

Increasing of opportunities for women and men in aquacultural activities in Quang Thai, Quang Dien, Thua Thien - Hue

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Abstract

In recent years aquaculture has developed very strongly as a new livelihood for local people in Quang Thai. Aquaculture development, which increases opportunity for local people, was encouraged and supported by organizations such as the provincial Department of Fisheries, NGOs such as ICCO, etc. The major objective of this research is to plan development while maintaining equity among different groups of inhabitants with a focus on women and men.

The research used participatory tools and methods such as SWOT analysis (Strengths, Weaknesses, Opportunities and Threats), household interviews, focus discussion group and observation with three local groups: Fixed gear and mobile gear fishers and farmers/fishers to analyze their situation and indicate who, among the local people have opportunities to develop aquaculture and who have not. The results indicate that women and men in the 3 groups derive different opportunity and benefits from aquaculture due to their social and economic status, culture and government policy.

Using these results, we would like to help local people (especially women and poor group) to find solutions for themselves and increase their benefits from aquaculture based on gender equity.

* Key words: Aquaculture, opportunity, strength, weakness, threat, gender role.

INTRODUCTION

Management of biological resources and coastal ecosystems are easily overexploited and stressed by physical and biological factors. With the growing knowledge base on humanism, specific environmental effects and relationships, it has become increasingly evident that a broad or holistic approach to management in these systems is usually more appropriate. With increased education and rapid transfer of information and opportunities for coastal community, it is apparent that social values as represented by laws, regulations, and public opinion also play an important role in management of biological resources. The management of sustainable fisheries in coastal ecosystems requires not only an understanding of the science of ecosystems, but also the sociological values of the particular human population in the area (Dame, 1999). The management of sustainable fisheries in coastal ecosystems requires not only an understanding of the science of ecosystems, but also the sociological values of the particular human population in the area (Dame, 1999).

The management of biological resources in Tam Giang Lagoon project was founded in 1995 by IDRC (the International Development Research Centre, Canada) and CIDA (Tuyen et al.1997). The project was developed into two phases: 1995-1997 and 1997-2000. The first we

concern to interdisciplinary research and Participatory methods in Community - Based Coastal Resources Management (CBCRM) is maintained methodology and tools for our project.

One of aims of the project is consideration the effects of aquaculture to social relations, especially on gender aspects in Lagoon systems. In phase II, the aspects were considered in two areas: Quang Thai and Phu Tan. In this case study or results of research we review the ideas, arguments and solutions about gender issues in activities here, specifically in aquaculture. So the main questions in our research are:

1. Who have opportunities and benefits in aquacultural developments in Quang Thai?
2. What are different in opportunities between Fixed women, Farming - fishing women and Mobile women in aquaculture activities?
3. How to increasing opportunities and benefits for men and women in aquacultural activities?

Quang Thai is one of poor commune of Quang Dien district, Thua Thien Hue province. There are 8 villages in the commune, Trung Lang is one of these villages have more opportunities to earn for living: farming, farming-fishing and fishing. In past years, the people have only chance to fish, crops, and animals. Recent years, the biological resources in lagoon of Quang Thai gradually decreased, income from fishing and farming is very low, therefore many households were transferring to aquaculture. The households can separated into 3 groups and the number of groups which have aquaculture follow: Farming-fishing plus aquaculture (15/ 54 households), fixed gear plus aquaculture (15/ 22 households), and mobile gear plus aquaculture (31/32 households) - Hoang Xuong 9 /2000.

In terms of aquaculture activities, the situation of Quang Thai is not the same as Phu Tan. In Phu Tan they raise crab, shrimp, fish which can export and fish processing also develop more. In Quang Thai local people only are raising fish in fresh water. There are two kinds of fish raising: in the cage (*Mylopharyngodon* and *Aristichthys nobilis*) and in the field (*Ophiocephalus striatus*, *Crassius auratus*, *Anabas testudineus*, *Notopterus notopterus*); however, cage raising is most popular. On average, the cages are 50 to 70 m². With these cages mobile group raise fish from May to January (sometimes even until May of next year) and others raise fish from October until the next September.

In aquaculture, fishers in Trung Lang have to do a lot of work: Buy and transport bamboo, equipments; make cage; select, buy and transport fingerlings, collect food, buy and process food, fish feeding, relax control cage when fish grow up, protect cage, treat for fish, harvesting and sell fish. The men respond buy and transport bamboo, equipments and fingerlings; make cage; rake macrophyte, feed fish, maintain and protect cage, treatment and harvesting. The women respond buy and transport bamboo and equipments, make cage (only extra labour), macrophyte rake, catch small shrimp, buy and process food; feed fish, harvesting and sell fish (Household interview, Lan. 2000).

To make cage, they have to go to other villages. It takes one or two day for that. Other equipments (net, boat...) they can buy in Hue city or in the village pass trades. For fingerlings, they often get them from Hue, but some households buy at the village from trades who come from Quang tri province or Hue.

For both men and women, daily duties include: cage protection, food collection and food processing, fish feeding. They feed fish from one to two time everyday. Food for fish is very

important in aquaculture. They often use: macrophyte, grass, mash, tine and plant of peanuts to make fish food. Some of food (as freshwater macrophyte, *caridina*) they can collect on lagoon, some other they can collect on their field (grass, plant of peanuts) or have buy something in the market if they can't get them for example *caridina*, mash (for fixed and mobile group who have not agricultural production). For small fish they have to process food. The first they dry, pound tine then cut macrophyte very small, finally they mixed tine, macrophyte and mash to feed.

