and Crosetti, 1987).

10. Economic and Social Conditions of Fishery Communities and Fisherwomen's Lives

As partners in developing resources for their household women have a stake in the basic services provided in the fishing communities. The poor quality or lack of basic services such as education, health care, housing, and drinking water affects the lives

of women. They could spend more time seeking these services. As members of the coastal communities, their uncertainty of living conditions is aggravated by exposure to unpredictable climatic conditions marked by cyclones and floods. As fuel wood supply decreases the women spend additional time or money to procure the fuel for cooking or smoking fish. According to a FAO review on women in fisheries, "women's work is almost always labor-intensive and time consuming, lacking the appropriate degree of technology which would facilitate the operations without threatening to make their role redundant. Two of the most needed improvements in rural fishing villages are the provision of transport and regular water supply; as it is women spend much of their time remedying the lack of these facilities" (1991).

Valenzuela (1989) states that "Rural women in fishing communities share the same fate or suffer the same if not worse compared to their male counterparts." In general the education level of women in these communities remains low (Heel, 1986).

11. Research Framework: Women in Fisheries

Harrison (1991) observes that "the socio-economics of aquaculture development is still a greatly under-researched field". Current information available on women in fisheries and aquaculture could be summed up as limited and fragmented. Mostly, in the aquaculture sector, the available information is either experiential or observation pieces written by those involved in aquaculture technology transfer. A research framework to document social and economic issues of women in fisheries should be viewed under two categories namely "what to study" and "how to study". "What to study" falls under the category of *content of the research* and "how to study" focuses on *research methodology*.

11.1. What to study

A FAO workshop on women in aquaculture identified the need to highlight women's participation in national aquaculture case studies and it also recommended the continued collection of statistics on the participation and contribution of women to the human resources of the aquaculture sector (Nash, Engle and Crosetti, 1987). A World Bank report on research needs for aquaculture development identifies the areas

of investigation relevant to the socio-economics of aquaculture such as: social organization, organization of production, units of production, distribution, and consumption; economic activities, inter-and intra-household differential access to resources of land (and water and fishery resources), labor and capital; land/water tenure and use; division of labor by gender, age, and status; labor availability, strategies and migration; marketing and rural-urban exchanges (World Bank-151, 1991).

All or any of these issues should be studied in a gender- segregated framework. Such gender segregated information can document the women's participation in the aquaculture and their struggle to access strategic resources for effective participation to improve the productivity in aquaculture sector.

A suggested list of socio-economic issues related to women in fisheries is presented in this section for discussion. The suggested issues can be studied in relation to aquaculture, freshwater fisheries, and integrated fish farming.

- * Economic and social organization of the aquaculture / fishing

communities which influence women's activities and status

- * Integrated fish production system preferred by women as users of the system
- * Customary and legal rights related to common property resources that can influence women's participation in aquaculture and fisheries production
- * Labor input and decisions by women for aquaculture/ fisheries/fish farming system for various activities
- * Seasonal variation in women's activities in aquaculture/ fisheries
- * Seasonal variations in the flow of income, and fish as food into the household and their impact on household food security and basic needs fulfillment
- * Women's resource generation strategies to cope with seasonal variations of income
- * Women's perception of importance of aquaculture for improving their living level
- * Women's knowledge related to aquaculture/fisheries
- * Women's indigenous knowledge related to local plants and feed

- materials which can be cost effective inputs in aquaculture production
- * Women's need for knowledge and skill development to adopt and manage aquaculture/fisheries ventures
- * Women's access to land, credit, technology, relevant inputs, and extension to adopt and support aquaculture/fisheries enterprise
- * Feasibility of organizing women's groups to encourage adoption and improve management of aquaculture/fisheries enterprises
- * Women's access to and control over the use of income generated from their aquaculture/fisheries activities
- * Women's special problems in approaching government agencies and using aquaculture/fisheries development assistance
- * Social, cultural and institutional biases preventing women's participation in aquaculture/fisheries development

11.2. How to Study

Traditionally a large sample survey is used to study a problem. This method is

still valid and needed for specific purposes. An alternative method now becoming popular is the "Participatory Appraisal." A participatory research approach involves the users or stakeholders in identifying the needs. Such a participatory appraisal helps the participants to analyze their resources, constraints, and opportunities with outsiders acting as facilitators. It is a process of learning together to plan together. User participation also increases their commitment to the interventions. The participatory appraisal provides situation and community-specific information. Diversity in the social and economic realities and variability in natural resource bases are the characteristics of the communities where aquaculture /fisheries interventions are promoted. Hence, situation-specific information on community needs and user commitment are crucial for aquaculture /fisheries enterprises to take root and succeed.

Chambers (1992) states that participatory approaches and methods can enable rural people to enhance their own analysis, provoke revealing debate, provide agenda for discussion, and able to provide accessible means for farmers to communicate their priorities to extension agents and scientists. According to a World Bank report,

Bay of Bengal Programme's effectiveness lies largely in the involvement of the fishermen in the early stage of research and throughout the research process (World Bank-147, 1991). An ICLARM supported aquaculture development in Malawi promotes a participatory approach. Lightfoot, Boble, and Morales observe that the process of involving farmers as partners in research has contributed to the success of this Malawi project (1991).

An example of participatory approach as applied to Aquaculture is the participatory linkage diagramming of bioresource flow modeling. An example is presented in Figure 1 and 1 a. But we cannot not assume that participatory approach is always gender sensitive or explicitly seeks women's perspectives in the issues analyzed (Alice Welbourn, 1991; Guijit, No date). Participatory research should be planned to explicitly include women as participants. I have illustrated in the diagrams 2 and 2a how the bio-resource flow diagramming comes to life reflecting the gender differentiated participation in aquaculture. In planning the aquaculture / fisheries research, one cannot stress enough, the importance of the following issues: including women as the

sample in the study; developing gender differentiated data/ information base and identifying women's constraints to access resources, technology, and training.

12. Conclusion

The presentation on socio-economic issues related to women reviewed the women's activities in diverse spheres applicable to fisheries sector. Women in their multiple roles are managers of natural resources and food security. In the fisheries sector there are many issues which are pertinent to both men and women in the fishing communities. But the social, cultural, and institutional biases affect women either more adversely or differently in comparison to men. For any sector development to succeed, we need to understand the potentials and limitations of all factors of production. In developing countries human resource is a crucial factor of production and women make up half of the human capital. We cannot afford to ignore the potential of 50 percent of human capital in any production system, for both reasons of efficiency and equity.

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ROLE OF WOMEN IN INLAND CAPTURE FISHERIES - A CASE STUDY OF FISHING LOTS IN THE GREAT LAKE

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Introduction

Inland capture fisheries in Cambodia is an important area in which women play a significant role. Thousands of women members within the farm households participate in catching and processing of fish in the floodplain fisheries as part of family fishing activity and in the commercial fishing, particularly in fishing lots. There are nearly 300 fishing lots located in the Great lake and major river systems of Cambodia, which produce nearly 60,000 metric tons of fish annually.

This paper describes the role of women in fishing lots by investigating a typical fishing lot located in the Pursat province in the Great lake. Fishing lot No. 7 is one of the 57 lots in and around the Great lake. It is located in Kampong Loung commune, Krokro district

in Pursat province. The lot is being leased out on a two yearly contract. The current lease value is 200 million riel (\$8,000). The leaseholder manages the fishing operation with the help of three partners and a work-force of 88 people consisting of both male and female laborers. Most of the laborers are members of families who have been working for the current leaseholder for the last seven years. At present 20 such families are working as the regular work-force in the fishing lot.

Almost all male and female members of the permanent fishing households participate through out fishing preparation (September-January) and fishing operations (February-May). Fishing preparation involves procurement of bamboo and cane materials for fishing fence and traps, construction of fence and traps, sewing and repair of

nets, repair of boats and establishment of seasonal fishing base near the site of the lot. Women play a significant role during this period by providing labor force for the construction bamboo fences, nets and fishing gear. The actual fishing starts in February after the fences and traps are placed all around the lot site, and fish catching continues until the end of May. From June to August, it is usually the off-season with no significant labor activity. Only the lot owner, the partners and master fishermen supervise the sale of fish kept in the cages. The ordinary workers, both men and women, look for alternative employment. Total fish harvest during the 1993-94 fishing season was 260 metric tons with an estimated value of 385 million riel (\$154,000).

The role of women.

Women play an important role in the operation of fishing in the lot. More than 40% of the work-force are women (Table 1). They are traditionally involved in the construction of bamboo fences and sewing and repair of nets prior to the start of fishing operation. During fishing operation a lot of women go with the fishing team in the lot site and

participate in fish handling, processing as well as cooking for the team.

Material and methods

One member from each of the eighteen families who have been working for fishing Lot No. 7 located in Pursat province in the Great Lake were interviewed. using a structured questionnaire, information regarding their household characteristics as well as their involvement in income generating activities were obtained .

Results and discussion

Distribution of labour-force

The total labour-force in fishing Lot No. 7 is about 88 and out of this 36(41%) are women (Table 1).

The labour-force is divided into 4 types:

- One master fisherman : He plays a significant role in finding out fish migration and assessing availability of fish . He also decides on time to catch fish

- Three technician : There are 69 ordinary workers engaged in different activities, namely fence making , nets sewing , boat repairing , setting up fence ,

catching fish , processing fish and cooking for the fishing team.

- Security guards: 15 men security guards are especially hired during fishing operation only, their role is patrolling and protecting lot from fishing poachers.

Marital status

Among 18 women in 18 families, there are 14 women who are married (78%), 3 women (17%) are divorced, and only one women is window (Table 2).

Demographic characteristics of women workers

Among 18 women interviewed, the age ranged between 21-30 years for 9 people (50%), for 3 people it varied from 31-40 years (17%), between 41-50 there were 4 people (28%), and one women was 51 years (6%) (Table 3). The age bracket of the majority of the Women (67%) was between 21-40 years.

Educational status

It is an undeniable fact that women workers are less educated: among 18 women workers there are 13 (72%) with no education while 2 (11%) can only

read, 3 others have (17%) completed primary education (Table 4).

Decision Making status in the family

Apart from the man, women can also make a decision for family. Among the 18 families there are 11 families (61%) headed by women (table 6).

Size of family

Size of the family varied greatly. There are 2 families with 2 people, 3 families with 3 people, 6 families with 4 people, 6 families with 4 people, 5 families with 5 people, 1 family has 7 people and another family has 8 people (table 7). The average size of the family is 4 .

Type of works in which women are engaged:

The majority of women are involved in fence making. We have seen during fishing preparation that there are 16 people (89%) make bamboo fence. 13 people (72%) continue the same work, during fishing operation. Only 1 person make fence making & net sewing and 1 person cook during fishing preparation.

During fishing operation, there are two women who process fish and 3 women (17%) cook and process the fish (Table 8). Generally, women work more than 10 houses a day. Amounting 18 women, 4 women (35%) spend 8-9 hours/day. 14 women (61%) women spend 10 and above (table 9).

Income of women workers

We looked into the income of the 18 women and among these, 5 women go to fishing lot during fishing operation they can earn an average income 528,000 riel/year. It covers 56% of the family, while 8 women stayed in the village with outside income during post-fishing operation. They can earn 326,000 riel and the last group stayed in the village with no outside income during post-fishing operation and such people can earn 288,000 riel (Table 11).

Gender participation in non-cash activities within the household

The result from survey conducted showed that almost women in 18 families is responsible to non cash activities within the household, while men were responsible

on some hard works, namely wood gathering, fetching water, etc. There are 89% women responsible on cleaning activities, 83% looked after children, 39% gathered water, and only 17% men fetched water.

Conclusion

Women play an important role in fishing lots, often contributing a higher amount of cash income to their families compared to other members. They also perform diverse non-cash activities within the household compared to their male counterparts. During the post-fishing season they have very little job opportunities. More jobs need to be created for women during this season. A lot of women can not take part in fish handling and processing at the lot site during fishing season because of their obligation to stay in the villages to look after their children and perform household duties. Efforts should be made through rural development programs to create more job opportunities for women to enable them earn stable income throughout the year.

Table 1. Distribution of labour-force in fishing lot No. 7, Pursat, 1993-94

Type of labor force	Male	Female	Total
Master fisherman	1		1
Technician/Skilled worker	3		3
Ordinary workers (a)	33	32	65
Cook		4	4
Security guards	15		15
Total	52	36	88
Percentage (%)	59	41	100

(a) The male workers are mainly fishing laborers, boat and net repairers and boat drivers; while female workers are mainly fence makers and fish processors.

Table 2. Distribution of female workers by marital status, Pursat, 1993-94

Status	Number	Percentage
Married	14	78
Divorced	3	17
Widow	1	6
Total	18	100

Table 3. Age distribution of women workers, fishing lot No.7 Pursat, 1993-94

Age group (years)	Number	Percentage
Up to 20	0	0
21 - 30	9	50
31 - 40	3	17
41 - 50	5	28
51 and above	1	6
Total	18	100

Table 4. Educational status of women workers, Pursat, 1993-94

Educational level (years)	Number	Percentage
No education (a)	13	72
Can read only	2	11
Primary	3	17
Total	18	100

(a) - Poverty was cited as the main reason for no chance of education

Table 5 Distribution of the women workers by education level of children in the family

Status	Number	Percentage
No schooling	15	83
Primary school	3	17
Total	18	100

Table 6. Distribution of women by head of family.

Status	Number	Percentage
Herself	11	61
Husband	7	39
Total	18	100

Table 7. Distribution of women workers by size of family.

Size of family	Number	Percentage
2	2	11
3	3	17
4	6	33
5	5	28
6	0	0
7	1	6
8	1	6
Total	18	100

Table 8. Distribution of women workers by type of work during different period.

Type of work	During fishing preparation		During fishing operation		During post-operation	
	No.	%	No.	%	No.	%
Only fence making	16	89	13	72	0	0
Fence making & net sewing	1	6	0	0		0
Only cooking	1	6	3	17	1	6
Cooking & processing	0	0	0	0		0
Only processing	0	0	2	11		0
Total	18	100	18	100	1	6

Table 9. Number of hours spent working for lot owner in different period during the year.

	During fishing preparation	During fishing operation	During post-operation
2-3 hours	0	0	18
4-5 hours	1	0	0
6-7 hours	0	0	0
8-9 hours	6	4	0
10 & above	11	14	0
Total	18	18	18

Table 10. Average income of women workers in different period during the year (Amount in riel)

	No	Period 1 preparation	Period 2 fishing	Period 3 post-fish	Total annual
Those who go to fishing lot	5	174000	298000	56000	528000
Those who stay in the village with outside income during post-fishing	8	139000	139000	48000	326000
Those who stay in the village with outside income during post-fishing	5	144000	144000	0	288000
Total	18	150000	184000	37000	371000

Table 11. Percentage contribution of women workers in the total family cash income.

	Percentage
Those who go to fishing lot	56
Those who stay in the village with have outside income during post-fishing	43
Those who stay in the village with no outside income during post-fishing	30
Total	129

Table 12 Gender participation in non-cash activities within the household.

	Female (%)	Male (%)
Cleaning/washing	89	0
Child care	83	0
Cooking for family	83	0
Fetching water	39	17
Wood gathering	0	39
Teaching children	6	0
Total	300	50

A STUDY ON THE ROLE OF WOMEN IN CAPTURE FISHERIES, KOMPOT PROVINCE

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Abstract

In all cases women contribute significantly to the fishery sector in Kampot province. They are not only represented in the traditional processing sectors but also in the actual fishing, once thought to be solely a male occupation. Women therefore have multiple roles-they provide family food security, prepare and cook food and look after the house and children. All but two of the households visited were involved in two main fishing activities - push netting at night for shrimp or crab catching during the day. Both of these activities take place in the coastal seagrass beds. Women involved in push netting ("Chhiup") were worse off financially (average income per year was 183.70\$) and socially (having to work throughout the night) than those involved in crab catching ("Chhmuork Kdam"). Women catching crabs earned a mean income of \$ 235,60 per year from fishing and had a more normal life as their activity took place during the day. Furthermore, push netting was a far more rigorous and dangerous activity. Women often cut their feet on razor shells in the grass and spent up to two or three hours at a time in the water.

Introduction

Kampot province is located in the south of Cambodia. Its southern border meets the Gulf of Thailand and its coastline is dotted with numerous fishing villages. The province is made up of 8 districts, has a total population of 446,067 and contains 84,888 families. 20,686 of these households are headed by single women with

children and more than 50% of the total population is under the age of 18 years old (UNDP/ILO, 1993). There are 3 coastal districts - Kampot town district, Kampot district and Kampong Trach district which borders Vietnam. The provincial seat of the province, Kampot town is situated on the coast and its surrounding area contains some

21,429 people Kampot province central market is also located in the provincial capital. In an effort to be better understanding the role of women in the capture fisheries of Kampot province. Women in development (WID) with the assistance of Australian People for Health, Education and Development Abroad (APHEDA) undertook a 2 week survey of 23 fishing households in three villages situated in Kampot town district and Kampot district.

Methodology

A questionnaire was designed by APHEDA and the survey was conducted by 4 WID staff over 10 days (17-19th and 20-26th Nov). The questionnaire was divided into 5 parts which included;

1)General household information (including number of children and educational status),

2)Household division of labor (functions performed and time spent/day on each task)

3) Decision making (who makes the decision and what types are important)

4)Household income and expenditure (costs and income) and

5) Marketing (sold locally and to whom).

Results obtained were analysed. Income data was transformed at an exchange rate of 2500 riels/USD. Data was compared by sorting variables such as age (Table 1) and income derived by fishing method (Table 2). As the majority of households were involved in either crab catching (n=9) or push netting (n=12) the remaining two fishing activities (throw net and crab cage) have been excluded from the results and discussion.

Results

Household information

The average age of the 23 women interviewed was 40 years (see Table 1). 13 women were married and 10 were widowed (mainly in Daun Toak village). All widows were head of the household but not all married households had men as the head. 4 of the 13 married households had women (30.8%) in charge, probably due to the inability of the man to provide any income. 60.9% of all the households interviewed were headed by women. The overall educational status of women, generally, in these households was very poor - 17 of the 23 women were illiterate (74%). The remaining 6 women had only reached primary and secondary levels. Women older than 40 years (n=12) were more illiterate (91.7%) as

compared to 45.5% of women in the less than 40 years age group (n=11) (Table 1). The average number of children per household was 2.6 - 95% of children from all households were under 18 years of age. Women older than 40 years had nearly twice as many children (n=38) as those of 40 years old and younger (n=22).

Division of labor

In all the households interviewed women were expected to not only to provide food security but cook, clean the house and look after the children. Women complained that they did not get enough time to rest each day due to the multiple roles they had to perform within the family. In all situations the male had more spare time than the female. Even when the male was required to carry out alternative tasks these were often less strenuous than the women's (i.e. tending the animals). The daily routine for women involved in push netting and crab catching are summarized in Table 3.

Decision making

In married households the final decision regarding the family was not always made by the head of the family, it was sometimes made jointly with the partner (1 in

4 female headed households and 3 in 9 male headed households). In the remaining 9 households where the head of the family made the final decision it was only after discussing it with the partner. Though older children often joined widows in decision making, final decision was always made by widows..

Household income

Fishing supplied at least 60% of all household income per year (see Table 2). Other sources of income were obtained from either selling excess rice, tending/selling livestock and from work (probably laboring) outside the village. Women involved in push netting (n=9) earned less per year than those involved in crab catching (n=12). They had a mean income per year of \$183.70 compared to those catching crabs who earned \$235.60 per year. However, seven of the nine crab catching households in Daun Toak village had no other income source. This probably reflects the high percentage of widows interviewed in Daun Toak village. In contrast ten of the 12 push netting households had at least 1 or 2 other income sources. These other income sources, however, did not contribute significantly to the household income. Push netting households with two other income sources (n=5) earned only

slightly more than a household surviving solely (n=7) on catching crabs (a mean of \$259/year compared \$ 248/year).

Marketing

Crab meat is sorted into three quality categories (claw, body and leg meat) and sold to the village middleman. He pays 6,000 riels/kg(approx. \$2.40) irrespective of the quality categories which seems unfair. Furthermore, he also reduces this price if households have no high quality claw meat available. The middleman then sells it to the processor/distributor in Kampot town who sells the meat in Thailand. Claw meat is in the highest demand. The processor/distributor also employs women for value adding. They make crab/prawn sticks which are then deep fried and sold in Phnom Penh. This whole process, from catching, cooking, peeling, sorting and value adding is reliant on women. In contrast, the shrimp obtained from push netting is either sold directly by the family at small local markets or to the local middleman who sells it at the main provincial market. The shrimp are boiled, dried in the sun, placed in a bag and beaten to remove the shell. All this work, including the selling is done by women. The women also make a paste by grinding up the smaller shrimp.

Discussion

The main objective of this study was to gain some insight into the role of women in coastal capture fisheries. Additionally, this study has also highlighted the status of women more generally. The most striking example of this is education or more precisely the lack of it - 74% of the women (17 of the 23) interviewed were illiterate (Table 1). Furthermore, women were expected to perform multiple tasks within the family unit - provide family food security, prepare and cook food and look after the house and children. Many had little or no time to themselves and complained of lack of sleep due to overwork. The majority of women interviewed were involved in either crab catching or shrimp push netting. Women involved in shrimp push netting worked physically harder and longer hours and made less money than those catching crabs. They also had to travel and work at night which is more dangerous. Their feet were often cut while push netting in the seagrass. Women catching crabs were better off as they worked from a boat during the day and returned to their family at night. It seems unfair that only one price is available and not three depending on whether leg, body and claw meat is sold. A women's cooperative could overcome these problems

by selling directly to the processor and thereby removing the middlemen. Finally, the significant contribution of women in capture fisheries and family food security needs to be

fully acknowledged on a national scale in Cambodia and discrimination, especially in education, discouraged and readdressed.

Table 1. Summary of general household information

(Data sorted into 2 groups: Women under and including 40 years old and those above 40 years old)

Village	Fishing activity	Family Name	Sex	Age	Marital status	Head of Family	Education	No. of child	<18 years
Tolung Thngay	Push net	Uk Ro Har	F	22	M	No	Primary (2)	2	2
Trapaing Sangker	Push net	Um Bun Thoeun	F	25	M	No	Primary (4)	1	1
Trapaing Sangker	Push net	Eng chhoeun	F	25	M	No	Illiterate	2	2
Trapaing Sangker	Push net	Yee Vany	F	25	M	No	Illiterate	0	0
Tolung Thngay	Push net	Touch Meng	F	29	M	Yes	Illiterate	2	2
Tolung Thngay	Push net	If Vanny	F	33	M	Yes	Illiterate	1	1
Trapaing Sangker	Push net	Pao Yoeun	F	33	M	No	Secondary (7)	4	4
Tolung Thngay	Push net	Sin Savy	F	37	W	Yes	Illiterate	2	2
Daun Toak	Crab lift net	Mam Ty	F	39	W	Yes	Secondary (8)	2	2
Daun Toak	Crab lift net	Los Matt	F	39	M	No	Secondary (8)	2	2
Trapaing Sangker	Push net	Tann Houn	F	40	M	No	Illiterate	4	4
Tolung Thngay	Drum crab trap	El Non	F	41	M	Yes	Illiterate	6	6
Tolung Thngay	Push net	If Roeun	F	41	W	Yes	Illiterate	2	2
Daun Toak	Throw net	Ngout Matt	F	42	M	No	Illiterate	5	5
Tolung Thngay	Push net	Sarm So Phart	F	44	M	Yes	Illiterate	7	7
Daun Toak	Crab lift net	Sa Vy	F	45	W	Yes	Primary (3)	3	3
Daun Toak	Crab lift net	Neak Mum	F	45	W	Yes	Illiterate	1	1
Tolung Thngay	Push net	Sim Yas	F	50	W	Yes	Illiterate	3	3
Daun Toak	Crab lift net	Sou Dam	F	50	M	No	Illiterate	1	1
Daun Toak	Crab lift net	Mole Sea Yas	F	51	W	Yes	Illiterate	4	1
Daun Toak	Crab lift net	Nget Tes	F	54	W	Yes	Illiterate	2	2
Daun Toak	Crab lift net	Sok Mok	F	55	W	Yes	Illiterate	1	1
Daun Toak	Crab lift net	Matt Yai	F	55	W	Yes	Illiterate	3	3

Table 2. Summary of yearly fishing income

(Data sorted to compare income (US dollars) from different fishing activities)

Village	Fishing activity	Family name	Head of family	Marital status	# Income sources	Income from fishing/Yr.	% from fishing
Duan Toak	Crab lift net	Mrm Ty	Yes	Widow	1	216	100
Duan Toak	Crab lift net	Na Vy	Yes	Widow	1	201.6	100
Duan Toak	Crab lift net	Neak Mum	Yes	Widow	1	230.4	100
Duan Toak	Crab lift net	Nget Tes	Yes	Widow	1	432	100
Duan Toak	Crab lift net	Sok Mok	Yes	Widow	1	152	100
Duan Toak	Crab lift net	Mltt Yai	Yes	Widow	1	216	100
Duan Toak	Crab lift net	Los Matt	No	Married	1	288	100
Duan Toak	Crab lift net	Mote Sea Yas	Yes	Widow	2	212	89.83
Duan Toak	Crab lift net	Sou dam	No	Married	2	172.8	92.31
Trapaing Sangker	Shrimp push net	Um Bun Thoeun	No	Married	1	172.8	100
Trapaing Sangker	Shrimp push net	Eng Chhoeun	No	Married	1	187.2	100
Trapaing Sangker	Shrimp push net	Yee Vany	No	Married	2	216	88.52
Tolung Thngay	Shrimp push net	Sin Savy	Yes	Widow	2	144	78.26
Tolung Thngay	Shrimp push net	It Roeun	Yes	Widow	2	144	81.82
Tolung Thngay	Shrimp push net	Touch Meng	Yes	Married	2	208	81.25
Tolung Thngay	Shrimp push net	It Vanny	Yes	Married	2	216	81.82
Tolung Thngay	Shrimp push net	Sim Yas	Yes	Widow	3	180	77.59
Trapaing Sangker	Shrimp push net	Sarm So Phart	Yes	Married	3	216	64.28
Trapaing Sangker	Shrimp push net	Pao Yoeun	No	Married	3	144	83.72
Trapaing Sangker	Shrimp push net	Tann Houn	No	Married	3	288	79.12
Tolung Thngay	Shrimp push net	Uk Ro Har	No	Married	3	88	45.83

Note: Drum crab trap and throw net excluded from analysis

Table 3. Daily routine for women involved in push netting and crab catching in Kampot Province.

Crab catching	Push netting
3 AM: Rise to cook rice and pack other food for eating while at sea.	3 PM: Prepare tools (torch lamp, fish cage and push net) as well as cooking rice, water and feed animals, tell children to take care of house
4 AM: Leave home for sea	4 PM: Leave home for sea
5.30 AM: Reach the sea at dawn and set crab nets in water for 1/2 hour before returning to pull them up.	6 PM: Arrive at fishing place at low tide, tie lamp torch around neck, fish cage to hip and place net in the water. Begin pushing
3 PM: Return home and boil crab catch immediately	
4 PM: Peel crab shells and sort meat into 3 quality categories and sell to village middlemen	Push net for 200-300mt at one time, collect catch and place in fish cage attached to hip. Women push for 2-3 hours without rest.
5 PM: Go to buy trash fish for next day operation using as bait	3 AM: Finish push netting and head home
6 PM: Prepare house and cook meal for family	6 AM: Arrive home and immediately prepare catch for selling at market

WOMEN'S PARTICIPATION IN THE SCALE INTEGRATED AQUACULTURE PILOT PROGRAMME (YEAR 1)

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Abstract

Rural Cambodian women in the SCALE Pilot Programme had an active involvement in all the aspects of integrated aquaculture investigated. Role divergence was seen between men and women in the level of participation for particular tasks related to integrated aquaculture. From the 16 families implementing integrated aquaculture farm-based trials (FBT's), women contributed to 31% of the total activity, while rest was shared by men 55% and children 14%. The percentage of involvement of women was in marketing fish, (45%) feeding fish, (38%) liaising with SCALE field staff, (35%) making technical decisions (35%) and harvesting fish (32%). There was a lower involvement of women in extension, food collection, pond construction and financial decision making with women comprising 26%, 25%, 15% and 10% of the total number of individuals working in each of these activities, respectively. An average of 73% of all the men, 40% of all the women and 6% of all the children from the FBT households were participating in each activity. The constraints and gender stereotypes women face and strategies to promote a more equitable women's involvement in integrated aquaculture and its extension are discussed.

Introduction

The SCALE (Southeast Asian Outreach Cambodia integrated Aquaculture on Low Expenditure) Integrated Aquaculture Programme is committed to facilitating the extension of appropriate,

farmer-proven integrated aquaculture systems (IAQS) to small-scale, resource-poor households in the Kandal Province of Cambodia. These IAQS were developed after an extensive baseline survey (carried out

over 14 months) which was designed to gather detailed information on the physical and socioeconomic environment of the farm households. This is one of a range of strategies designed to respond to the decline in Cambodia's freshwater fisheries production since the 1960's, with a view to make fish protein more accessible to the rural poor,

Central to the SCALE development strategy is an emphasis on farmer research. This includes use of farm-based trails (FBTs) owned and wholly managed by participating farm households. The farm households receive technical advice, credit supply and fingerling distribution support from the SCALE programme, but take full financial and decision-making responsibility. This empowers farmer research as the introduced IAQS are refined by the farm households to systems that are socio-economically appropriate, indigenised and sustainable. A household's refinement of the IAQS and its practice is closely monitored on the farm. The ownership and managerial capacity fostered through these trials, promote farmer's potential to actively extend their ideas to others. Through the support of farmer clubs, SCALE is seeking to promote the cross-pollination of proven IAQS by a

development process which is becoming increasingly farmer-led.

The objective of this paper is to investigate the division of labor and decision making within the households participating in the first year of the SCALE pilot programme. The comparative role of women is discussed. Possible ways to promote a programme that is able to facilitate understanding of and the potential to extend integrated aquaculture by men and women are explored.

Framework of Analysis

The data analysed was collected by a number of informal research methods drawing on conversations with the farmers and a range of farm-monitoring records and reports. The first year covered 13 FBTs, owned by 16 farm households, which were visited on a weekly basis.

Specific farm households were allocated to Field staff. Groups of three field staff visited their farm households on a weekly basis, from the time of pond or refuge trench construction until after harvesting, marketing and consumption of the fish. During each visit, the field staff discussed farming system issues with the farm household, gave advisory support using a

seeing and doing participatory approach and completed a detailed farm record to facilitate monitoring of the farm system. Weekly reports and weekly meetings to discuss FBT visits were also used to monitor the FBT programmes.

Nine major activities related to integrated aquaculture were selected for participatory evaluation. These activities were: pond construction and preparation, food collection, fish feeding, fish harvesting, selling or marketing of fish, extension of integrated aquaculture, technical decision making, financial decision making and liaising with the SCALE field staff to share technical information.

The involvement and number of individuals in each participatory category (men, women, and children) in each activity were recorded by the Field staff after completion of the pilot programme of year 1. Some activities had the participants and degree of labour recorded in the farm record, whilst other details were completed drawing from the weekly reports and staff knowledge of the households.

The calculation to assess the distribution of labor by class, i.e. the percentage of total work done by men,

women and children was carried out by dividing the total number of individuals from each class working on an activity by the total number of individuals working on that activity. The participation in aquaculture expressed as a percentage within each class was calculated by dividing the number of individuals of each class involved in each activity by the total number of individuals in that class. All the calculations assumed that each individual had an equal level of input.

The variable role of women

The 16 families surveyed, carrying out 13 FBTs, consisted of 16 men, 16 women, and 51 children. One family unit was headed by a widow and one by a widower. The remaining households consisted of two-parent households.

Percentage of work done by each participant class

The percentage of the total work done by each class for each activity is illustrated in Figure 1. The equal number of men and women involved in the FBTs allows direct comparison, but there is not weighing to compensate for the larger number of children within the households. (See Figure 2

for analysis by the number of individuals from each class).

These results show that men make up the dominant component of the work force for all the activities. 46% to 70% of the work force for each activity was made up of men (55% average). Women made up between 15 and 45% (31% average) of the total work force for each activity. Children were the least represented group, contributing between 5 and 26% (14% average) of the total labor force.

In considering the individual activities, some trends in the distribution of responsibilities can be seen. Within activities that have a large component of manual tasks such as pond digging, feed collection and harvesting, there are similar patterns indicating men carry out approximately 50% of the work, with women and children carrying out approximately 25% each.

The distribution of labor for feeding, technical decision making and discussing technical issues with the Field staff, which are closely linked technical components, show a similar pattern. While child involvement was low (5-12%) and women's involvement above average at 31% (33-

38%), men's involvement dominated with just over half of the inputs (52-62%).

Marketing and selling of fish shows the highest level of women's involvement, equal to that of men at 45%. Financial decision making and extension, both of which have a strong off-farm, socioeconomic value, are strongly dominated by men, who carry out 70% and 66% of the work for these respective activities. Women's level of involvement at 20% and 27% is far higher than that of the children (10% and 7%).

Level of participation within each participant class

Figure 2 illustrates the percentage of men, women and children involved in each activity. Men showed the highest level of participation, with an average of 73% of men in FBT households being involved in an activity. The highest involvement, with more than 90% of men involved, was in pond digging and preparation, harvesting fish, and making technical decisions. The levels of participation by women covered a range of 13% to 63% with an average of 41% of women in FBT households being involved in an activity. Marketing fish, harvesting fish, feeding fish and making technical decisions were all activities that at least 50% of the

women were involved in. Children's involvement was low, with an average of 6% of the FBT household children being involved in each family.

Is participation of women adequate -
? While men dominate most activities, women play a definite role in all aspects of integrated aquaculture. This role may be even more important when taking into account the women's traditional role as coordinator of children's activities (Arnvig 1994; Ledgerwood, 1994; Sonnois, 1990). However, the results are indicative of role divergence by gender that possibly show social inequalities and discriminations. Women have low financial decision making and extension involvement's and this may be indicative of a lower social and economic status

These findings conflict with the literature that repeatedly emphasis the Cambodian Woman's position as the one in charge of the household economy (Arnvig, 1994; Sonnois, 1990); "rural women in particular were notable for their independence, authority and resourcefulness in maintaining their households and handling economic matters"(Ebihara, 1990). This role is highlighted in popular Cambodian proverbs, for instance "Wealth is there

because the woman knows how to save and be frugal; a house is comfortable and happy because the wife had a good character". Popular mythology such as "the women with holes in her basket" expounds the behavior of the ideal Cambodian women as someone able to cook well, take care of children, be totally obedient to the husband, keep the family wealth and be in charge of marketing (Ledgerwood, 1994). qualitative results from the SCALE baseline analysis suggest that women play a larger role in financial decision making. The extent of this role and an investigation into gender-related issues over control of household resources would be useful topics for further study.