In Quang Thai's condition, to develop aquaculture for the households, beside of their efforts, have helping of government and community to exploit for natural and social potentialities, toil to develop households' economic and update on market economy. They also are supported by Thua Thien - Hue Department of Fishery (DoF) since 1997. DoF supported they breeding, technique and medicine. However, the this project did not consider who in the community would benefit from aquaculture and who in the community would not i.e. some households would benefit more than other households. Importantly, the project did not consider how to help those groups with less opportunities overcome their obstacles.

The objectives of our the research is increasing opportunities for local person in aquacultural activities on based maintain of equally between groups of inhabitants' focus on men and women. Also, we would like to apply participatory research methods in management resources on Lagoon of Vietnam.

2. LITERATURE REVIEW:

The economic growth usually was recognized as a major objective to evaluate development level of countries on the world. There are many studies, which are focused on economic growth in interaction between many components, and wholly, they are always interacted in environmental relations, resources and society factors.

Increasing of opportunities and benefits for women and men in aquaculture are subject that have direct relationship to economic growth, social equity, special gender equity. The equally between social groups, especially women and men are as an important component of social - equal structures. Therefore, the gender equality is one of factor of Gender And Development (GAD). One of objects of GAD is sustainable and equity in development processing (CCIC, 1991). The objective of using GAD is to analyze and value about social factors of aquacultural development in Tam Giang lagoon.

In development, "focus on women group is essential because women contained half of population, supporting women means supporting their family including children. No sustainable development in economy that can take place without women" (Mette Ide lauridsen, 1997). In the article "Gender, Economic growth and Poverty" (edited by Noeleen Heyur Gita Sen, 1994) showed that: "there is a relationship between economic growth and gender equity". The are two factors to consider in working out the relationship between economic and gender equity, the first related to work earnings, the issue here is the impacts of economic growth on patterns of employment and wage rate across gender (Noeleen, 1994). Women are usually concentrated in the agricultural sector and in the informal sector where the rate of growth and the potential for growth are relatively low. In the some sector where the growth rates are much higher, the majority of women are concentrated in the unskilled or

semi - skilled categories and hence have limited access to the opportunities and benefits of economic development.

Also author's idea, the second factor, which related to the ways in which government policies and programs deal with social development. Structures of gender hierarchies and traditional culture systems in many countries affect the ways in which governments can be responsive to the social developments needs of people or the effectiveness with government can put into place programs for human development. The degree of gender stratification and the type of culture systems which influence gender equity vary across countries but are have been found that in countries. With high degree of gender inequity the ability of government programs to promote women access to even basis needs, like education and health care is mediated through gender, culture, and hierarchies.

From the explanation above, the author gave conclusion: "For women to take advantage of future trends related to economic development it is important that they be concerned with skill development. The possibilities for women to do so are, of course, limited by the kind of work available to them and the social and organizational arrangements, which support this development".

The other authors referred to women as target group which we need focus on them in developmental process. Mette Ide Lauridsen, in her lecture "Danida's WID policy towards the year 2000" at training course on "Gender, Family and Environment in Development" (1997) explained why do we think it is necessary to focus on women in our development cooperation with third world countries?. She said that women are half of population in the world. The supporting women you also support for their children and family. No sustainable economic development can take place without women. In fact many projects aiming at and succeeding in economic development marginalized women, reduced their living standards and made women access to important resources, as land, access to credit and market ..etc..., difficult. They get the obstacles in social - politic, education, the right to have land and own land, the right in using credit, technology, in formation and opportunity to find job. To focus on women already, the author mentioned a policy towards the year 2000 as women must be have opportunity to fully participate in benefits of projects, development programs and policies in general.

In Vietnam, the researches which have relationship to increase opportunities and benefits for women and men in aquaculture not a lot. Recently, there are some results were mentioned that in their research program.

Since 1995, some studies were have done by research groups on Tam Giang Lagoon, first results were showed there is a significant relationships between the aquacultural development and their affects to environment and society in Phu Tan. Le Van Mien, (2000) said that the conversion and development of aquaculture in Phu Tan strong affected to different social groups in the locality. There is a result that's a clearly observation in the lagoon system, the mobile groups have lost opportunities to catch and earn for their living. The research also showed that the total of water areas have around 710.3 ha (included 99.1 ha of marine flooding). Since 1987, Hue shrimp company have builds a system for shrimp enterprising, they used 12.8 ha to make experiment in shrimp raising and Agar Company used 100 ha to plant seaweed, consequently many fisheries were competing to make pond for shrimp and seaweed as well.

There are some of shallow water areas, more seaweed, aquatic were fenced and they have only deep water areas or distant areas and difficulties for earnings. Some of them in mobile groups had more difficult to find better ways to earn, sometimes they had some conflicts between mobile groups and aquacultural groups dislocation. Consequently social problems in coastal community, for instance, retaliations of mobile groups to fixed groups, otherwise, some of families must leave the village for other village (Mien, 2000).