There are large numbers of widows and wives of men handicapped as a result of land-mine and war-related injuries in Cambodia. The SCALE baseline analysis indicates that between 3% and 33% of households are headed by widows within the five areas surveyed throughout Kandal province (Dowall et al, 1993). These results are backed by Redd Barna reports indicating that women make up 60-65% of the population and that 30-35% of Khmer households are headed by women. UNRISD data indicates that Cambodia has 2-10 million land mines in its land and the highest proportion in the worked (4 per 1000) of

disabled people in its population, with 250-300 new injuries per month. Considering this, the potential of integrated aquaculture as a tool of rural development could be restricted if men are heavily relied upon to perform key activities. This is particularly evident in pond digging. Women's involvement in this activity was found to be low (15% of the pond digging labor was provided by women) and in all cases where women were involved; it was together with the men of the household/and or related to smaller levels of construction such as pond modification or construction of rice paddy refuge areas

In one case, a widow withdrew from the programme as the labor requirements were too high. In this case, there was only one young male in the house and a young child. She was busy with rice-growing, livestock-raising and other on-farm activities. The design of the IAQS to be labor-rather than capital-intensive so as to be accessible to the rural poor, further compounds such limitations. However, syndicate partnerships where the widow is a silent partner providing the land or other resources or where the labor is divided could be possible solutions to over-burdening widows.

Another activity that may have shown gender stereotyping was guarding the ponds. General observations from the Year 1 programme indicate that where active guarding used is a male's activity. However, the widow despite refusing to guard her pond, due to fears of evil spirits, was active in taking security precautions such as placing thorn bushes in the ponds to snag thieves cast-nets. The location of a pond is a major factor affecting susceptibility to theft. This may be a consideration in pond-site selection, especially in households headed by women.

The characteristic involvement of the whole family in integrated aquaculture suggests that extension and training should be tailored to reach each participating class. This may require challenging aspects of traditional extension methods such as visit times and lengths, the gender and background of extension facilitators and the use of creative methods to promote wider farmer participation in facilitating extension,

Literacy and educational barriers are also likely to be more predominant among women. 1990 figures show that Cambodian adult literacy rate is 22% for the female population and 43% for the males (Sonnois 1990).

Because women, especially those with children are often less mobile, the dynamics of farmer-led extension among women may heighten the importance of localized support systems using farmer clubs. Given the high level of involvement by men in extension, it is possible that there are some gender prejudices, either in receiving such information from women, or in the women's own perception of their ability to extend new ideas. If these assumptions are correct, then it should be asked how to appropriately challenge such stereotyping to promote and build the capacity of women to participate in extension activities,. Specifically promoting women-to women extension might require different focuses and allow a better quality of interaction, but it could be an active step in reinforcing gender stereotypes. This raises difficult questions regarding cultural appropriateness and the level of outside interventions optimal in attempting to promote indigenised, sustainable development processes.

Weekly field staff visits involve working alongside the household members on each task, providing support by facilitating household initiative and active participation's in implementation. This is designed to overcome educational barriers. The 50-50 split of male and female field staff

supporting the FBT pilot programme should also empower both male and female FBT household members to develop their understanding and skills in integrated aquaculture. Thirty-eight percent of the women in the FBTs were involved in discussing technical information with the field staff(compared to 56% of all the men and 4% of all children in the FBTs). This indicates the need to further facilitate women's involvement in the technical aspect of their participation.

One strategy promoting this could be to encourage more participation by women in village farmer clubs. SCALE actively promotes women's participation in these clubs, but although one farmer club hosted by FBT households has a women as its vice leader, the ratio of women to men attending farmer club meetings is generally less than 50:50. Possible ways to improve women's participation in farmer clubs need more study. These might include assessing the different perceptions or values that men and women have about the benefits of integrated aquaculture and also the competition between men and women in prioritizing fish use for family consumption or income generation. Evaluating the role of women in other aspects of aquaculture, such as pond security, fish processing and preservation

and spawning activities will also be tailoring of farmer clubs and extension strategies or activities could be carried out to appeal to a wider audience with the aim of involving men and women in appropriate, sustainable development.

Broader benefits of integrated aquaculture such as nutritional and family health benefits associated with eating fish or partial harvesting systems that could provide enough fresh fish for family consumption over a prolonged period are possible topics that could (given the woman's role as child raiser and cook) make integrated aquaculture more relevant and interesting.

Such strategies to promote greater equity between men and women in opportunities to learn about integrated aquaculture, and thus be more involved in decision making, may depend on the distribution of benefits within the family. However, the process of involving women in extension and participation may itself empower them in decision making. In turn may allow increased control in allocating resources. This approach aims at a more equitable and complete involvement of the whole family. The current workloads of men and women, however, must also be

important. Given this information, further accounted for and could be an important area for further study.

In literature on women's labor in Asian rice farming it is noted that women have a considerable manual input but would "benefit most directly when they have access to information about new technology and does control over household resources"(Unnevehr, 1983). Such ideals are not only limited to rice farming. Women and men working together in integrated aquaculture projects, with shared decision making and access to benefits, is an ideal that given the demographic and socio-cultural context of Cambodia, is likely to benefit the country's development.

Conclusion

Cambodian women play a definite role in all aspects of integrated aquaculture and have a wide range of other responsibilities within the household. In empowering men and women to be actively involved in integrated aquaculture, it is necessary to be aware of the gender values associated with integrated aquaculture and other cultural and educational systems of the country. This information has the potential to facilitate the tailoring of household and or FBT support and extension strategies to

promote men's and women's involvement in learning and / or teaching others about integrated aquaculture. This is also important to household management, resource-allocation and the decision-making process.

Given the high population of widows and the traditional responsibilities of women, finding active and culturally appropriate ways to promote women's involvement in integrated aquaculture is likely to enhance Cambodia's prospects for rural development.

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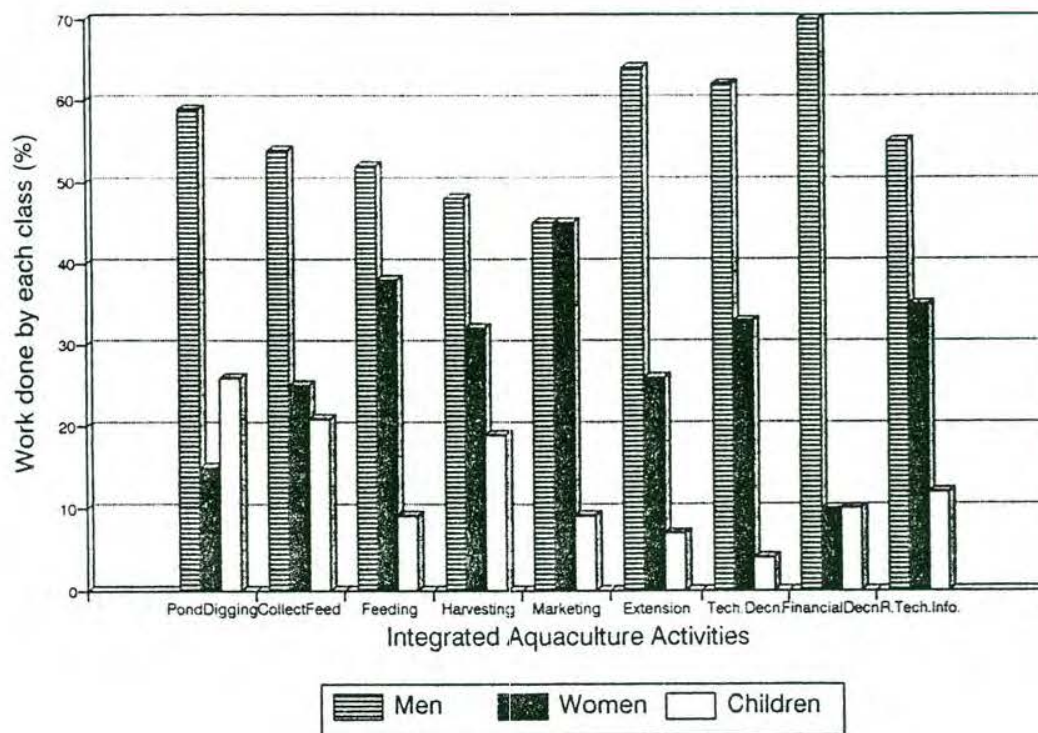


Figure 1. Labour distribution expressed as % of work done by each class

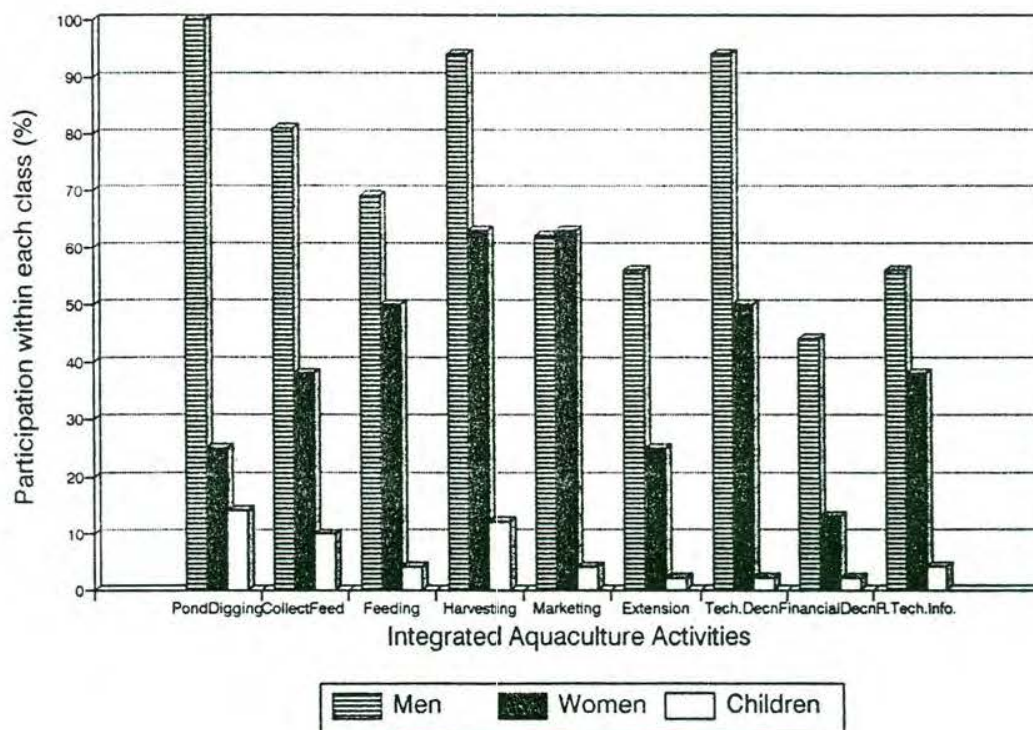


Figure 2. Participation in aquaculture expressed as % within each class

WOMEN ACTIVITIES IN FISHERIES IN SIEM REAP PROVINCE, CAMBODIA

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Abstract

In Cambodia, with nearly 65% of the adult population being women, they play a most important role in all spheres of social and economic life. Traditionally, in the Cambodian society, women play a central role in family maintenance and care of the children. Owing to long periods of war, the ratio of women headed families is very high. Because of poverty, women largely work in the labour sector to earn livelihood. In the fishery sector, women have been found to be active in fishing (32.59%), fishing lot operations, (27.27 - 28.57%), seine net operations, etc.. fish culture (37.31%), while in fish processing activities they are found to play a major role (82.35%), as in decision making (90%) and in fishery marketing (88.03 - 88.18%) activities.

Introduction

During the two decades of internal unrest and the Khmer Rouge regime about 1.5 to 2 million people are estimated to have died in Cambodia. As per the estimates, economically active population is estimated to be about 3 million and the ratio of females among the total adult population is estimated to be 64 percent (ECFA, 1992). Nearly half of the country's population is under 15 years of age.

The province of Siem Reap, located in the north western part of the country, has

been severely affected by war. Much of the infrastructure such as schools pagodas, temples, roads, etc. were destroyed during the war. Men were also killed resulting in a large number of women headed households. Women are considered equal to men by the constitution.

In the fishery sector, women contribute to all activities namely, fishing gear preparation, fishing, fish raising, fishery education and play a dominant role in fish processing and marketing.

Women activities in fisheries

Materials and Methods

According to a recent survey carried out by the Siem Reap Provincial Office of Fisheries (POF), women have been found to play an important role in many areas. The survey was conducted by collecting data from all the fishing villages located in 5 different districts bordering the Great Lake. Data was also collected from the large scale fishing units such as fishing lots, from medium scale fishing units such as gill net, seine net, drag net and from small scale or family fishing activity such as gill net, scoop net etc.

50 women in 4 different villages were interviewed about fish paste processing operation and their role in decision making process of the business.

Results

Fish production

The province of Siem Reap occupies the largest area of the Great Lake among the 6 bordering provinces. The fishing area is divided into 7 fishing lots, 1 fish sanctuary and a vast area of fishing domain protected for medium scale and subsistence fishing.

Fish production is very important for local consumption as well as for export. The total fish catch from this province between 1980 and 1994 varied between 3000 and 9700 tones/year. The lowest production was recorded during 1980 which was the year during which the activity was commenced after complete destruction of the resources by Khmer Rouge regime. (Table 1). Aquaculture is an important activity in the province and its contribution varied from 120 to 1200 tones during 1986 to 1994 (Table 2). The fishery business provides job opportunities for over 3,411 families living in and around the great lake (Table 3). In these fishermen community women form an important component and they are engaged in fishing gear preparation, fishing, fish raising and fish processing activities. Nearly 26.23% of all the existing fishing households are headed by women.

Women in Fisheries

According to latest statistics, in the Siem Reap Provincial Office of Fisheries there are 6 women from among the. Among those, two of them are educated in fishery and agriculture; one in accounting course and two other women have completed secondary school and one women has finished primary school. In regard to their responsibilities, 3

women head the sections (chief of administration, chief of exploitation and chief of planning and accounting section) representing 50% of the total 6 sections in the Provincial Office of Fisheries. At the district, commune and village levels, women were found to be nearly absent from the role of leadership,

Traditionally, women have played a major role in the preparation of food for the family while male members have earned income through the paid employment. This has resulted in women having relatively more free time to care the family and nurture the children. They play a very important role in the education of children. The family being closest to the children they first learn on all aspects of behavior and life from the mother. Women are also equally responsible for the entire activity of fish processing. In fact, children learn indirectly about fish processing techniques when they are growing at home and as they grow boys specialize in fishing, while girls continue fish processing.

Women who work as hired labor in fishing lot operations are generally single or widows with no children. Due to difficulties involved in taking care of children, they leave the children with their grand parents or relatives when they go to work. Those

women working in fishing lot are the poorest of the poor. This category constituted 32.59% of the total labor force engaged in fishing lot operations (Table 4). In Kompong Kheleang commune, Soth Nikum district, the largest floating commune of the province, women constituted 33.87% of the total labor force (Table 5). They are involved in fish raising (37.31%) and 70% in fish processing 26.31% of the total labor force involved in fishery activities. The percentage of women working in fish raising and fish processing is 37.50% and 41.66% respectively (Table 6.)

According to the interview conducted with women fish processors especially in fish paste processing, women were found to play a major role in decision making. They were responsible for the whole process of fish processing. They represented 82.35% of the total labor force engaged in fish processing.

In the area of fish transportation from the fishing areas to markets, women represented 88.18% of the total transporters. In various markets, 88.03% of women dealt with fish and fish by-products (Table 7)

In the field of conservation and management of the resources, all the women interviewed were found to be not aware of issues related to the area. Though they have

some idea on conservation for sustainable use of the resources, because of long period of war and poverty, they are compelled to find resources to the maximum for survival. Hence, they undertake illegal activities like fishing during the closed season, cutting of inundated forests for fuel wood, etc.

Conclusion

In the fishery sector, women have been found to play a major role in all fishery activities such as preparation of fishing gears (bamboo fences, nets etc.) fishing, fish culture raising, fish processing and fish marketing. In general, there were 3 categories of women involved in fishery activities:

- Women housewives who were responsible for keeping houses and manage the fishery business at home when their husband went out to catch fish to support the family. This groups of families were generally well-off, could educate their children and provide good opportunity for them to grow.

- Large scale fish processors could also take care of the children and educate their children similar to the first group. They were generally better off. They also take positions of power in fish processing and in decision making.

- Women laborers who work as hired labor in fishery business are generally poor. They have less opportunity to care for their children and provide them good education. They represent a major segment of women working in the fishery activities and it is wiser to help women belonging to this group. They spend more than 8 hours a day in water, work in fishing or fish processing sector.

As women are involved in all fishery activities, it is necessary to formulate policies which would help women. Women should be educated on the concepts of conservation and management. Fishery resources would be depleted if over-fishing or usage of destructive gears, are continued. To educate fishermen on these critical points, non-formal learning centers such as provision of floating library in each with information on resource conservation would be useful.

Acknowledgment

A special word of thanks is due to Mr. Touch Seang Tana of the Department of Fisheries for his valuable comments.

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Engineering Consulting Firms Association (ECFA/JDI). Report of the comprehensive study on reconstruction and development of Cambodia for medium and long term development, 1992.

Provincial Office of Fisheries. Annual report on fisheries 1993-94. Siem Reap Province, Cambodia, 1994.

Table 1. Total fish production and processed fish in Siem Reap (1980-94).

(Source: Provincial Office of Fisheries, Siem Reap, 1994).

Year	Total catch	Salted dried fish	Fish paste	Fermented fish	Smoked fish	Fish sauce	Dried shrimp (t)
1980	3000	350	150	-	21	-	-
1981	7919	949	92	-	3	60	-
1982	8266	1365	677	59	30	128	-
1983	8201	1096	488	180	36	95	-
1984	7932	780	618	142	36	90	-
1985	8500	880	700	132	51	40	-
1986	9041	943	906	91	116	41	-
1987	9575	1140	830	325	143	37	-
1988	8990	760	1048	381	120	59	-
1989	8200	1008	701	143	113	63	-
1990	9450	657	679	150	116	70	-
1991	9000	695	893	155	214	81	8
1992	9760	307	646	329	200	31	40
1993	8800	240	626	126	237	27	-
1994	7500	176	1046	746	151	53	14

Table 2. Aquaculture production in Siem Reap province 1984-94 (Source: POF Siem Reap, 1994)

Year	Table fish (Tons)	Fingerling (Head)
1984	471	
1985	120	
1986	150	
1987	373	
1988	168	
1989	1008	
1990	733	
1991	1200	
1992	1143	
1993	1110	
1994	620	10,000

Table 3. Number of families in fishing villages in different districts bordering the Great Lake with information on percentage of female headed households. (Siem Reap province, 1994).

No	Village	Commune	District	Total	Female	Male	%
1	Omal	Sambour	Kralanh	63	16	47	25.39
2	Damnak	Sambour	Kralanh	246	65	181	26.42
3	Anlong Sar	Sambour	Kralanh	55	18	37	32.72
4	Kok Kroch	Sambour	Kralanh	140	46	94	32.85
5	Po	Po Treay	Pouk	80	25	55	31.25
6	Treay	Po Treay	Pouk	70	15	55	21.42
6	Meehrey	Keo Poar	Pouk	104	18	86	17.30
8	Chong Khneas1	Chong Khneas	S.R. Town	201	92	109	45.77
9	Chong Khneas2	Chong Khneas	S.R. Town	246	65	181	26.42
10	Chong Khneas3	Chong Khneas	S.R. Town	137	32	135	23.35
11	Chong Khneas4	Chong Khneas	S.R. Town	136	64	72	47.05
12	Chong Khneas5	Chong Khneas	S.R. Town	101	64	37	63.36
13	Chong Khneas6	Chong Khneas	S.R. Town	70	24	46	34.28
14	Chong Khneas7	Chong Khneas	S.R. Town	75	74	01	98.66
15	Kok Khdol	Kg. Phloulk	Siem Reap	100	18	82	18.00
16	Thnot Kombot	Kg. Phloulk	Siem Reap	118	22	96	18.64
17	Dey Kraham	Kg. Phloulk	Siem Reap	118	18	100	15.25
18	Chey Chet	Kg. Khleang	Soth Nilum	72	19	53	26.38
19	Taour Sar	Kg. Khleang	Soth Nilum	133	25	108	18.79
20	Chamcar Yuon	Kg. Khleang	Soth Nilum	126	26	100	20.63
21	Spean Veng	Kg. Khleang	Soth Nilum	122	18	104	14.75
22	Muk Vat	Kg. Khleang	Soth Nilum	115	21	106	18.26
23	Phsa Khleang	Kg. Khleang	Soth Nilum	167	26	141	15.56
24	Prek Sramoach	Kg. Khleang	Soth Nilum	217	18	199	8.29
25	Ta Chranieng	Kg. Khleang	Soth Nilum	147	26	121	17.68
26	O Tapur	Kg. Khleang	Soth Nilum	132	15	117	11.36
27	Roteang	Kg. Khleang	Soth Nilum	80	15	65	18.75
28	Moat Khla	Kg. Khleang	Soth Nilum	40	10	30	25.00
	Total			3411	895	2558	26.23

Table 4. Total number of people engaged in fishing lot operations 1994.

No fishing lot	Total	Female	Male	Percentage
1	18	6	12	33.33
2	25	6	19	24.00
3	30	7	23	23.33
4	80	40	40	50.00
5	85	30	55	35.29
6	70	20	50	28.57
7	100	24	76	24.00
Total	408	133	275	32.59

Table 5. Total number of people engaged in medium and subsistence fishing in the commune on Kompong Khleang, Soth Nikum district, 1994.

No	Fishing gears	Number	Labors	Male	Female	Percentage
1	Seine net	5	55	40	15	27.27
2	Lop trap	80	240	240	0	0
3	Long lining	11	33	33	0	0
4	Gill net	520	1560	1050	510	32.69
5	Tree branches	200	400	200	200	50.00
6	Fish raising	135	402	252	150	37.31
7	Fish Processing	20	100	30	70	70.00
	Total		2790	1845	945	33.87

Table 6. Total work forces engaged in medium scale and subsistence fishing in the commune of Chong Khneas, Siem Reap town, 1994

No	Fishing gears	Number	Labors	Male	Female	Percentage
1	Seine net	10	280	200	80	28.57
2	Lop trap	35	140	100	40	28.57
3	Long lining	100	200	150	50	25
4	Gill net	15	45	40	5	11.11
5	Tree branches	20	40	25	15	37.50
6	Fish raising	20	60	35	25	40.66
7	Fish Processing	45	90	80	10	11.11
	Total		855	630	225	26.31

Table 7. Number of work forces dealing with fish transports from the Great Lake to markets and fish mongers in Siem Reap markets, 1994.

No	Means	Total	Male	Female	Percentage
1	Fish transports	127	15	112	88.18
2	Fish mongers	209	25	184	88.03

THE LOWER MEKONG BASIN FISHERIES AND GENDER ISSUES

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Introduction

The Lower Mekong Basin covers a total area of over 600,000 km² in four countries namely, Cambodia, Lao PDR, Thailand and Viet Nam. The Basin is rich in natural resources, especially water and agricultural lands, although some of the countries therein are currently ranked among the poorest countries in the world. Population in the Basin is approaching 53 million; more than 50% of this population consists of women. However, from the economic view point the majority of the people in the Basin are still very poor, i.e., with the per capita income being in the range of only US\$200 per year. Poverty problem is generally worse in rural areas of the Basin.

To solve the poverty problem, a large number of developmental projects aiming principally at an increase in cash income for the rural poor have been/are being carried out by the government departments concerned as well as other agencies, including the Secretariat of the Mekong Committee. However, not all the development projects which have been completed so far have been effective in settling the poverty problem and

therefore, the poverty problem remains largely unsolved.

Lack of "women's participation" planning and implementation of project is often quoted as a major reason for the poor end results obtained with some of the completed projects. As a result, topic on "women in development (WID) have become an important topic for discussion and recently, a more common term like "gender issues" is used owing to the fact that for many of the grassroots problems both "men" and "women" are equally important and should be actively involved to find solutions to those problems¹.

The Mekong Committee has been in operation for nearly 40 years since its establishment in 1957. Like in many other cases, women's participation in the Mekong development projects has been relatively limited. Many types (irrigation, agriculture, fisheries, etc.) of development projects have already been implemented by the Committee.

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The views expressed in this paper are of the author and do not necessarily reflect views of the Mekong Secretariat.

Its development efforts have also been shifted from subsistence economy in the early years towards improvement of the quality of life at the present and in this connection it is believed that as an efficient way towards the goal, "gender issues" are required to be addressed in as early as the planning stage of projects for the development of water and related resources in the Lower Mekong Basin and this is the main mandate of the organisation.

It was observed that in the four riparian countries of the Lower Mekong Basin, many organizations related to women have already been established at different levels with a common objective to promote women's economic productivity as well as strengthen their social and political status in societies. They are, for example, the Lao Women's Union, the National Commission on Women's Affairs of Thailand, the Vietnam Women's Union and lastly, but not the least, the Women's Association of Cambodia. Effectiveness of these organizations and their experiences need to be studied.

At the project level, the Mekong Secretariat is planning to carry out an important study on the subject with the major objectives, among others, to formulate a common strategy and corresponding guidelines to enhance the role of women specifically in water resources development and an action plan to implement the proposed strategy. Although scope of the study is limited it should be relevant also to discussions being made at the present Workshop and in particular, the discussions on planning and

managing development projects at field level. The study is expected to be funded by a donor country in the near future.

Apart from the above, mention should be made on some suggestions made by a preliminary study related to "gender issues" in the four riparian countries of the Lower Mekong Basin, undertaken in 1993 by the Secretariat. The suggestions, which were made on the basis of information obtained from field missions to the countries, could be considered as important factors that could help realizing effectively the development projects:-

- Necessity of involving all concerned (including women's organizations and women beneficiaries) in a dialogue at all stages of the "project cycle":
- Changing in the attitude (through sensitization on gender issues) of the policy-makers and planners; and
- Building the development plan(s) on realities of women's lives.

However, to promote effectively the role of women in the development processes, many more studies should be carried out by all concerned to ascertain their strength in different projects/activities and fields. The knowledge will be important for future project plannings or decision-making by policy-makers and/or planners. As a matter of fact, there is not any good blue-print at present for integrating women/gender issues in the planning processes.

Lastly, results of the present Workshop are expected to be useful not only to the participants of this workshop, but also to the Mekong Secretariat, as the discussions will focuss on women and the fisheries of Cambodia which is a member state of the Committee. It is expected further that a lot of information related to the national plan on these issues and in particular, the government policies on women at the "grassroots level" could be obtained. As a society where in women constitute the major part of the active labour force in the rural area, Cambodian experiences in this respect would be of great help in planning the activities.

ATTACHMENT 3

WOMEN IN CAMBODIA*

General

Cambodia is predominantly an agricultural based country with an area of 181,035 km². The population of 8.8 million is largely homogenous; over 90 % is ethnic Khmère and similarly, over 90 % of the population is Theravada Buddhists.¹ The important minority groups are Vietnamese, Chinese, Cham, Malay muslims and over 30 different highland ethnic minorities.² More than two-thirds of the population live in the Central Plains wherein the Tonle Sap Lake and the Mekong River are an important source for the life of the people..

The tragic events of 1970-1979 and the ongoing hostilities have left Kampuchea with 60 to 65 percent of adult women population and 30 to 35 percent of households are headed by women.³ The imbalanced ratio between men and women is causing polygamy where women have to share husbands with other women. Though polygamy is illegal but it is fairly widespread. Divorce and separation are legal, but are not accepted socially.

The constitution states that men and women are equal and that women should participate fully in the political, economic, cultural, social and

family life as equal to men. It guarantees that women will be liberated from family constraints and brought into development to enjoy equality before the law and in life. Socio-economic equality is ensured by the principle of equal pay for equal work.⁴ The situation is different in practice since there are no mechanisms to enforce the principles of equality stated in the constitution.

Agriculture and Fisheries

Agriculture dominates the Cambodian economy, accounting for nearly 45 percent of Gross Domestic Product (GDP) and 85 percent of the labour force. Rice is the predominant agricultural crop and food staple. Seventy percent of the animal protein consumed in Cambodia is provided by fisheries, half of its production comes from the Tonle Sap Great Lake. The country also produces and exports rubber, timber, beans, vegetables, and tobacco. It is estimated that the 1992 harvest from the logging concessions is four to five times more than the sustainable yield with regeneration and reforestation. The main imports are food, fuel, fertilizer, raw materials, equipment and spare parts.⁵

Family Planning

An increasing number of women and men would like to have smaller families for economic reasons but they do not know the methods. The government has no budget to provide services in family-planning to the citizen. The higher birthrate (40 births per 1,000 population in 1988) has major consequences on women's health and economic burden. It is generally estimated that the number of children per mother is five, and many women have between six to ten children.⁶

Education

During the Khmer Rouge regime (1975-78), formal education was abolished, and teaching materials, textbooks and publishing houses destroyed.⁷ Large number of qualified technicians, doctors, teachers and students either fled the country or died. Schools were closed with the exception of a few vocational training centers.

In 1988, the government attempted to improve the illiteracy among adult covering over 1 million people of 13-45 years of age and of which two-thirds were women. The Women's Association of Cambodia played an important role in mobilizing women to attend the literacy classes. The classes consisted of a six-month course of one-hour a day given by volunteer instructors.

Politics

Women are under-represented in politics and in decision-making of national importance. A

few women are ministers or similar ranks (the Minister of Industry, President of the Women's Association) and vice-ministers or similar ranks (Vice-Minister of Health and Vice Minister of Foreign Affairs). Eighteen women are members of the Council of the National Front for Defence and Edification of the Kampuchean Motherland. Twenty-one women (out of 117 seats) are members of the National Assembly. Of the estimated 10,000 Party members, only 528 of them are women.⁸ The main channel for women to participate in politics is the Women's Association of Cambodia. However, the Association has had little influence on national policies.

The Women's Association of Cambodia

In 1978, the Revolutionary Women's Association of Kampuchea (RWAK), a mass organization, was created at the same time as the Liberation Front.⁹ The organization became operational in 1979 when the country was liberated.

The organization's political objective is to explain government policies to women and to obtain their support and participation in implementing these policies. In May 1989, the RWAK's name was changed to the *Women's Association of Cambodia (WAC)*. The WAC is committed to promote equal rights, to encourage women to participate in all aspects of political, economic, social and cultural life of the country, to increase the educational level of women and to improve the welfare of women and children.

The WAC is the only governmental organization that has a fairly wide operational network down to the village level. The organization has a well-organized structure at all levels of the government's organs in urban and rural areas: 100 cadres at the central level, 10-15 at the province, 5-8 at the district, 3-4 at the sub-district, 2 at the village, 1 at the "solidarity group" in the countryside, or the neighbourhood level in towns. All women in the country whose ages are above 18 are supposed to be members (totalling some 1,800,00). At the central and provincial levels, the Association has 4 Departments: Administration, Organization (personnel), Propaganda and Education (i.e., political mobilization), Protection of the Interests of Mothers and Children (i.e., welfare). The central level has also a Department of External Relations and a Publishing House. In addition, each government office, enterprise, plantation, school and health center has WAC representatives who are in charge of mobilizing women who are employees of the government.

The WAC receives membership's fees (1 riel/ person). This constitutes a partial budget of the WAC. The government pays the salaries of cadres down to the sub-district level, at the same rates as for all other civil servants. The village and group staff are volunteers. The WAC has organized general training sessions for its cadres. However, the WAC suffers from a shortage of qualified and experienced personnels at all levels. Although it still lacks of funding and skills to effectively plan and implement projects, it is currently the only

active governmental body that extends to the village level.

References (2)

1. *Cambodia: Socio-Economic Situation and Immediate Needs*, Asian Development Bank, International Monetary Fund, United Nations Development Programme, and World Bank, May, 1992, p.7.
2. Han C.J. Blom, and Paul G. de Nooijer, *Focus on Higher Education and Vocational Training in Cambodia*, Report on a Nuffic Fact Finding Mission. The Netherlands Organization, NUFFIC, The Hague, February 1992, p.6.
3. Brigitte Sonnois, *Women in Cambodia: Overview of the Situation and Suggestions for Development Programmes*, Redd Barna-Cambodia, July, 1990, p.2.
4. *Ibid*, p.3.
5. *Cambodia: Socio-Economic Situation and Immediate Needs*, Asian Development Bank, International Monetary Fund, United Nations Development Programme, and World Bank, May, 1992, p.7.
6. Brigitte Sonnois, *op. cit.*, pp. 5-6.
7. *Cambodia*, *op. cit.*, p. i.
8. Judy Ledgerwood, *Women in Cambodia: Research on Women in Khmer Society*, UNICEF, Phnom Penh, June, 1992.
9. Brigitte Sonnois, *op. cit.*, pp. 43-58.

ATTACHMENT 4

GENDER ISSUES: FACTORS FOR EFFECTIVE PLANNING AND IMPLEMENTATION OF DEVELOPMENT PROJECTS*

Introduction

Women's perspectives are largely absent in development planning. Frequently, women are unintentionally overlooked because policy makers and planners are not aware that certain development policies and programmes affect women and men in fundamentally different and unequal ways. Women and children are usually regarded by planners as dependent of men, and planners assume that men are the main income earners in families. In reality however, both men and women, and sometimes women alone, are responsible for the survival of poor households. Women are concentrated in the lower ranks of the various target groups; often the benefits of policies and programmes geared toward the mainstream of society just do not reach women.

Women in the four riparian countries of the lower Mekong basin, namely, Cambodia, Lao PDR, Thailand and Vietnam, play an integral role in the countries' social, cultural, and economic development despite the many constraints they continue to face. At present, women in the Basin compose slightly more than half of the population as

well as at least half of the economically active population. Although the majority of women are the main labour force in agriculture, they are also active in commerce, communications and services, and in manufacturing industries but at the lowest income levels. As the economy in the area expands (also as a result of the so-called New Economic Mechanisms in the Lao PDR and Vietnam) and diversifies, the integration of women's contribution into national development processes and the assurance of their access to productive resources as well as to the benefit of their work remain pressing issues.

In the past, most agencies mandated to strengthen the role of women regarded women as mere housewives, responsible only for home-management activities: food preparation and preservation, household maintenance, health and sanitation. Not sufficient importance is given to the role of women in development of water resources, agricultural production, management and marketing. A similar situation was observed in the work of the Mekong Committee.

To improve the situation, a preliminary study was carried out by Dr Suteera Thomson, consultant, in early 1993, to formulate a detailed project proposal for studying *the role of women in development of water resources in the basin*. During the course of study, the consultant has made visits to all the four riparian countries and, gathered a lot of information on women in development and related gender issues in the countries.

Important observations and findings

The consultant has made a report saying that currently, women in the countries are still facing many difficulties. There were evidences showing that farm women did not have adequate access to information on and training in new technologies. Many of these technologies and tools could have benefitted women farmers a lot more if they were appropriately modified and made available. Instead, since most of the agencies involved did not consider women's work in farming, the *resources* needed by women were often directed to men. The exclusion of women farmers from agricultural development programmes has had and continues to have several detrimental effects. It retards agricultural productivity and prevents rural incomes from rising as fast as they would if both men and women were taught to improve farming methods. Moreover, it creates a growing gap in the earning power of men and women. As a result, women consider farming less and less worthwhile.

On the basis of the above, the consultant has raised many questions. For example

- How can we help women to see a future in the rural area?
- What can policy makers and planners learn from successful rural women?
- What are key factors that make rural women successful?
- What impact could these successful rural women have in bringing about a change in attitudes of planners and policy makers?
- What environment would be more conducive for dialogues between rural women and decision makers?

To the consultant, the above are questions that need to be addressed when working out a strategy and design of development activities.