With participatory research method, the author of this article concluded the local aquaculture brought benefits for small groups of the people, the numbers of aquacultural households became an enriched persons and pressure mobile group leading to loose opportunities and benefits in lagoon systems. In addition, It caused to environmental pollution in field, ponds, and villages, leading to unstable situation, inequity in the use of biological resources in the coastal community (Mien, 2000). However, the article did not show how this situation effected on men and women group in Phu Tan.

The subjected to be in opportunities and benefits for aquaculture groups, which were suggested by Phap, T.T., (2000). In the affect of aquaculture on society, the author showed that the inhabitants, group has opportunities and benefits not the same when develops aquaculture. Aquaculture requires high investment, so only better for fisher or those who have access to loans are able to develop this activity. Fish corral fisher who obtained rights to water areas through actions. Before 1975 now maintain those right by paying taxes to the local government they are in a favourable position to convent the area they are using for fish corrals in to aquaculture areas if they comply with regulation and requirements of the local government. The farming - fishing household also have a good opportunity to enjoy in aquacultural activity because they have land to change from crop production to aquacultural production. While the mobile gear groups haven't land and money to participate in aquaculture and they no access to fishing grounds or aquaculture areas, they will be pushed further into poverty and difficulties (Phap, Mien, Duyet. 2000).

The documents that we mentioned not a lot, including theory and experimental research, but they showed about problems appeared in economical development process focus on developing countries as Vietnam. They opened for us good ideas when consider gender issues in development aquaculture in Trung Lang, Thua Thien - Hue.

3. METHODOLOGICAL APPROACH :

The method of information collection and data analysis is based on tools and methods of participatory methods in community - based coastal resource management (CBCRM). The majors methods which were used are: Strengths, Weaknesses, Opportunity and Threats (SWOT) analysis; focus group discussions, householder interview and observation.

3.1. *SWOT analysis method:*

The method was carried out on 2 local meetings:

- The first meeting:
24 participants from three groups:
 - + Farming / fishing: 8 (4 men and 4 women);
 - + Fixed gears: 8 (4 men and 4 women);

+ Mobile gears: 8 (4 men and 4 women).

In this meeting, there were 3 women from women-headed households: 1 head from each of the production groups (farming/fishing, fixed gear and mobile gear fishers).

Within this meeting, there were some husband and wife teams and some men and women were from different families; however, all members had aquaculture cages. The facilitator explained the SWOT matrix and asked the groups to look at the roles of men and women in aquaculture activities. The large group was broken down into three smaller groups based on gear type: farming-fishing, fixed gears and mobile gears in aquaculture. Then, each of these three groups, broke down into smaller groups (divided by gender) to discuss the matrix and then returned (men and women) to discuss the matrix together as a group (the three groups did not join into a larger group at the end to discuss differences / similarities between the fishing groups).

- The second meeting:

18 women from 3 groups (5 women had also participated in the first meeting)

+ Farming / fishing: 6 (4 people have cages, 2 people have no cage);

+ Fixed gears: 6 (4 people have cages, 2 people have no cage);

+ Mobile gears: 6 (5 people participate in aquaculture, 1 person does not).

In this meeting, there were 3 women from women-headed households: 1 head from each of the production groups (farming/fishing, fixed gear and mobile gear fishers).

During the second meeting, a SWOT analysis looking at the role of women in aquaculture activities was carried out. The women broke into 3 groups: farming-fishing, fixed gears and mobile gears in aquaculture. Each group concerned on these variables by themselves to indicate and definite more their position, correctly information and data. Since women in Trung Lang have fewer chances to talk and report on the community so they shy or they have been ashamed that by themselves front more people; therefore, the second meeting was held with only women to give them a chance to speak and to check / validate the information given in the first meeting. Some women who haven't fish cage or not participate in aquaculture activity also selected to give their ideas.

- In the each meeting, researchers used to combine more data and information for other research in interdisciplinary research group (Chat, Suong's research) or to find general tree of problems and objectives that's suggested by all members in the research group.

- Preparation:

In preparing for the research, it was essential to first meet the head of Trung Lang village to select the key informants. The selection of key members in discussion, we met head of the village and chair of women union branch to learn them first and introduce them to the meetings. After introduction of objectives and opening of the meeting, they gave the list of participants into 3 groups in aquaculture. Village and women union leaders helped them to choose key informants.

The preparation for participants, we made plan and schedule of next meeting (schedule, place, materials, notes, etc.)

- Process for discussion

Step 1: Researcher met leader of village and W.U to selected participants and set up 3 discussion groups (not randomly);

Step 2: Participants selected a facilitator per group because they are now able to do this. He or she was trained about skills and contents of the meetings by researcher. Researcher trained/discussed with the facilitator how to organize participants in the meeting, how to start with them, what are discuss in the meeting and how to write results on matrix. Trainer and facilitators tried working on the SWOT analyze example to understand that. In this case, the trainer played role of facilitator and facilitators played role of participants.

Step 3: Researcher and facilitator indicated of contents and specific matters for participants, which are needed to fill, out or write down by pieces of papers. Determination of variables (SWOT) and convert or interpreter to local language for them to well understood. And then facilitator coordinated and control the discussion by the variables were indicated.

Step 4: Facilitators summarize data and information from participants and showed them on the matrix tables. In the second meeting facilitators compared the results from the first meeting with what the women-only groups said. Since the results, in terms of women's role in aquaculture activities, were the same as in the first meeting it was easy to combine the information from the first and second meeting.