Conclusion and recommendation

The consultant concluded that the four riparian countries have a lot of problems relating to the gender issues and in fact, many of the problems are common to all. The consultant thus recommended carrying out a more in-depth study and at an early date with a view to understand fully potentials of the women in the basin and their possible roles in participating in the development of its water resources. It is expected that as a result of the implementation, it will help promote the optimum use of the resources and the maximum benefits from the potentials of the women in development activities. Furthermore, the consultant

made the following suggestions and recommendations.

1 The strategy

One of the most important strategies that should be adopted is to engage top policy makers and planners involving in the development projects, project implementors/executors, national women's organizations and beneficiaries (the women themselves) in a dialogue. It is strongly believed that this process is fundamental to consider the actual and potential roles of rural women, i.e., to meet the women's needs effectively, enhance their productivity and ensure their access to development resources and benefits.

It was further pointed out that during the processes of project's implementation, the followings questions be clearly clarified:

- How can such diverse groups of people work together effectively?
- What strategies should be used to convince those involved of the benefits of mainstreaming women in the programme and project planning?
- How can we a broad consensus be created among key players in the project/program development?
- How can other policy makers and planners be involved in the process of broadening our base of support and commitment to strengthen the role of women in national development?

- How can agents be effectively used to reach key change agents in the village to maximize the impact of project implementation?
- How should we design our activities to reduce gender imbalances, to effect changes in societal attitudes and stereotypes, to raise awareness of all concerns on specific issues, to test some hypotheses, and to network among people?

It should be added that as an effort to study some of the questions mentioned above, at the start, the consultant consulted a number of people in each country concerning protocol, identified key change agents in each agency involved (at both the senior and the middle levels) and assessed attitudes towards women of top decision makers. It was found that most senior officers recognized that women work hard on the farm, in the field, and that their productivity is low. They would rather support women to be good housewives and domestic workers than to be good farmers. Thus, strategies need to be worked out in this respect to make the senior officers implementing the Mekong development projects adopted policies on gender and development.

2 The Approach

In implementing development projects, a *participatory process* should be adopted for the operations at all levels. These include project identification, setting priorities on activities,

formulation and implementation, monitoring and evaluation. Women should participate actively at all levels.

The *positive approach* should also be established through the use of successful cases. Attempts should be made to understand factors that contribute to the success, and how the problems or obstacles were/are being dealt with. These examples will provide a framework and directions for planners and will facilitate the learning of villagers with similar situations. Moreover, it will build-up the villagers'/women's confidence.

A number of gender-responsive skills is needed in handling different issues. Apart from the skills related to project's cycle, i.e., *project identification, formulation, implementation, monitoring, and evaluation*; additional skills are required for *problem-solving, consolidating ideas, consensus-building, establishing commitment, and broadening base of support*.

3 Key Planning and Implementation Issues

The integration of gender in policy development and programme planning is a complex undertaking which entails that policy makers and planners do consider women's roles and responsibilities in relation to those of men. Recognizing the impact of societal attitudes on the mainstreaming process, efforts should be made to

better understand how to deal with these attitudes effectively.

3.1 Data base building

A key to the success of mainstreaming women's concerns into water resources and rural development is an adequate data base at the macro and micro levels. This should include data from community profiles particularly on the gender division of labour, access to and control of resources, composition of household income and decision-making about household expenditures and investment. The data base should be improved and made available for policy formulation and for raising awareness of those involved. Attempts should be made to develop good case studies for training purposes.

3.2 Stereotypes

The most detrimental stereotype that policy-makers and planners hold about rural women is that women are best suited for domestic roles and less productive than men in non-domestic activities. Stereotypes cause psychological barriers. Thus, planners and policy-makers did not give sufficient importance to the role of women in rural development, e.g., in the development of water resources, agricultural production, management and marketing. Women who actually believe in the stereotypes will undermine their own development and potentials. These stereotypes must be changed

before we can see significant improvement in rural women.

3.3 Constraints and problems

The most crucial constraints and problems encountered in planning and implementing agricultural, fisheries and rural development programmes and projects are *societal attitudes*. There is no ready-made solution for dealing with societal attitudes. *But it is believed that a proper sensitization on gender issues would help the policy-makers and planners to recognize their biases and find ways to overcome them.*

3.4 Mechanism and strategies

To assist rural women effectively, the most successful planning and implementation mechanism and strategies is to base plans on the realities of women's lives, not simply on the assumptions and generalizations. Planners should use gender-differentiated conceptual framework to acquire and analyze socio-economic data for planning purposes.

Attention should also be given to assessing rural women's needs; conducting effective training programmes for planners and project staff; improving community profile data; providing practical training and increasing opportunities for involvement of the women. Attempts should be made to harness the women's capabilities, motivation and resourcefulness in planning and improving their own lives.

ATTACHMENT 2

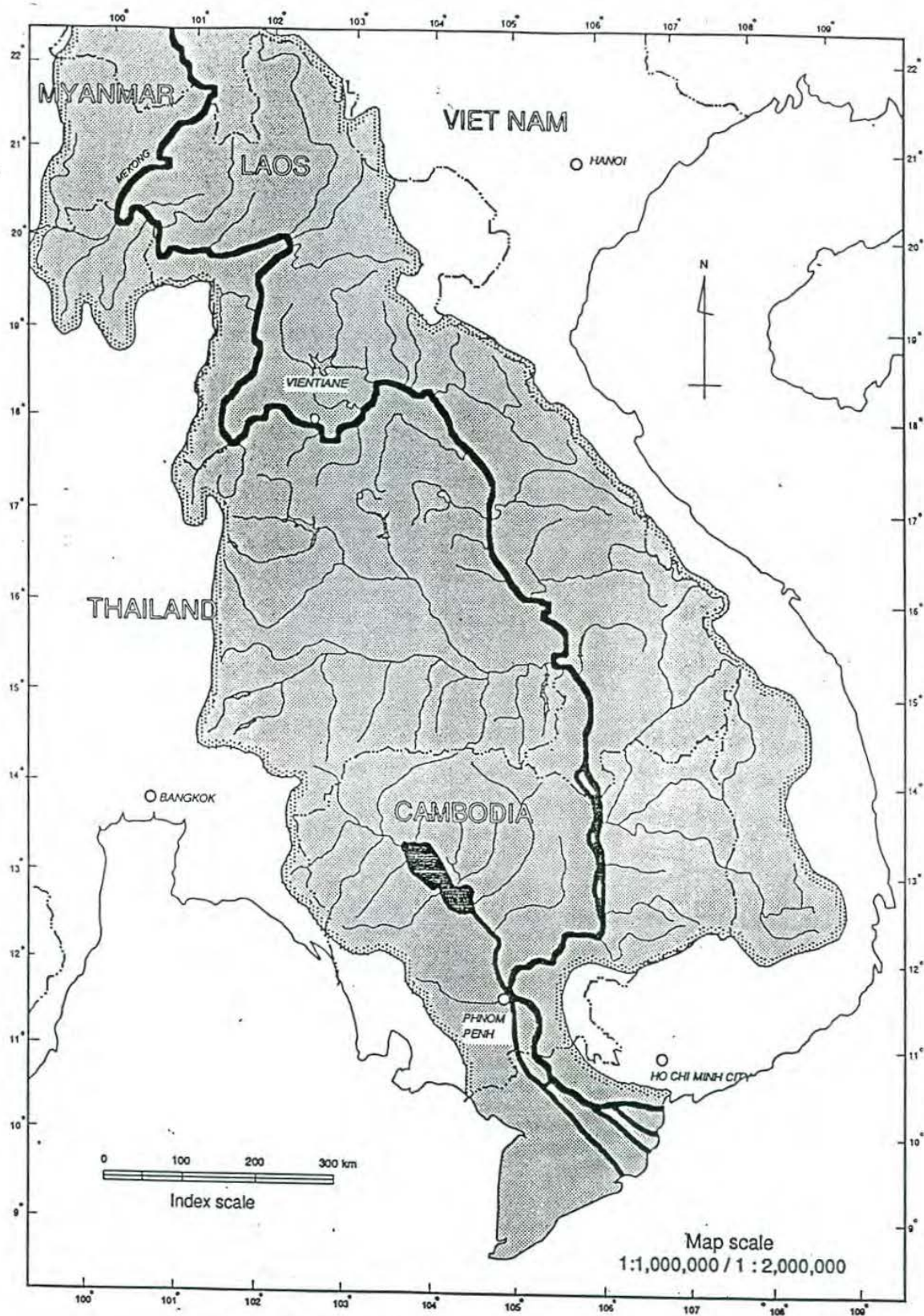
BASIC DATA ON POPULATION AND PER CAPITA INCOME,

THE LOWER MEKONG BASIN (1990)

	Population (million)		Per capita GNP (US\$)		GNP of Country million US\$	GNP of Basin million US\$	Shared GNP of Basin %
Cambodia	8.5	7.8	190	200	1615.0	1564	96.8
Lao PDR	4.2	9.9	170	180	714.0	704	98.7
Thailand	56	22.2	1420	568	79520.0	12624	15.9
Viet Nam	68	15.9	202	220	19796.0	9967.5	24.5
Total	196.7	49.3			95585.0	18260	19.1
Average			699	371			

Source:

1. National transport study for the Lao, PDR, SWECO, April 1990
2. United Nations year book
3. Gross regional and provincial product, NESDB, July 1989.
4. ADB report, October 1992
5. Mekong's socio-economic database
6. IBRD world development report 1992, d 219
7. General statistical office, Hanoi, 1992, p. 69.



LOWER MEKONG BASIN
Scale 1:1,000,000

WOMEN IN CAMBODIAN FISHERIES - A FEMININE PERSPECTIVE

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Abstract

In Cambodia, fisheries is an important component both in the diet of the people as well as economy. Most families depend on fish for daily food needs. Though aquaculture is a relatively new activity in Cambodia, fishing and fish processing is as old as Cambodian history. Cambodia with rich aquatic resources once enjoyed the status of maximum fish availability for the consumption. Probably, owing to the large scale availability during a short period of time during the fishing season, traditional methods of processing have evolved to save the fish from spoilage for its use in the off season. Women actively participate in capture fisheries, processing and aquaculture. In capture fisheries while pre-fishing responsibilities remain with women, men undertake the actual fishing. Sometimes women also assist in actual fishing. After harvest of the fish women undertake the major responsibility of processing the fish into different products. In processing large majority of the activities are carried by women. Aquaculture, particularly culture of fish in cages is also partly assisted by women. Feeding of fish remains with women. Catching small fish for feeding fish is undertaken by them. In general, it was clear that women are an important force in all sectors examined and they deserve special support.

Introduction

With a view to understand the contribution of women to various sectors of fisheries in Cambodia, a preliminary study was undertaken to quantify the contribution of women. Three systems namely, fishing, fish processing, and marketing in aquaculture were identified as

the main systems in fisheries. In Cambodia, aquaculture contributes only about 10% of the total production of about 100,000 tones while much of the fish is consumed fresh appreciable amount of fish is processed into various traditional products.

Methods

Discussions were held with the owners of the units like fishing, processing and aquaculture were met and requested to identify various steps involved in each of the activity and contribution of both men and women.

Results

The results obtained from fishing, processing and aquaculture are presented separately in the Tables 1-3. In all activities, both men and women are involved, but in some cases like fishing though women play major role.

Discussion

Gender awareness is urgently needed to make awareness about the role played by women

VARIOUS STEPS	TASKS DONE BY WOMEN	TASKS DONE BY MEN
Initiative	- discuss with husband	- discuss with wife
Buying fishing equipment	- bargain the price of fishing net	
Pre-fishing activities	- make fishing net be ready to use - prepare food, basket, plastic sheet fishing net, etc. - repair fishing net when it is torn	
Fishing		- catch fish with fishing net - may stay at the lake at night - look after the fishing net (prevent form stealing)
Fish selling / Marketing	- know market price and adapt the price to the market	
Budget maintenance	- keep money & take care of family expenses	
Making decision in spending money	- make decision in spending on food, especially small expenses - discuss with husband for expenses related to high-cost items.	- discuss with wife when planning to buy high-cost items.

The table above shows that women are involved in all supporting activities of capture fishery. All this involvement is usually ignored and assumed that capture fishery is carried out by only men..

Activities: Fishing (use fishing net)
Place: Beung Bassac village, Sambour Meas commune, Kompong Cham town, Kampong Cham Province.
Interviewer: Sophea. Nhohn
Interviewees: Ms. Sok Hen (38) and Mr. Kon Then (49)
Date of interview: 30/09/1994

Role of women in fish processing (Fish paste production)

VARIOUS STEPS	TASKS DONE BY WOMEN	TASKS DONE BY MEN
Pre-process	<ul style="list-style-type: none"> - looking for budget, if no budget - buy jars and salt 	
Transport		<ul style="list-style-type: none"> - transport fish by boat to the place
Lifting		<ul style="list-style-type: none"> - lifting fish from boat to the fish piles - lifting polished fish home
Dressing fish	<ul style="list-style-type: none"> - cut fish (always women) 	
Pressing		<ul style="list-style-type: none"> - Polish/press fish by hand for small quantity of fish - by machine for big quantity
Fish preservation	<ul style="list-style-type: none"> - expose pressed fish to the wind for one night - salt fish - expose salted fish to be dripped and make it hard - salting - stuff salted fish in the jars 	
Maintenance	<ul style="list-style-type: none"> - when salt water on the top evaporates, add salted water - maintain fish paste with salted water on the top 	
Marketing	<ul style="list-style-type: none"> - looking for good price for both buying salt and jars and selling fish paste - sell fish paste in whole sale at home - sell fish paste in retail in the market 	
Making decision in spending money	<ul style="list-style-type: none"> - pay the debt - decide to spend on food, clothes and low-cost items - discuss with husband in spending on high-cost items 	<ul style="list-style-type: none"> - discuss with wife in spending on costly items

The table above shows that women are involved in almost all the process of fish paste production. According to my experience, they are also involved in the entire process of other fish preservation activities such as smoked fish production, salted fish, etc.

Activities: Fish paste production
 Place: Russey Keo district, Phnom Penh Municipality
 Interviewer: Sophea. Nhohn
 Interviewees: Nos Rorkies (39), Math Slai Man (41)
 Date of interview: 13/10/1994

Role of women in aquaculture (Fish raising in floating - bamboo cages)

VARIOUS STEPS	TASKS DONE BY WOMEN	TASKS DONE BY MEN
Pre-process	<ul style="list-style-type: none"> - preparing budget to buy fingerlings 1500 fingerlings costs 225,000 riels - discuss with her husband on fish culture plans 	<ul style="list-style-type: none"> - discuss with his wife on fish culture plans (activities are started from July and completed in March)
Prepare materials	<ul style="list-style-type: none"> - helping her husband to make cages and seeking small fish for fish feed - during nine months, she bought only 1.950 kg of small fish for feeding. It costs 975,000 riels 	<ul style="list-style-type: none"> - making cages -buying materials especially fishing net for finding small fish to feed the fish - buy fingerlings from the markets or from other villages.
Skill	<ul style="list-style-type: none"> - prepare feed, feeding, looking after fish every day 	<ul style="list-style-type: none"> - seeking for small fish from river or lakes or sometimes bought it from markets
Selling	<ul style="list-style-type: none"> - decide to sell fish at home, sometimes sell in markets 	<ul style="list-style-type: none"> - help his wife to sell fish in markets
Income	<ul style="list-style-type: none"> - account maintenance 	
Spending	<ul style="list-style-type: none"> - buy food, clothes, medicines, materials for children going to school, festival, wedding, and other expenses. 	<ul style="list-style-type: none"> - keeping some money to buy fingerlings and equipment's for reproduction.

Activities: Fish raising (in bamboo cages which float in the river)
 Place: Prek Khmeng village, Prek Khmeng commune,
 Lovea Em district, Kandal Province
 Interviewer: Ma Kol Chenda
 Interviewees: Ms. York Vanna (28), Mr, Chreng Soeun (33)
 Date of interview: 15/10/1994

ROLE OF WOMEN IN FISHERIES IN BATTAMBANG PROVINCE

NOUN BONA AND MR. ITH SOPHAL
CARERE, Battambang Province

Introduction

Battambang Province has been deriving majority of its requirement for fresh and processed fish from the Tonle Sap fishing zone. However, there is evidence that there has been a decline in catches of fish from this area especially for Grade I fish (snakehead, catfish etc.). Battambang Province has also experienced an increase in the human population both from the natural increases within the area and due to the return of people from the Thai border. This has led to an increase in the number of people attempting to raise fish in ponds both for domestic use and for marketing purpose. Many of these attempts have fallen short of expectations due to lack of technical knowledge and the reliance on the Thai border for supply of fingerlings and fish feed which often render the operation uneconomical.

Carere is working in all districts of Battambang Province in different areas of activities. Ek Phnom district is one of the target

areas of Carere work and is one of the lowest areas in Battambang Province. (close to the Tonle Sap Lake zone). The area is prone to flooding annually. In this area, people have small areas of land for agriculture and after the rice harvest they usually grow vegetables to increase the family income. However, they find it hard to find a market to sell their vegetable production and the market price of vegetables is usually low. The living conditions of these people are very hard especially for women who have a greater responsibility in family maintenance. As part of development effort, people are encouraged to culture fish to add to their agricultural production and improve their living condition. For example, more than 100 families in Ek Phnom district have dug ponds for raising fish and for watering vegetable gardens. Each family dug one pond with the dimensions of approximately 10 x 8 x 3 meters. After completion of digging ponds, water was pumped in from the Sangke River and fish species like common carp, silver carp and silver barb, sand goby, common climbing perch,

walking cat fish and swamp eel. Approximately 1-10 kg of these fish were put in to each pond with the assumption that they might start to reproduce and increase in their number. At the time of raising these fish, vegetables were also grown (such as cabbage, morning glory, corn and cassava) for use as fish feed. After 8-10 months, the fish were harvested. However, fish production was not good and much time and effort was wasted. This was because fish were raised with little technical knowledge with regard to feed, stocking density, pond management etc.