Step 5: (For 1st meeting) Researcher and participants built and designed of next planning action, which carried out for women and men in Trung lang. The part of the plan focusing on women was then discussed during the second women-only meeting.

3.2. Household interview:

The household interviewing method used to determine and analyze on strengths, weaknesses, opportunities, and threats for women and men in aquaculture in households. Concentrated on wife and husband in their household.

There were 6 households chosen by head of village and researcher. They were selected randomized selection (draw lots) on the list of participatory households. They including:

- + Group of farming-fishing: 2
- + Group of fixed gears: 2
- + Group of mobile gears: 2

Of the six households interviewed, half had participated in the SWOT matrix discussions. Outside these households, we used information from a case study in 2000 about Mrs. Tran Thi Vach - a women headed - household.

Before interviewing, we have prepared for interview guidelines (see appendix) to collect information or data, which are necessary to get for the study. Materials and tools also prepared for each interview. Each household can be interviewed 1-2 times, individual interview to wife and husband, and then commonly discussion to find out general opinions. Data and information recorded in householder report.

3.3. Focus group discussion:

There are 12 persons: 6 men and 6 women (key informants), which selected by researchers and head of the village (4 men, 3 women had participated in the SWOT discussions). All of them do aquaculture. The people are a good background in the village and they also have results in aquaculture and others of the village. They are in different groups as following;

+ Farming-fishing: 4

+ Fixed gears: 4

+ Mobile gears: 4

In the discussion, there 2 women-headed households participated: 1 head of a Farming/fishing household and 1 head of a Fixed gear household.

The major goal of these interviews was to better understand gender activities in aquaculture and the situation in Trung Lang. Research activities included: make aquacultural maps, seasonal calendars and biological clock for aquacultural groups.

3.4. Observation method:

The use of observation method to checked and tested data and information from local persons in households, groups and meetings. With method of householder interview and SWOT approached in this field studies. For example, observed fisheries to work with fish cages on the lagoon, the researcher must be observed fish distribution on the water areas in the cages and.

4. RESULTS AND DISCUSSION

1. Who is coming to get opportunities in aquaculture?

The opportunities effect to equal standards of men, women as different inhabitant groups in society and lifestyles in the areas. In developing socio-economy, the opportunities and welfare are interested in development especially it is became an important variable for projects and programs.

As review from introduction section, Trung Lang Village has 3 inhabitant groups to access to aquaculture: mobile, fixed and farming-fishing group. They all are living in a similar cultural and geographic condition, so they have some characteristics the same. However, they have specific characteristics each group. Hence, studying in opportunities and benefits, we can consider these characteristics to distinguish common and specifics for each group.

Mobile group: Which use simple and small gears to cat fish as Eel - rake, pushnet, clam rake. In recent years, there are many fishing households in the group to access aquaculture. They are working mixed model (fishing and aquaculture). There are all of households (31/32) access to aquaculture, with 40 men and 30 women (Xuong, Hoang. 2000). The group has more households to access fish raising in the village because they are the poorest group so they have received supports from the project (Tam Giang lagoon, IDRC) in breeding, materials and techniques in 1998, 1999 and 2000.

Fixed group: Which use fish - corral to fishing, so they have plans to design and implement water areas in lagoon in long time ago. They also make property rights to use water area in lagoon and consideration as a property from many generations from ancestors. In recent

years, there are some households to combine fishing and fish raising. They have aquacultural numbers less than mobile group. In statistical report of Trung Lang, there are 15 households access to, with 21 men and 15 women. However, in this group have some households get a high productivity in the village, such as MR. Tran Thanh¹.

Farming-fishing group: This includes households that can get income from farming and fishing. And now, they have 15 aquacultural households, with 19 men and 17 women to access. They can earn for living from many activities, such as on farm, fishing, fish raising in fresh water. The inhabitant group, they are living in long time in the village and they have very right in use land to build house and production . In the recent years, they have a low income from agriculture and fishing and they are developing aquacultural activities to earn more income.

Our results of SWOT were showed on these matrixes below:

¹ About Tran Thanh case, he has a field and produces rice since some year ago, but it is a sell - field and he hires others to work on the field while he and his family don't work directly. In formal system of commune, his family is still part of the fixed gear group.

Table 1: The SWOT's matrix of Mobile gear group in Trung Lang village

	Men	Women
S	<ul style="list-style-type: none"> - Mobile men are strong, can do many activities in aquaculture (buy bamboo/equipment, make cage, control machines and repair them, protect cage ...) - Have experiences when working on lagoon - Have more experiences in aquaculture than women - Have boat and other equipment 	<ul style="list-style-type: none"> - They can collect, process and mixed food for fish - Have experiences when working on lagoon - They are living very closed so exchange experiences and technologies together - Have free time after finish fishing
W	<ul style="list-style-type: none"> - Lack capital - Low education or illiterates (70 % of population are illiterates (from 11 to 70 year old), including 65 % women and 35 % men) - Lack aquacultural technique 	<ul style="list-style-type: none"> - Most of women are illiterates, they can't read and write - Lack of capital - Can not work hard activities and protect fish in storm, flood - If not married or widow can not raising fish - Can not control disease or steer boats
O	<ul style="list-style-type: none"> - Government have aquaculture policy - Supports from Thua Thien - Hue Department of Fishery, IDRC - Water area very large - Have free time in the every afternoon, not busy like women 	<ul style="list-style-type: none"> - Government have aquaculture policy - Supports from IDRC, DOF for their family - Natural conditions are very good - Have leisure time more than women in other groups - Sell fish easy
T	<ul style="list-style-type: none"> - They are poor men group - Most of them are sampan , no have red book -The bank very far and very difficult to borrow - Lack of fingerlings - The transport very difficult - The weather is very hard - Many people use of electrical gears 	<ul style="list-style-type: none"> - They are poor women group - Most of them are sampans, haven't red book. - Women difficult to borrow money from bank (far, while women can't use bicycle and motorbike, intricate procedure, many steps, the most of women aren't head of households). - The weather is very hard - Many people use of electrical gears