The role of women

In the above work, we have noticed that women have an important role in fish culture activity. For example:

- ♦ Approximately 50 % of the pond digging activity was carried out by women in poor families, widows and women whose husbands were handicapped.
- ♦ Approximately 50 % of the collection of fry or fingerlings was done by women who were head of families.
- ♦ Approximately 80 % of the work related to fish seed care of the fish was done by women.
- ♦ Approximately 90 % of the marketing was done by women (transportation and selling in the market).
- ♦ Additionally, approximately 95 % of the activities related to processing of fish is done by women :

- smoking
- drying
- making fish paste
- making fermented fish

These are methods of preserving fish for extended periods.

Women also have many other responsibilities, for example :-

- ♦ housework
- ♦ taking care of children
- ♦ working in fields
- ♦ managing family economics

From our experiences and observations, it is no surprise that women are often over-worked. Due to lack of technical knowledge in agriculture and aquaculture, women often spend much time in these activities without gaining much economic benefit. The type of technical knowledge extended is also another area that needs improvement. The technology should be simple and easily understandable by the community. The formation of women's groups for raising fish, will also assist women to improve their fish production and marketing and provide an opportunity for cooperation and exchange of ideas. Credit schemes could also help by providing money to purchase fingerlings or better quality food. Government departments such as Agriculture and Fisheries could also assist by providing technical advice and fingerlings.

STATUS OF WOMEN IN THE FISHERIES DEPARTMENT

KEO SOVANNARY

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Abstract

The results of the survey indicate that women have a fair position within the DOF with good opportunities for training and promotion. However, it is felt that these results are probably biased due to the research methodology (and the assumptions on which it is based) leading to misleading responses made to the questionnaire. Further it would appear that women within the DOF are strongly influenced by the same cultural/traditional influences which not only deter them from working, but also influence of cultural and traditional influences need to be investigated if action can be taken to improve the status of women within the DOF in the future.

Introduction

The Department of Fisheries (DOF) is under the ministry of Agriculture, Forestry and Fisheries and is situated in Phnom Penh. There are by provincial fisheries offices in the 12 main fish producing provinces. However, the personnel working within the DOF are considered as central department staff. Personnel working in the Provincial Fisheries Officers are paid employees of the provincial offices.

The DOF manages both fresh water and marine capture and aquaculture/

mariculture fisheries (in the Kingdom of Cambodia). A total of 504 people work for the DOF (in Phnom Penh), one hundred and twenty of which are women (23.8%).

Methodology

After discussion, it was decided that research was necessary to discover, the ratio of women to men the opportunities for women and the problems faced by women, working in the DOF. A questionnaire was developed. The questionnaire was filled in

during confidential semi-formal interviews on a one-to one basis. A total of 32 women were interviewed. These were randomly selected although the selection will have been biased since a) only those women attending work were interviewed (¹on an average only 66% of women personnel registered as working for the DOF actually turn up to work everyday) and b) those women working for the Fishery Company (a commercial arm of the DOF concerned with selling fish) were too busy to be interviewed. The qualitative and quantitative results were then analyzed by comparing the answers in the questionnaires against each other and from other information obtained from the DOF. Especially various data from the four groups of women working within the DOF (i.e. senior and junior officers and skilled and unskilled support staff) were compared against each other.

Results

Qualifications

There are two M.Sc's within the DOF; these are held by men.

There are 87 personnel holding a B.Sc qualification (from the RUA or other

universities) within the DOF; 26 of these are women (30%).

There are 101 personnel holding a diploma qualification (from Prek Leap or other colleges) within the DOF; 29 of these are women (29%).

Fisheries agents are those who have attended colleges like in Prek Leap and completed a two year course. There are 31 fisheries agents working within the DOF; 5 of these are women (16%).

Skilled workers are defined as having one year training or are competent in a certain area; for example an electrician. There are 2 skilled workers working within the DOF - both are men.

There are 281 unskilled workers working for the DOF. (These are [people who do not have any qualification, although contrary to their title cover the major administrative responsibilities within the DOF). There are sixty women defined as unskilled workers (21%).

Age of women

There are no women under the age of 20 working in the DOF. This is because the DOF is only employing women with a degree. All the women unskilled workers present in the department were employed

¹ Initial findings of a study presently being conducted within the DOF.

immediately after the Pol Pot regime and at present, no unskilled workers are employed.

Position and influence of a high ranking officer within family

From the results, there are more women in the higher levels of management than the lower. However, this may be associated with those women having a high ranking officer as a member of their family.

Housing

Most women live within Phnom Penh within 3 kilometers from the office. This is associated with the view that the low expenditure would be required for transportation (ranked as approximately 7 on the list of expenditure) for transportation if stayed close to office.

Service in DOF, Numbers of working hours, training opportunities and Household jobs

From the result it would appear that women have a very good position in the DOF. Most women who have done long service are high up in the management position, they work a full day, but also manage to find time to do their expected

household duties at home. This will be discussed further in the conclusion.

Discussion

It is felt that cultural, traditional and social pressures have strongly influenced the the respondents answered the questionnaires and the actually feelings of the respondents to some of the questions.

First the influence of parents (and especially mothers and mother-in-law) cannot be under-emphasized as a strong influence on women who have to conduct their 'womanly duties as first priority and in a competent way. "This is further exacerbated by potential and actual husbands. No real respect is given to a women who is career minded or is totally professionally dedicated.

Further, there is a strong feeling that women are not interested in or indeed have the capacity to fulfil a responsible, full-time job. Further, it is thought that women to not have the capacity to be "powerful", to gain o respect or have professional influence In the work place.

Conclusion

From the results, it would appear that women have a good position in the DOF with relatively good training opportunities and opportunities for promotion. However, from working within the DOF, it would appear that these results are biased. Secondly, this was probably due to the interviewees wanting to appear as good

Cambodian women who undertake their sex assigned household duties. Also they probably did not want to take the risk that their immediate line of managers would find out the true nature of their work and feelings towards it. A further thorough investigation needs to take place to investigate the status of women in the DOF further.

		Manager/heads	Officer		Support staff	
			Senior	Junior	Skilled	Unskilled
Age	< 20	0	0	0	0	0
	20 - 30	0	10	7	4	2
	31 - 40	0	2	2	1	0
	> 40	0	3	0	1	0
Family mem	Infant	0	10	4	4	0
	< 15	0	11	10	1	4
	16 - 60	0	40	36	15	10
	> 60	0	3	3	1	0
High ranking officer within family		0	8	4	0	1
Housing	Within PP	0	14	9	5	4
	Outside PP	0	1	0	2	1
	Own House	0	12	6	1	1
	With relative	0	3	3	3	1
	Rented House	0	0	0	0	0
	Other	0	0	0	0	0
Distance of house from work	1 - 3 km	0	10	4	4	3
	4 - 6 km	0	4	5	2	0
	7 - 10 km	0	1	0	0	0
Service in DOF (yrs)	< 5 yr	0	9	8	4	2
	5 - 10 Yr	0	2	0	1	0
	> 10 Yr	0	4	0	1	0
Number of Hours in work/day	< 3 hrs	0	0	0	0	0
	3 - 6 Hrs	0	5	1	2	0
	> 6 Hrs	0	8	8	4	2
Household	cook food	0	13	6	5	2
Jobs (defined at more than 5 hrs/day	wash clothes	0	12	9	5	2
	clean house	0	12	6	4	2
	go to market	00	6	7	3	1
	wash dishes	0	10	6	5	1
	carry water	00	2	0	5	0
	take children to school	0	1	0	1	0

		Manager/ heads	Officer		Support staff	
			Senior	Junior	Skilled	Unskilled
Training opportunity	Seminar/ workshop	0	1	2	1	0
	Short-course	0	8	7	2	0
(in country)	Degree	0	0	0	0	0
Training opportunity (out country)	Seminar/ workshop	0	1	0	0	0
	short course	0	0	1	0	0
	Degree	0	0	0	0	0
Read, write speak English (in Work)	No	0	11	7	4	1
	Occasionally	0	2	1	2	1
	Frequently	0	2	0	1	0
	Always	0	1	1	1	0
Type: Khmer (in work)	No	0	6	8	1	1
	Occasionally	0	4	0	2	1
	Frequently	0	2	0	1	0
	Always	0	3	0	3	0
Type: English (in work)	No	0	11	7	5	1
	Occasionally	0	2	1	1	0
	Frequently	0	1	1	0	1
	Always	0	0	0	0	0
Salary	20000 - 29000	0	1	0	3	0
	30000 - 39000	0	8	9	2	2
	40000 - 50000	0	6	1	1	1
Other sources of income		0	5	0	1	0
Monthly expenses (ranked in order of Importance)	food	0	1	1	1	1
	water	0	7	7	5/7	6/7
	power	0	3	3	2	6/7
	transport	0	6	6	5/7	5
	medicine	0	2	2	3	3
	school-fees	0	5	5	5/7	2
	clothes	0	4	4	4	4
	others	0	0	0	0	0

WOMEN IN FRESH FISH MARKETING IN PHNOM PENH CITY

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Introduction

The capital city Phnom Penh has a population of over one million and this population is growing rapidly with large migrations from various provinces to the capital city. Fish being the common diet of the people there is great demand for fish in the capital city. Hence, fish from various parts of the country are supplied to this capital city to meet the growing demand. Much of the city supply comes from the Great lake.

There are three important fish landing places in the city and two of these landing sites are river based another is a land based site. From these landing sites, fish are not only supplied for consumption within city, but also to several fish deficit provinces like Svay Rieng, Prey Veng, Kompong Speu, Takeo, Kompot, Kompong Som and Koh Kong apart from exporting fish to Thailand and Vietnam. At the Svay Park landing site, altogether 5000-6000 tones of fish is landed

annually and most of it arrives from the Great lake region. Fish is landed at 5-10 tones/day during the period from December to August. The second important landing place in Chbar Ampov wherein about 500 tones of fish is landed annually. The land based fish landing site is Phsar Tuoch and it receives annually about 400-500 tones/year. The landing could vary from 0.5-1 tone/day in wet season and to about 20 tones/day in dry season

Total fresh fish supply to Phnom Penh city was estimated at 9,000-10,500 tones/year during 1991 including some small quantity supplied from various flood plain areas around the city during early cold season and the bag net fishing (dai). Recently catches are also coming from Stung Treng province meant largely for export. Though much of the fish arrives at Phnom Penh, it is not entirely consumed by urban people. About 10% of the supply is dispatched to

fish scarce provinces and about 20 - 40% of the fish is exported to Thai and Vietnamese markets. However, fresh fish needs of the city is high and there are nearly eighteen market places in the city which are catering the needs of consumers. Fish marketing being women dominated activity, it provides employment opportunity for many women in the city.

In this paper a preliminary effort has been made to understand the existing marketing situation, and understand the constraints faced by women and examine the ways to solve those problems.

Methodology

Ten fresh fish market places were selected for conducting this survey. These selected fresh fish market places were: Phsar Thmey, Phsar Chas, Phsar Doeum Kor, Phsar Doeum Thkev, Phsar Depo, Phsar Sileb, Phsar Pet Chen, Phsar Boeung Keng Kaang, Phsar Chbar Ampov, Phsar Tuol Tumpung.

Results

There are three different types of fresh fish retailers in the city

-Large scale retailer : Fish is kept for selling on a large iron bin or basket. Additional bins are also used to keep fish alive and sell throughout the day.

-Middle scale retailer : Fish is exposed for selling on a large iron bin or basket. No extra fish stock but some time have fish for sale for the whole day.

-Small scale retailer : Fish are sold by keeping them in small basket. Usually business is carried out in the morning.

From the table 1 presented, it is clear that women were actively involved in all types of retail sale, but they were more dominant in middle scale (91%) and large scale (100%) trading.

Fresh fish retailer interviews

Forty women were selected from the above types of fish traders and were interviewed to obtain information on various aspects. The people came from 8 Large scale retailers (Group1), 20 middle scale retailers (Group2) and 12 small scale retailers (Group3).

Most of the women in group two and three had more than one year experience in

the business. Considerable percentage of the population has been involved in business for more than 5 years. This indicates that women have been steady in this business owing to the fact that they were able to gain reasonable amount of profits. Most of the women in Group 1 and 2 were in business on a regular basis for a long time. Though the business among the Group 3 people was carried out independently, Group 1 had always partners. Among group 2 also, majority of them had partners. In regard to fish supply situation, while group one had no problem, group 2 and 3 expressed the opinion of displeasure that there is no assured supply of fish and hence, some time they faced the problem in earning livelihood to meet the family needs. This problem was more acute with those involved with small scale retailers.

There were also few questions in regard to the trade practices and table 2 provides a summary of the answers received from women.

All the retailers were anxious to find the best source of supply from where they could get the quality fish at cheaper rate with less competition. It was found that all retailers in Group1 and about 65% in Group2 were interested in product

diversification. None in Group 3 was interested in product diversification and technology improvement.

Conclusion

Many problems encountered by the women involved in fish marketing were noticed during this preliminary survey. The main problems were assured fish supply and capital to carry out the business. While large scale retail traders were more assured of profit, small scale traders faced the problem of obtaining adequate profits to make good living. Informal discussion held with these retail traders highlight the problems involved in fish procurement, transportation to the marketing place and withstanding the poor marketing facilities and inconvenience caused by the market authorities. Based on this preliminary investigation, it is suggested that to meet the shortage of fish supply, it is necessary to promote aquaculture on a commercial scale to ensure higher availability of fish on a regular basis. Further, market authorities should provide adequate facilities in terms of creating hygienic place and good environment for marketing of the product. Organization of cooperative structure to reduce cost in transportation and ensure assured supply of

fish would be good ideas for experimenting. Department of Fisheries should take active role in finding solutions to some of the problems faced by these fisherwomen in the marketing sector

The Phnom Penh city with a population of over one million is expanding rapidly. Fish being the main diet of the people, there is increasing demand for fish in this city and to meet this demand fish are transported from various provinces. It is reported that annually about 10,000 tones of fish is brought to this city and among this substantial quantity of fish is exported to Vietnam and Thailand. About 5000 - 6000 tones is estimated to have been consumed by the city dwellers. There are several retail fish

marketing centers in the city and these retailers meet the fish needs of the people. A preliminary survey was conducted to understand the problems faced by these retail traders in ten different markets. Unassured supply of fish, poor market hygiene, transportation of fish from whole sale center to retail center, uncooperative attitude of the marketing authorities were noticed as the major constraints. Among the three levels of retail traders noticed, large and middle scale retailers faced less problems, while small scale traders faced many problems and their living conditions was found to be poor. It is suggested strategies are made to solve these women problems and they should be assisted to overcome the difficulties and improve their business.

Table 1. Number of retailer of different scale of the selected fresh fish market

Market place	Large scale			Middle scale			Small scale		
	M		F	M		F	M		F
Phsar Thmey	3	(12)	18		(21)	21		(9)	9
Phsar Chas	7	(15)	21	2	(20)	18		(22)	22
Phsar Doeum Kor	6	(22)	30		(26)	26		(28)	28
Phsar Doeum Thkov	2	(11)	15	1	(28)	27		(25)	25
Phsar Depo	4	(14)	20		(18)	18		(16)	16
Phsar Sileb	1	(6)	8		(5)	5		(4)	4
Phsar Pet Chen	2	(5)	6	1	(8)	7		(6)	6
Phsar Boeung KengKang	3	(10)	14	2	(12)	10		(12)	12
Phsar Chbar Ampov	11	(25)	32	3	(21)	18		(26)	26
Phsar Tuol Tumpung	2	(14)	14	2	(15)	13		(11)	11
Total	41	(134)	178	11	(174)	163		(159)	159

Note: Figure in the parenthesis indicates the total number of people involved in the business

Table 2. Difficulties encountered by women involved in the retail trade.

	Group1	Group2	Group3
More competition	9	7	12
Inadequate fish		11	12
Lack of transport		5	12
Increasing price of fish	9	20	12
High transportation cost	9	11	
Increased bargaining	5	14	12
Poor profit		10	12
Moderate profit	5	6	
Good profit	4	4	

A STUDY OF THE ROLES AND RESPONSIBILITIES OF CAMBODIAN WOMEN AND CHILDREN IN SMALL-SCALE AQUACULTURE.

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Abstract

This paper draws on data collected from a sample of subsistence farming families attempting fish culture for the first time, under the AIT/DOF small-scale aquaculture research project in Svay Rieng District, Cambodia. Family members from a total of 10 male and 10 female headed households were interviewed, in order to assess the roles and responsibilities that women and children had adopted as a result of the family taking up aquaculture.

Introduction

Contrary to the impressive traditional fish culture systems of Snakeheads and Catfish, the small-scale aquaculture of carps and tilapias in Cambodia is undeveloped. The AIT/DOF¹ collaborative field research project in Svay Rieng Province is exploring small-scale aquaculture development issues, to better understand constraints and opportunities

open to resource poor farmers in the area. Although no traditional fish culture systems exist in Svay Rieng, aside from a small number of farmers who culture Pangasius, the trapping of wild fish in small ponds is common throughout the area, particularly in the wake of the FFP² pond digging programme. It is anticipated that as wild stocks of fish decline through increasing human population and environmental pressure, the scope for

¹ The Asian Institute of Technology Aquaculture Outreach Programme and the Cambodian Department of Fisheries.

² Family Food Production Programme

small scale fish culture to become an accepted part of the farming system will increase. The ways in which farm families make the transition from wild fish trappers to fish farmers and the effects on family labour; decision making and resource control are the main themes explored by this paper.