Table 2: The SWOT's matrix of Farming - Fishing group

	Men	Women
S	<ul style="list-style-type: none"> - The men are strong, can response with main activities in aquaculture - Have experiences and skills to working on lagoon - Control machine and protect cage in flooding - Some men graduated primary and secondary school, they can up date technique and loan resources 	<ul style="list-style-type: none"> - Can response some activities: feed collection, process and mix feed, process agricultural by - products to fish and supplemented or additive feed as well - Can use gears of fishing for aquaculture - Can save money from selling garden and agriculture to invest for aquaculture.
W	<ul style="list-style-type: none"> - Many people low education. 38 % of population are illiterates (from 11 to 70 year old), including 60 % women and 40 % men - Not a lot experiences and information in raising fish - Lack of capital 	<ul style="list-style-type: none"> - Lower education than men, high ration of illiterate - Have a less knowledge of techniques and experiences, don't know how to learn them - Very busy in harvesting and housework - Not strong than men, can't do hard work in raising fish - Lack capital - Lack of beliefs in their possibilities, afraid loss their capital because the weather and they don't know how to invest
O	<ul style="list-style-type: none"> - Water is very large and available for aquaculture, they can raising in cages or fields - They can get support from DOF (fish breeding, technique)/ Agricultural Bank (loan money)/ Government (policy) -Local feed resources are available - Have free time (VIII, IX, X, XI) 	<ul style="list-style-type: none"> - Lagoon very large, till general own for both men and women - They get supporting from W.U (capital) - Have feed for fish from agriculture which process by them- self (plan rice, pea, mash and other) so feed cost low.
T	<ul style="list-style-type: none"> - Some of them not have red - book -Loan money from the Bank very difficult, short time and very small. - Fish often get problem from diseases - The climate is harsh and variability (VI, VII, VIII, XI) - Many people use electrical gear to cat fish 	<ul style="list-style-type: none"> - The most of head of households are men -The bank is far and loan money very difficult. - Women lack opportunities to get technique, capital - Fish often get problem from diseases, women can not control them - Have not free time to learn technique and experiences with other - Women can not protect fish in flood - Environment was polluted by many people use electrical gear to cat fish

Table 3: The SWOT's matrix of Fixed gear group

	Men	Women
S	<ul style="list-style-type: none"> - Men can do hard work in aquaculture (Make cage, transport bamboo and fingerlings, protect fish in flooding) - Have big gears and can control them - 50 % of total households have money to invest for aquaculture from 2 to 5 million VND. - Have good experiences to work on lagoon condition (even typhoon and flood) - Have right own land and water though Fish - corral - Have more experiences and technique than women 	<ul style="list-style-type: none"> - Women can respond some things in aquaculture, they have good experiences in feeding and feed collect - Fishing women have more leisure time than other groups - Can use gear and have experiences working on lagoon - Can protect fish everyday - They can sell products in aquaculture
W	<ul style="list-style-type: none"> - Lack of capital - Low education (58 % of population are illiterates (from 17 to 70 year old), including 58 % women and 42 % men) - Lack technique and experiences in aquaculture, can not control disease, water pollution, treatments - Low condition of living (no television, news...) so don't get information 	<ul style="list-style-type: none"> - Not strong as men to do hard work, no men very difficult to raising fish on lagoon. - Most of women are illiterate, can't read, write and calculate - Have experiences less than men in aquaculture - Can not work in harsh condition (flood, typhoon) - Can not go to far to buy breeding and equipment to make cage.
O	<ul style="list-style-type: none"> - The lagoon very large and freedom in using - Equipments to make cage are easy to buy or collect - Food easy to collect - Government support by policy, DOF support fingerlings and technique for some hhs. - Have free time to take care fish (especially in months IX, X, XI) 	<ul style="list-style-type: none"> -The lagoon very large and freedom in using, women have equity right to use them as men - Government and W.U support to households - Feed for fish very easy to collect (Caridina, macrophyte, mash, plant of peanut), women can get them when they fishing on lagoon. - The market very near their living and easy to sell product
T	<ul style="list-style-type: none"> - There are threats for fish cages (fishing around cages, flooding, storms, using electrical gears) - Did not attend any aquacultural training - Can't management and control using water areas - Some households can't borrow money because haven't a red book -Fish often get disease - Fishing are happening in variation and no management 	<ul style="list-style-type: none"> - Flood, storm or other destroy to their cages. Water quality is not stable, - A lot of people use electrical gears in fishing - Threat of disease but don't know about reasons - Women can't access to information, capital and technique - Have free time less than men to enjoin aquaculture - Women have lower position than men

Strengths of men and women in aquaculture activities

First, we will focus on the strengths of men and women in aquaculture activities based on the three production groups: Farming/fishing, Fixed and Mobile in aquaculture.