Methodology

The survey used for this study was designed, implemented and analysed by two female DOF staff. Women and children from a total of 10 male and 10 female headed households in 8 villages of Svay Chrum District who were culturing fish under the guidance of the AIT/DOF small scale fish culture project, were interviewed through an open questionnaire. These interviews sought to establish the levels of women and children's participation in aquaculture and the degree of decision making power the women were able to command. The largely qualitative data collected was entered into a computer spreadsheet for simple analysis. Data relating to family demographics, labour divisions, decision making and fish production and control of the catch, have been divided into two

groups for comparative analysis, (female headed and male headed households).

Background Information on Svay Rieng Province.³

Svay Rieng occupies a territory covering 2,966 sq. km. in the SE corner of Cambodia. It is bordered by Prey Veng Province to the north and west and by Vietnam to the south and east. The Province is divided into 7 districts, 80 communes and 690 villages. Politically stable since 1979, the population has increased steadily from 292,000 in 1981 to the current level of 418,080 of which 218,348, (52.2%) are female, giving a population density in the Province of 141 persons per sq. km. Agriculture, particularly rice production remains the primary subsistence activity. Average wet season rice yields are often below one tonne per hectare and soils are generally poor. There are few opportunities for earning cash from on farm activities outside of pig raising, sugar cane and sugar palm production. It is estimated that forest cover has declined from 41,000 ha, (14% of total land area) in 1966 to 24,500 ha, (8%) in 1993, (CIDSE 1993). There are thought to be a total of 7,500 ponds in the Province,

³ This information is taken from Svay Rieng Provincial Agriculture Services statistics

(Tana 1993), representing a family to pond ratio of around 11 : 1. Catches of wild fish from ricefields, streams, swamps and trap ponds in fish deficit areas of Svay Rieng have been estimated at 30 kg. per household as opposed to 86 kg per household in areas closer to perennial water bodies, (Tana 1993).

Female and Male Headed Household Details.

All families lived in simple wooden huts without electricity. Water supplies were from wells in all cases. Other details of the families studied in this paper are presented in Table 1.

Culture Systems.

All families were attempting fish culture for the first time in FFP sized ponds of 80m², although some were linked to adjacent rice field areas where the fish could forage for food for some of the culture period. Tilapia, (*Oreochromis niloticus*), Silver Barb, (*Puntius gonionotus*) and Common Carp, (*Cyprinus carpio*) were stocked in all ponds at 3 fish/m². Fish were fed on duckweed, termites and ricebran. Cow and buffalo

manures were collected by family members and put into the pond regularly.

Results

Family Labour Divisions.

In the sample **male headed households**, male labour declined over the fish production cycle, whilst women's labour involvement increases, (Fig 1). The data collected clearly shows the domination by male family members in the preparatory and pre-harvest phases of the fish culture cycle. However, the adoption of fish culture by the family places additional work burdens on the women and children during the pre-harvest period, especially in the areas of finding on farm fertilisers and feeds. Men dominated the harvesting of fish from the ponds. Following the fish harvest, female family members tend to dominate activities. Men are actively involved in the marketing, although women are able to control the income derived from fish sales. Children's involvement is both highest and ends with the catching of the fish.

In the sample **female headed households**, women had much more involvement with preparatory and pre-harvest activities, although they are still

dependent to some extent on male labour during pond construction and embankment repair, (Fig. 2). The women in this group were more active in finding feeds and fertilisers than from the male headed household group. Following the fish harvest, women appeared to dominate activities as with they did in male headed households.

The most striking issue in the female headed household group, relates to the catching of the fish. Despite increased involvement in the areas of finding feeds and fertilisers, women were not greatly involved in harvesting the fish. To compensate for this, children and male relatives were called upon for this activity.

Women and Children's Labour.

Forty four percent of all women interviewed, stated that their own labour input was considerably increased over that required for traditional wild fish management whilst the remainder found the additional workload increased to a lesser extent. By male and female headed household groups this figure was 33% and 50% respectively. Given the existing heavy work load of women from poor households in the area, this presumably

means that other work was being neglected. Several women remarked that generally they were able to spend less time with their children as a result of their involvement in fish culture. The women's heavy labour involvement and time away from the household during the rice transplanting season was increased through the tendency for women, (and men) to collect fish feeds and fertilisers on their way back from the fields, thus delaying their return home. Children were also heavily involved with 30% of all women stating that the demand on the children's labour was high.

The current dependence on "on farm" foraged pond inputs, such as duckweed and termites suggests that the labour burden exerted by aquaculture on members of the family cannot be easily reduced unless fish farming families rely more on purchased inputs such as inorganic fertilisers or pelleted feeds. However, these materials are often not available in the village and even if they were, families opined that they would still prefer to labour for on farm feeds and fertilisers rather than purchasing inputs.

Decision making Power

Table 2 presents details on the decision making power in the male and female headed households surveyed. All values are in numbers of households.

In the **male headed households**, women only had decision making power in 2 cases. However, they were able to discuss what decisions were to be made regarding the family's aquaculture in 9 cases. Children had no influence in deciding how the pond was managed.

In the **female headed households**, women had total control of the resource and in the decision making. However in 4 cases, male relatives could discuss the management of the pond and perhaps influence the outcome. Due to the absence of a male household head, the decision making influence of the children appeared slightly increased with 3 households claiming that the children participated in discussion relating to the management of the pond.

Access to information

At present, little formal or informal information on small-scale fish culture is available to farmers in the area as it is largely an untried and unproven

farming activity in the area. As women are usually more tied to the homestead the issue of mobility and therefore access to information which might help their attempts at fish culture was also investigated. The clustered nature of the Project's collaborating farmers allowed and perhaps encouraged most women and virtually all children culturing fish to visit other ponds under aquaculture in their village. There appear to be no cultural restrictions on women and children becoming involved in informal information and experience sharing within their village and this is something which could be exploited by agencies targeting women in aquaculture extension programmes. However whilst women reported that their men folk frequently visited neighbouring villages to talk to other fish farmers, women did not do this.

Fish Harvesting.

From the **male headed household**, 7 of the women stated that they had to ask their husband's permission to take even a small quantity of fish from the pond. Three women stated that informing their husbands after catching fish was adequate. One woman felt free to take fish without having to inform her

husband. Traditionally then men appear to maintain more control over the fate of the fish pond stock and this is probably strengthened by the earlier finding that women are not usually involved with the actual activity of catching fish from ponds. This is endorsed by the studies findings that only 4 of the female headed households had fishing gear as opposed to all 10 of the male headed households.

In female headed households, women appear to be in total control of the fish catch. 9 of the women stated that they neither needed any other persons agreement nor permission to arrange for fish to be harvested from their pond.

Fish Production levels.

Fish Production from these small culture systems were modest ranging from 12 - 55kg. The Fig 3 shows that female headed households generally produced more fish than the male headed households. The average fish production from female headed households was 30.2 kg and from the male headed households was 24.1 kg.

Post Harvest Management.

The table provides details on the post harvest management of the fish. The trend is clear. Female headed households ate and processed more fish than male headed households who sold the majority of their fish (Table 3).

Discussion.

The adoption of fish culture by farming families in the area seems to add a considerable labour burden on women, children and men. With the exception of catching the fish, it appears that Cambodian women can freely participate in all the tasks necessary for fish culture to be successfully carried out. Women also appear to command a fair share of the decision making power even in male headed households.

(*) (Hatha et al. (1994) in their study on Cambodian women-bounded) From the sample families in this study, ponds managed by female headed households were more productive than those by male headed households. This is possibly because these women were able to observe the pond for longer periods of time and could make their own management decisions without waiting to discuss things with their menfolk.)

Women in both female and male headed households appeared unable or

unwilling to break the male role of fish catcher. This may undermine their control of the enterprise and put them in a weak bargaining position if they want to harvest fish when their menfolk don't. The data on post harvest management suggests that women and men might differ in what they wish to do with the fish catch. This might be expected as generally women are more concerned for the nutrition of their families. Quite how much a woman's incapacity to harvest fish alone affects her

overall control of the enterprise could represent a weak link in the fish production cycle chain of events with implications for Cambodian aquaculture extension programmes deliberately targeting women. Aquaculture extension workers should look at ways of encouraging women to develop this fishing capacity so that they are freer to make decisions relating to fish harvesting, consumption and marketing.

Table 1. Household Details

Details	Female Headed Households	Male Headed Households
Average Family size	5.9	6.4
Average Income U\$	92.3	130.0
Average land holding (Ha)	2.1	1.5
Illiteracy rate	44%	39%
Primary School Ed.	42%	42%
Secondary School Ed.	7%	9%
Average No.Draft animals/household	2.7	2.9
Average No. Pigs/household ¹	2.13	0.82
Average No. Chickens/household	9.00	9.73

Table 2. Family Decision Making Power in Small-Scale Aquaculture

	Male Headed Households	Female Headed Households
Women		
Power to Decide	2	10
Power to Discuss	9	0
No Power	0	0
Men		
Power to Decide	9	0
Power to Discuss	2	4
No Power	0	-
Children		
Power to Decide	0	0
Power to Discuss	1	3
No Power	10	-

Table 3. Post Harvest Management of Fish catch.

	Female Headed Households	Male Headed Households
% fish Eaten	50.7	32.5
% fish Sold	36.6	65.5
% fish Processed	13.7	2.2

¹ Pig raising appears to be more popular in the female headed households, possibly because this represented an agricultural income generating/saving activity close to the homestead.

Fig 1.

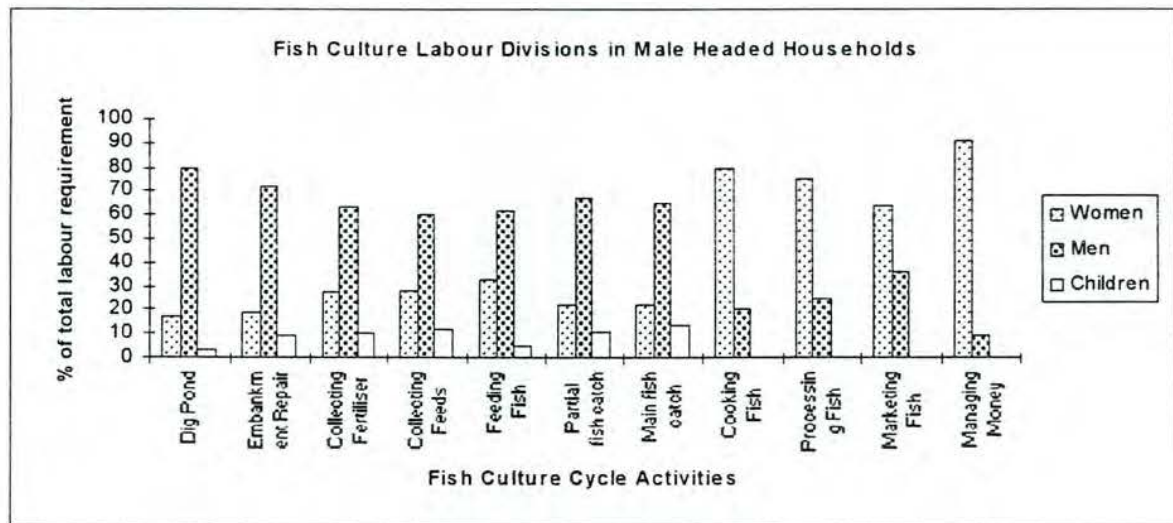


Fig 2

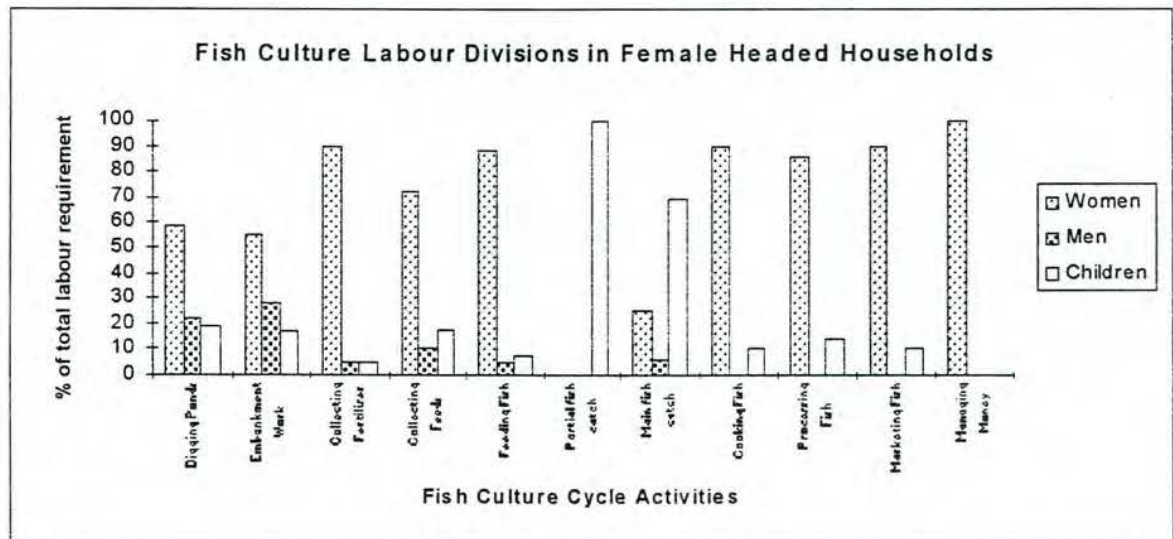
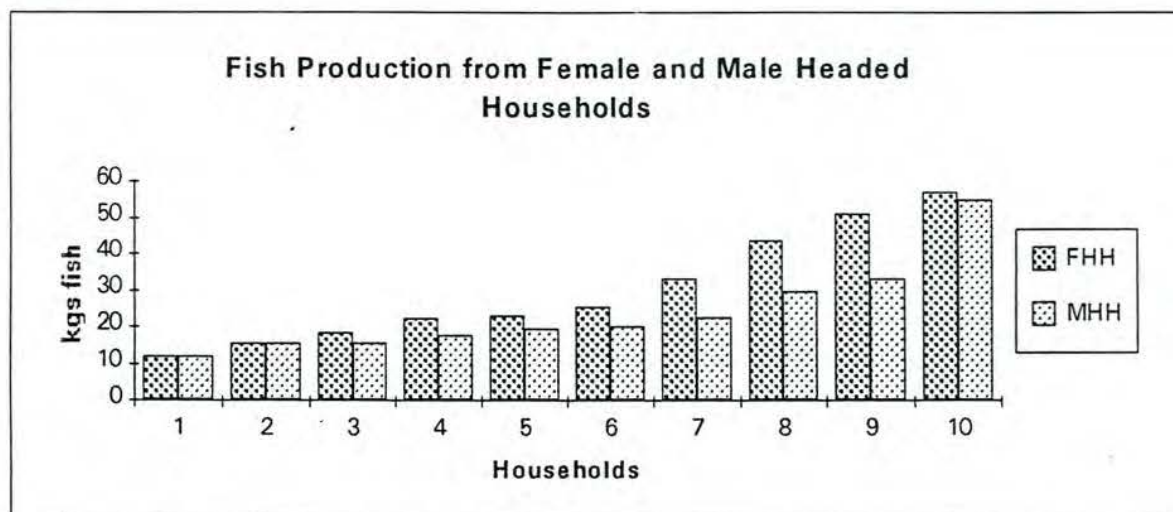


Fig3.



WOMEN IN CAMBODIAN AQUACULTURE

M.C. NANDEESHA

Partnership for development in Kampuchea (Padek)

PO Box 554, Phnom Penh, Cambodia

Introduction

Cambodian capture fisheries is well known for both the abundance of fish and varieties of fishing methods. Owing to the abundance of fish in the natural water bodies, fish forms the main source of animal protein for the people. Different types of gears and capturing methods have been evolved to capture fish from the natural water bodies. Prior to 1950's, the percapita availability of fish was reported to be at more than 25kg/person/year. However, with the increasing population deteriorating environment resulting in decline in fish availability from natural water bodies, the per capita availability at present is estimated at less than 13kg/year. Though this is a national average, there is great variation in the amount of fish consumed between those

families living close to water bodies and those living far off. To mitigate the problem of declining fish availability, the Department of Fisheries (DOF) has placed a special emphasis for the development of small scale aquaculture in rural areas. Although fish culture in ponds is new, cage culture is reported to have originated in Cambodia. At present, three main types of culture systems can be noticed in the country. They are:

- small scale aquaculture in ponds
- cage culture
- pond culture of pangasius

It is anticipated that through the promotion of aquaculture throughout the country, the percapita availability of fish could be increased at least to a minimal level. The Mekong River Commission

(MRC) has recommended based on the food habits of the people and nutritional requirement, a minimum of 32kg/person/year, while the optimal level as 48kg. However, if success has to be achieved in the promotion of aquaculture, it is necessary that gender issues are given appropriate importance to achieve rapid progress. In order to reach this level of fish availability, intensive promotion of aquaculture is recognised as the only alternative

In this paper, an effort has been made to examine the role of women in the three types of aquaculture systems mentioned above.

Small scale aquaculture in ponds:

During the past 2-3 years, various organizations in the country have made an effort to promote small scale aquaculture with varied degree of success. Padek' (Partnership for Development in Kampuchea) is involved in community development through the promotion of sustainable agricultural practices. It is working in 4 provinces namely, Prey Veng, Svay Rieng,

Kompong Speu and Siem Riep. In all these areas, community need assessments studies have identified fish culture as the highest priority requirement of the farmers, including in Siem Riep wherein the Great Lake is known to contribute largely to the country's fish production. Some of the farmers in Prey Veng province made an effort to culture fish as early as in 1991 with tilapia. However, most of the people met with failure owing to technical problems and the activity was restarted again during 1993 with the technical support. The Bati Fisheries Station provided technical support to 77 farmers spread in Prey Veng and Svay Rieng provinces to reinstitute small scale fish culture activity. These farmers were trained in fish culture, but no emphasis was placed for training of women. In the initial trainings conducted, participation of women was less than 20-30% in different areas. However, as the fish culture activity continued, it was noticed that large part of the pond management activities were carried out by women in many families. The level of involvement of women varied widely between the farming families and area. At the end of the

culture period, a survey was conducted to understand the production strategies adopted, production obtained and participation of women in the culture activities.