The SWOT analysis indicates that both women and men can access aquaculture. Because the villagers have experience with fishing, they are able to work in all water conditions and they have skills in operating equipment and gear in the water. Since they have fished, they have boats, machines, nets, rakes and other equipment that can be applied in aquaculture i.e. do not need to increase to much inverting for their production. Also, they do not need to learn how to operate a boat or other fish gear and equipment. The most of households are living very closed (both men and women). With the organization of community the same that, if they know how to linking each people, they can help together in aquacultural activities. For example: they can discuss how to protect cage in flood, transfer experiences and new technical aquaculture.

All three groups (both men and women) have more time to access aquaculture in months X, XI, XII. in Lunar seasonal calendars (see Appendix). During this time, they can be involved with aquaculture activities, specifically the fixed group because they only fish in the morning and in the afternoon they can take care and feed fish.

In aquacultural households, men can respond buy and transport bamboo, equipments and fingerlings; make cage; rake macrophyte, feed fish, maintain and protect cage, treatment and harvesting. The women can respond buy and transport bamboo and equipments, make cage, collect/buy and process fish food; feed fish, harvesting and sell fish.

Differences between men and women

Men and women see different strengths in their role in aquaculture activities. Health is the essential condition to access aquaculture because aquaculture activities are physically demanding. The results of the SWOT matrix, in Table 1, 2 and 3, show that men in all three groups have a better chance to access aquaculture activities than women because they are strong men and are the major labourers. Men can do most of the work in aquaculture even without support from women. In contrast, women cannot do so because they provide support to men and are responsible for only some work in aquaculture activities. Although women endure pain well and are patient they cannot work alone with the activities.

Women do collect and mixed feed better than men but they cannot steer and control the cages in flooding and typhoon conditions. They must ask men to help and steer for their fish cages. For example, a mobile woman, Mrs. Ngo Thi H. said that: *“My household has fish raising in two years, around 500 fishes (grass carps) in cages. We are couple access to fish raising but when my husband goes away, I can not steer and control everything, my husband works in mainly, I am only in relevant activities”* (household report, 2000). It illustrates that women have no biological advantage in occupying these role (Sara and Roy Clarke, 1992). Health is a factor which effects on gender role in aquaculture. Although women can adapt to work in water condition but women only use simple gears, women can not work with hard activities and control machines. That is related to skills of men and women also technical development. The men not only control machine but also select fingerlings and can up date loan resource (Farming/fishing group, table 2).

Weaknesses of men and women in aquaculture activities

Secondly, we want to focus on Weaknesses section. Both men and women in farming/fishing, fixed and mobile group get problems about capital, technique and low education.

Aquaculture fishers need a lot of money to invest for this production. In the first meeting, 6 out of 8 participants of Mobile households said they invested from 500.000 to 2 million VND; 8 out of 8 participants of fixed households invested from 2 million to 5 million VND during one growing season and 8 out of 8 participants of farming/fishing group invested from 1.5 to 3 million VND for one growing season. The investment of three groups are different depending on their ability to get money. If they have a lot money they can invest higher in aquaculture, for example they can purchase bigger fingerling, make larger and stronger cages using more bamboo and good nets, can buy a high quality boat. But those who have little money to invest buy small fingerling, make small and simple cages with little equipments and buy a boat without an engine.

In fact, the people in Trung Lang always have lack of money, they can not invest for aquaculture and that's an obstruction for aquacultural development. The fixed group, they can invest more than other groups but they only have 50% of households which have able investment, group of farming fishing have only 30%, group of mobile gear is only 5 % households can do that. The situation has impacted to their activity in aquaculture as seasonal occupation, increasing number of cage, quality of fingerlings and cage. A mobile men said that: " We haven't got o lot of money so can't buy big fingerlings, can't raise on the large area. My cage weaker than other because I invest it very low. If me cage get problems as disease or flood as the end of last year (1999) I not have anything to invest again" (Household report, 2000)

This problem relate to men and women's education in part. *"Trung Lang has a difficult socio - economic (poor infrastructure, a low education and production skills, poor knowledge ... (Lan, 1998). In the general situation, women also are group of a lowest education. "In Trung Lang village, the most of women and children have low education, 104/194 women and 56 /342 children are illiterate (they are from 6 to 17 year old), no adult women have completed secondary school, and 8 female and male children are presently attending secondary school. Lan, 1998).*

In Trung Lang, technical knowledge of fishers in aquaculture is very simple. There are 6/12 fishers men and 2/12 fishers women in the focus group discussion know how to select fingerling , 11/12 fishers men and 5/12 fishers women know how to make cage on lagoon, 4/12 fishers men and 1/12 fishers women understand about effect of environment on aquaculture activity (Information provided by men and women participants in the first meeting. They were decided by the following criteria: the kind of fingerling, age and size of fingerling, the activities of them in water, for example they swim fast or slowly) . A men fisher who said that he know about technical aquaculture told we that: " I know that if we raise fish in the dirty or hot water area they can die, and other facts I don't know". The most of them get technique from their daily experiences and they can't explain why fish sick and die. So they haven't able to improve natural conditions and can't prevention in aquaculture. Normally, when their cages fish get disease they can't rescue them, then the most fish death and they get problem about capital again.