In Prey Veng province, among the 52 families there were 13.5% of the families wherein women carried out almost all the activities related to fish culture. These included pond preparation, seed collection, stocking, fertilization, feed search, feeding and harvesting. These women carried out all these activities with the help of children. There were nearly another 33% of the families wherein 50% of the activities were carried out by women. In these families, women carried out the activities such as fertilization, feeding and harvesting. There were almost equal percentage of women who carried out 25% or less than this level of the activities. This group of families undertook mostly feeding of fishes. In general, the level of women participation in aquaculture activity in Prey Veng province was relatively less (Fig. 1). The level of involvement of women in fish culture appears to have direct bearing on

the production obtained by these families. Nearly 40% of the families obtained less than 20kg of fish/100m²/8months. In these families, the level of involvement of women was poor. In such of those families wherein active participation women could be noticed, the production level was satisfactory. About 45 % of the families obtained production between 20 and 40 kg/100m² and this production level is considered to be good for small scale farms (Fig.2).

In Svay Rieng Province, there were 25 farmers who undertook the activity, but the results obtained by these farmers were different from those observed in Prey Veng Province. Women participation in training as well as in carrying out day to day activities related fish culture was high in this province. There were only five families wherein involvement of women was lower in aquaculture activity. In fact these are the families who obtained poor production of fish which was less than 20 kg. There were nine families wherein 75% of the activities were carried out by women and in another 40% of the families, 50% of

the activities were carried out by women (Fig.3). There was also one family wherein all the activities were carried out by the house wife with the help of children. Large percentage of the families obtained production which was more than 20 kg/100m² (Fig 4). Women took active role in pond preparation, maintenance of green colour of water through frequent fertilisation, feeding fish by collecting various on-farm resources available in the area, harvesting fish for daily consumption, etc. Though no definite reason could be attributed for the varied level of women participation between the two provinces, it appears that the level of fish availability in the natural environment has some influence on women participation in fish culture activities in these provinces. In Svay Rieng, fish availability is much lower as compared to Prey Veng province wherein there are many water bodies from which farmers can obtain fish during larger part of the year. However, women in both these provinces have identified a number of benefits from fish culture.

- increased fish availability
- improved financial situation

- better social status owing to adoption of new technology
- recreation through greening of area around ponds and feeding of fish
- children could spend more time in studies since they do not need to hunt fish
- gain more friends through distribution of fish and also sometimes enemies
- better use of unused resources
- better utilization of time
- improved nutrition of the family

Based on the observations made during 93-94, strategies for the promotion of aquaculture through the participation of women have been developed. Apart from organising trainings, individual family visits and distribution of leaflets have been adopted as principal means to increase awareness of women on fish culture techniques.

Cage culture activity:

Different species of fish are cultured in cages in both industrial level as well as in small scale. Snakehead, pangasids and cyprinids are the three

groups of fish which are widely cultured. Impressive productions are obtained in both the culture of snake heads and catfishes. Snakeheads are generally cultured in smaller cages of less than 100m^3 , while pangasids are cultured both in small and bigger cages which could be as big as 3000m^3 . With a stocking density of 10-40 kg of fish/ m^3 , a production of up to $150\text{ kg}/\text{m}^3$ has been obtained in snake head culture during a culture period of one year. These fishes are fed largely with trash fish collected from the wild. In the case of pangasids, with a stocking density of 5-10 kg of fish/ m^3 , a production of $70\text{-}80\text{ kg}/\text{m}^3$ is obtained. These fishes are fed with both the trash fish during the fishing season and with cooked rice bran during the lean season.

Women are involved in various activities in cage culture from construction of cage to harvesting fishes. The intensity of women involvement was found to be high in such of those families which carried out cage culture in small scale, the level of women participation was low in those families which carried out the activity on large scale. While men

undertake collection of trash fish from nature, women participated actively in feeding of these fishes. In general men cooked the feed assisted by women. Overall nearly 25-50% of the cage culture activities were contributed by women.

Pond culture of pangasids:

In the Mekong river, pangasids form an important fishery. Pond culture of pangasids culture has been developed around Phnom Penh city using the seeds collected from the wild. There are a number of farmers who have undertaken this activity in smaller ponds ranging from $300\text{-}1500\text{m}^2$. Seeds collected from the wild are stocked at $4\text{-}10\text{ fish}/\text{m}^2$ and grown to more than 1kg over a period of one year. Owing to stocking of bigger size seeds of about 100-150 g, generally high survival is observed during the culture period. Fish are fed with cooked rice bran during most part of the year, though during glut fishing season, they are fed with trash fish. In addition fish are also feed with dry fish when it is available. Depending on the management strategies adopted, productions as high

as 100 tone/ha/year are obtained by some enterprising farmers.

Women were found to be the active participants in feeding of these fish as here again, cooking is generally done by men, and women with children assist in feeding of fishes. Intensity of women participation was high when the activity was undertaken on a small scale. With the increasing intensity of operation, women participation was less.

Conclusion:

Women actively participate in fish culture activity though they do not participate in trainings. Most ponds being backyard ponds, large part of the pond maintenance in terms of fertilization and feeding of fish is carried out by women. Women participation in trainings is generally low, owing to their additional responsibilities in the family and lower literacy level. During 1993-94, when the small scale aquaculture activities were started, number of women who participated in the trainings was less than 20% and no special efforts were made to

provide education to these women. partially, this is attributed to the fact that all the persons involved in the promotion of the activity were men and did not recognise the importance of women in the implementation of the activity. Most of these women derived the knowledge through from men members of the family who attended the training's. In order to ensure the direct transfer of knowledge to women, it is essential that women are encouraged to attend trainings. In order to facilitate their participation, training's should be preferably organized at places and time which are convenient to women. It is also essential that the literacy level of women is taken in to consideration in organizing the trainings which involve less listening and writing, but are more based on learning by seeing /doing Small scale aquaculture is directly benefiting women since this new activity largely helps the family in having food security during lean season of the year. In addition, sale of small part of the fish grown also helps the family in obtaining some cash income to meet the family expenses. In view of the many hardships encountered in the country for effective communication, it is advisable to develop

effective mechanisms such as farmer based extension systems for the rapid delivery of fish culture messages. Further, simplification of the culture technology would benefit women in carrying out the activity without heavy dependence on men.

In the fields of cage culture of snakeheads and pangasids and pond culture of Pangasids, women would be benefited if the improvements to the technology such as cooking methods,

artificial feed formulation, etc., could be made. Presently, cooking is largely undertaken by men owing to the heavy work load involved in cooking of large amount of feed. Similarly, in the culture of snake heads, families have to heavily depend on catching trash fish from the nature for culture of these fishes. Introduction of herbivore species in cage culture would possibly benefit these families in obtaining higher returns with less input in terms of labour and money.

FIG 1. WOMEN INVOLVEMENT IN FISH CULTURE (PREY VENG) 93-94

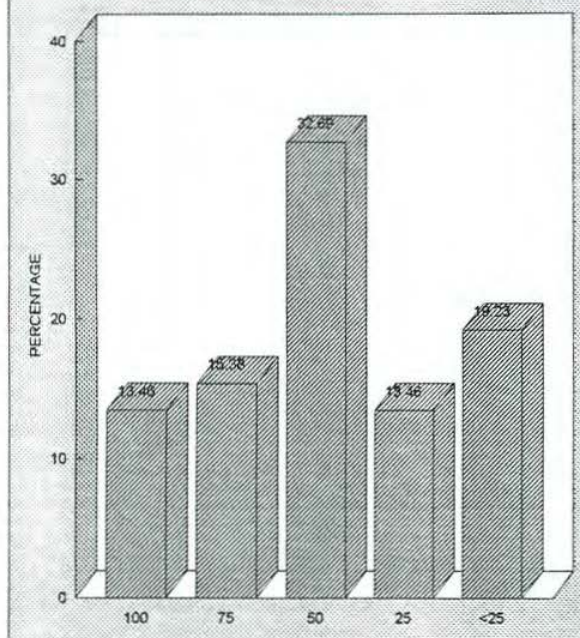


FIG 2. WOMEN INVOLVEMENT IN FISH CULTURE (SVAY RIENG) 93-94

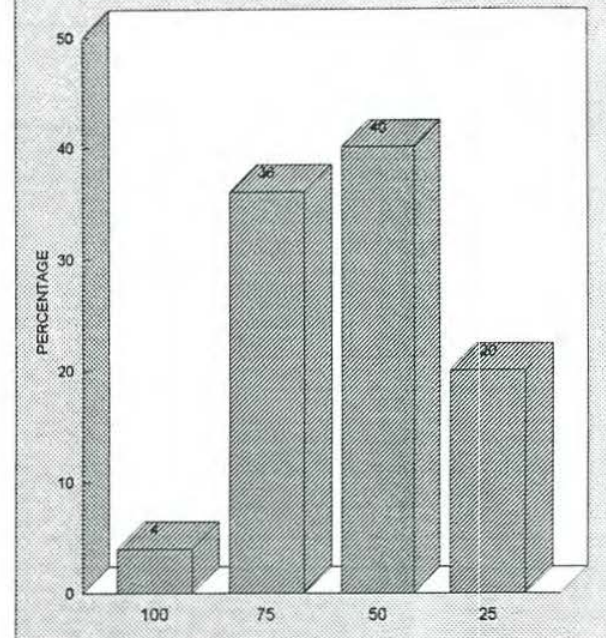


FIG 3. FISH PRODUCTION OBTAINED (PREY VENG) 1-93-94

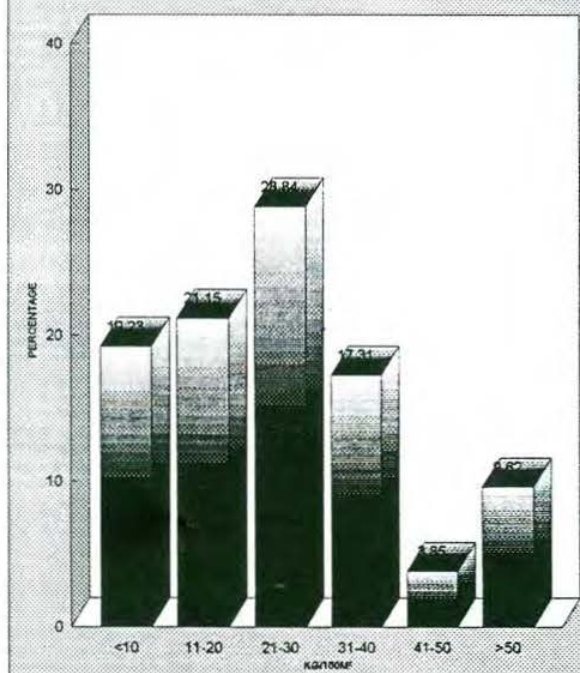
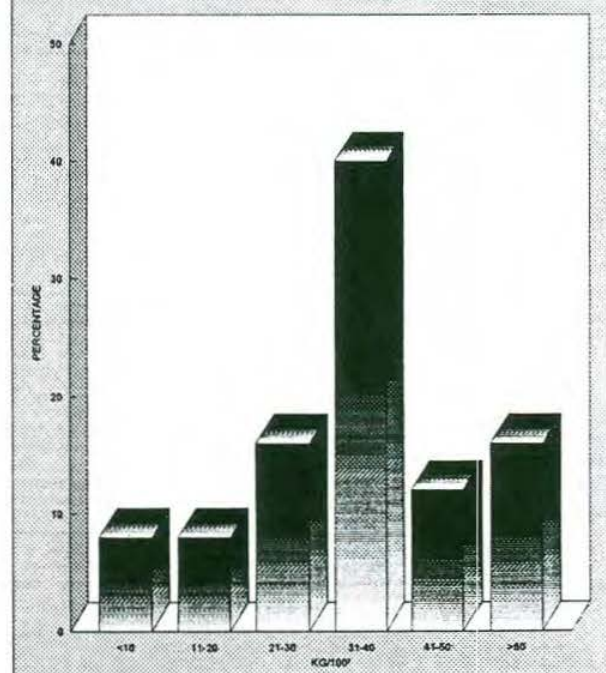


FIG 4. FISH PRODUCTION OBTAINED (SVAY RIENG) 93-94



PROGRAMME SCHEDULE

NATIONAL WORKSHOP

ON

WOMEN IN CAMBODIAN FISHERIES

7th - 9th Nov. 1994

7.11.94

9.00 to 10.00 AM:	Inaguration
Master of ceremony:	Mr. Ngan Heng, Director, BFSPRC
Welcome by:	Dr.M.C.Nandeesha, Fisheries Advisor, PADEK
Address by:	HE Tep Nunnery, Governor, Prey Veng Province
Address by:	HE Hiam Rum, Secretariat of State for Women Affairs
Address by:	HE May Sam Oeun, Ministry of Agriculture, Forestry and Fisheries
Inagural address by:	Mr.Michiel Peyra, Director of PADEK

I SESSION:

Chairman:	Ms.Barbara Cam
Rapporteur:	Dr. Millet Santos

10.00 to 10.30 AM:	Tea break
10.30 to 11.00 AM:	Women in Cambodia, Director, WID, Secretariat of State for Women Affairs.
10.30 to 11.30 AM:	Women in Cambodian Fisheries- an overview Mr. Touch Seang Tana, Fisheries Advisor, DOF
11.30-12.00 Noon:	Discussion.
12.00 to 13.30 PM:	Lunch break

II SESSION:

Chairman: Ms. Hou Sameth

Rapporteur: Mr. Ngan Heng

1.30 to 2.30 PM:	Social and economic issues related to women in fisheries. Dr. Revathi Balakrishnan
2.30 to 3.00 PM:	Women in the capture fisheries, Dr. M. Ahmed, Hap Navy and Ly Vuthy
3.00 to 3.30 PM:	Women in coastal fisheries, Mr. Jeffrey A. Guy, APHEDA
3.30 to 4.00 PM:	Women in Aquaculture in Kandal Province, N. Goddard, E. Santos, H.F.S. Dowell and Kong Thida
4.00 to 4.30 PM:	Tea break
4.30 to 5.00 PM:	Women in fish processing in Siem Riep Province, Mr. Nao Thuok
5.00 to 5.30 PM:	Discussion
6.00 to 7.00 PM:	Dinner

8.11.94

III. SESSION:

Chairman: Dr. Mafuzidin Ahmed

Rapporteur: Ms. An Pich Hatha

8.00 to 8.30 AM:	Policy issues related to the role of women in development of water resources in the lower Mekong basin. Mr. Samran Chooduangern, Mekong Secretariat
8.30 to 9.00 AM:	Women in Cambodian fisheries - a feminine perspective. Ms. Sophea Nhonh, UNICEF
9.00 to 9.30 AM:	Women in Fisheries in Battambang Province, Ms. Noun Bona and Mr. Ith Sopha, CARERE

9.30 to 10.00 AM: Role of women in the Cambodian Fisheries, Department of Fisheries,
Ms. Keo Sovannary (Mekong/DOF)

10.00 to 10.30 AM: Tea Break

IV SESSION:

Chairman: Mr. Rick Gregory

Rapporteur: Ms. Keo Sovannary

10.00 to 10.30 AM: Women in Fish Marketing in Cambodia, Mr. Touch Seang Tana, DOF

10.30 to 11.00 AM: Changes in the role of women and children following the introduction
of aquaculture. Ms. An Pich Hatha, Ms. Sam Narath and Rick Gregory
AIT/DOF

11.00 to 11.30 AM: Women in Aquaculture in Romeas Hek, District, Svey Rieng, Province.
Women Farmer Leader, PADEK project area

11.30 to 12.00 Noon: Women in Aquaculture in Chear Khlang Commune, Prey Veng
Province. BY Women Farmer Leader, PADEK project area

12.00 to 12.30 PM: Women in Cambodian aquaculture. Dr. M.C. Nandeesha, PADEK

12.30 to 2.00 PM: Lunch break

SPECIAL GROUP DISCUSSION SESSIONS:

2.00 to 3.30 PM

Group discussion

I. SESSION: Women in Aquaculture

Chairman: Ms. Barbara Cam

Rapporteur: Dr. M.C. Nandeesha

II. SESSION: Women in Fisheries Research, Education and Development

Chairman: Mr. Nou Thuk

Rapporteur: Mr. Rick Gregory

III SESSION:**Women in capture fisheries**

Chairman:

Mr. Touch Seang Tana

Rapporteur:

Dr. Mafuziddin Ahmed

IV. SESSION:**Women in Fish Processing**

Chairman:

Ms. Sophea Nhon

Rapporteur:

Mr. Wayne Gum

3.30 to 4.00 PM:

Tea Break

V. SESSION:

Chairman:

Mr. Touch Seang Tana

Rapporteur:

Mr. Kuong Yun

4.00 to 5.00 PM:

Presentation of group discussion results followed by discussion.

5.00 to 6.00 PM:

Some research ideas to address the issues related to Women in Cambodian Fisheries, Barbara Cam and Mafuzuddin Ahmed

6.00 to 6.30 PM:

Discussion.

6.30 to 7.30 PM:

Dinner

9.11.94

Chairman:

Dr. Nandeesha

Rapporteur:

Mr. Jeff Guy

9.00 to 11.00 AM:

Meeting of the planning committee

11.00 to 11.30 AM:

Tea

11.30 to 11.45 AM:

Closing remarks by PADEK Director

12.00 to 1.00 PM:

Lunch