Group of mobile gears, they have the lowest education in the village, (Hoàng Xếang - head of Trung Lang village). 70 % (of ages 11 to 70 years old) of the population are illiterate. Of the 70%, 60 % are women and 40 % are men (Table 1).

Group of farming/ fishing have a higher education than other groups but women are still lower than men. 25% of the people between ages 11 and 70 in the group are illiterate. Of those 55 % are women and 45 % are men (table 2).

In fixed group, they also have low education but a higher proportion of women are literate relative to men. 38 % of the population from 17 to 70 year old is illiterate and of those 58 % are women and 42 % are men (table 3). A woman said: *"The illiterates to do business is difficult but fish raising much more difficulties, if you can not read books, you will treat fish diseases not, even you have medicines. Illiterates will be lost all rights, because I do not know how to do and how to manage in papers, I only have signature"*. (Household's report, 2000).

Differences between men and women

Women lack capital the same men but this situation is very bad when they have a lower education than men. That not only difficult to calculate between invest and income in aquaculture but also difficult to communicate with capital resources. They can not approach new technologies which published to learn about that so the opportunities will be limited for them. That explain why the technical knowledge in aquaculture of women often lower than men in three production groups. There are 15 women headed of households in Trung Lang (Lan, 2000) but only two of them participate in aquaculture: Mrs. Tran Thi V and Tran thi L. Mrs Tran Thi V. 49 years old, illiterates and her husband died along time before. She have to take her children when they were very little. The first, she was a trader and then she made fish - coral. She had to hire laborers to respond hard works. When her sons grow up, she decide making fish coral and aquaculture. She as a specific case in the village. For her everything is not easy. She said: *"I only wait for my 3 sons and 3 daughters, they are main labourers in my family, however, I can decide capital to invest for fish raising and as a head of household to apply for land use to build my house. My ambition, how to get a land square to build a house but I am illiterate, I can not write application and to know regulations from government. I must ask head of village or head of group to help me"*.

Opportunities of men and women in aquacultural activities

Thirdly, we would like to refer to opportunities section of men and women:

In recent years, there are organizations, projects and local government also encouraged local people develop economical -household, include aquacultural developing, they have more advantages from outside in householder economy. Government has policies to stimulate coastal inhabitant access to aquaculture and conservation biological resources. They also have received supports from different organizations (NGOs and government) throughout credit projects, rural development, poverty alleviation. In beside in this, the village have more lagoon area, more than 1000 ha of fresh water area (Lan, 1997). It was using and in regulations *"individual field, common fishing"*, Thuan, (1997). As evaluation of local persons, the local feed resources are available in enrich for fish raising, they do not have more to collect feed for fish and easy, local markets are still good price. *"Fish selling is very easy and good price, we only have not enough fish to sell for buyers, we do not need to transport or remove to far and we sell immediately in locality"* (householder

interviewing report, 2000). Local person are fishing and aquaculture on Lagoon which were not managed and control by any power group. The water areas are till very large for fish raising, potentials are still available in the lagoon, possibilities could be more developed in the areas, was shown by aquacultural map of Trung Lang village. There is a woman said that: *“Fish raising is more convenient than fishing profession, both men and women. Fishing activities are only in every morning and then to take care and fed fishes. Fish feed resources are available and collected by men or women very easy and convenient. Macrophyte, green grass, tiny shrimp, green plants, bean stems and leaves...But macrophyte are enrich resources and easier to collect, In my household, I and my children can collect at the moment that’s enough for fish. Water area is wide range and no competition in feed collection. The people can design and implement in freedom and is no limited yet. We only think about capital and money or investment. Men and women can make well in aquaculture”*. (Householder interviewing report, 2000).

Differences of men and women

Men's opportunities and women's opportunities are different.

The aquacultural policies and simulations from organization and government effect to men directly and indirectly to women. Women only expect benefits from these projects through their husbands. For example, policy to support techniques to men firstly. In the mobile group, they do not have opportunities to loan capital but DOF and Tam Giang project to support breeding fish and techniques in 1998, 1999, 2000. In the training course, number of women access fewer (2/25 participants in 1998), men also response to receive materials and equipment to fish raising, men can decide use all of things in aquaculture even women do not know. In the training of aquacultural technique in 1998, Tam Giang lagoon project invited 12 women and 13 mobile men to participate in but there were 23 men and only 2 women enjoined. Even there was a men complained that why project do not invite him to learn and only his wife? How women to learn aquacultural techniques? He think that project should be invite him because his wife can not get technique. A woman said: *“I do not know how to raise and keep fish, my husband can access to training course, my husband knew better than me. He can access the course and get experiences from our neighbors. When our fish sick I can ask him to buy medicine”*, (Household report, 2000). In farming- fishing and fixed groups, the most of them do not have opportunities to learn aquacultural techniques. They only have experiences in their families but they have more potentials. Men have more opportunities to exchange and get techniques each other in village meetings neighbors. Women, they do not have opportunities because they must work in productive activities, they must finish housework, and they have not free time. They have to work hard with cooking, washing, wood collection, look after children and fed animals. Women's reproductive activities begin when they wake up, continue after fishing and extend until midnight. (Lan, 1998). They always are busy and can't learn experience and techniques. The water areas are till very large for fish raising, potentials are still available in the lagoon, possibilities could be more developed in the areas but they are only very good for couple not for widow women .

Threats of men and women in aquacultural activities:

The following discussion will focus on threats that men and women identified in the three groups.

Both men and women in Trung Lang lack capital for aquaculture activities as we mentioned in the previous section. So, in the first meeting (24 participants) had 80 % of hhs required loan capital; however, accessing capital is not easy, especially for women.

When either men or women want to borrow money to invest for production, there are three sources they can communicate with: the Quang Dien Agriculture and Rural Development Bank e.g. Support program; Elimination of Hunger and Poverty Reduction; Overcome the Effect of the 1999 Flood (only once after flooding); the Nordic Assistance for Vietnamese (NAV) (through the Quang Dien Women's Union); or some hhs can ask from private sources with a high interest rate of 3 to 5 % (Tran Ca and Nguyen Thi Ha, staffs of Quang Thai commune). However, only some programs support aquaculture i.e. Support program, Elimination of Hunger and Poverty Reduction, Overcome the Effect of the 1999 Flood. NAPV has funded projects since 1993 in animal husbandry (and supports women's activities); however, NAPV does not encourage aquaculture development (Le Thi Dang, chair of branch Trung Lang women union). With bad management, this program in animal husbandry has been cancelled.

In fact, the number of households who borrow money and number of money per one time is very small in comparison with their requirement. Only 40 farming/fishing and fixed households took a loan from the Eliminate of Hunger and Poverty Reduction program from 1996 to 2000 with 2,5 to 3 million VND per household and 0.8 % of interest. They have to payback in three years. There are 20 fixed households loan from Quang Dien Bank with 3 to 5 million VND per household and 1.05 % of interest. 8 fixed and 12 farming/fishing households loan from the Overcome effect of flood program with 1 - 5 million VND and 0.3 % of interest. But 15/ 20 households told that they used a part of this capital recourse for food and repaired their house after the flood.

Differences in men and women

The only capital resource that does not request a property pledge is from the Women's Union. Fishers who want to loan money from the bank must have a big house or Red book. Red² - book is a notebook which write the name's head of household with area of land or water they are using. The red - book received land/water use -right of farmer or fisher. If farmer or fisher have red - book they can borrow money from the Bank or transfer to other and have right of succession.

That is related to land and water use - right of men and women in Trung lang.

In Trung Lang, 39 households do not have a red - book (12/54 farming/fishing households, 24/32 mobile households and 3/22 fixed households). Of the 39 hhs without a Red book, 28 hhs are Sampan hhs (6 households in farming/fishing group, 20 households in mobile group and 2 households in fixed group) (Tran Uy, Leader of Trung Lang village). None of these hhs can access any capital resource to develop aquaculture from the bank or from project's that require the Red book³.

For the Sampans group, women and children are strongly affected by climate, not safer for their life, environmental pollution, health, and approaches to capital resources as well as welfare system. An important condition to loan money from the Bank is a red book, but

² Previously, only the male head of household's name was written in the Red Book - the document which one must produce to show ownership or title of a land / water area. However, this has changed and both women and men can now put down their names, meaning that women can also access loans from the bank. Unfortunately, not all households have included both male and female household members in the Red book.

³ Many projects require this Redbook if money is to be lent.

sampans women haven't that. Some of women are widow and they will become bad life and be limited in production as well. They haven't able to access to capital to raise fish or extent aquaculture when resources are exhausted.

The opportunities to loan money are limited by papers and steps, which they have done. A man had loan money from bank of agricultural and rural development, he said: *"money loans are very difficult and there are a lot of steps, because banking officers will come to see my house and equipment, etc, and then they will issue money. I am first time to loan but I fell very hard to loan because, I have do many things for papers, I do not have time to go many times to centre or district township"*, (householder report). For men, they can go and can do something that's required from bank but for women they can not do anything with more papers and meet more persons, who response to issue money. His wife said that: *"loans from bank are very difficult, we have to go townships in many times, day to days, we have to see many persons, we don't like it. From our village to Sia (township) to loan capital, my husband often goes there, I don't want to go, I have to do my house works"*, (householder report, 2000). One woman also said: *"Capital loans are very difficult, I have to take photo, I have to pay more and interest rate, the documents are completed, they make a lot of appointments to get money but when we come not thing. You know you can go to bank, I don't know anything about that, and I am illiterate and can not write and read. Furthermore, we have to handle red card (land-use contract). Even I don't know when we have to return money. We knew, highest level of loan that's only 2 500 000 VND, we also only loan one time because our red card was kept by bank"*, (householder report, 2000). Her husband released that *"I have to loan capital, women can not loan, they don't know how to apply, the township is so far from home, my wife don't know how to go there"*, (householder report, 2000). So the capital not only not enough to invest for production but also not due to aquacultural season time.

In some of households, there are discussions between wife and husband to loan and use capital but men have the end of decision. In many households, there are no discussions or interests from wife but husband can decide everything and they can use to their objectives in patriarchal households. In our households interview there are 4/6 couple told that they have discussion together in aquaculture, but their husband give the end decision and other couple wives did not participate in decision making. There is an obstruction to women already when the men can do everything in aquaculture, they decide all of things, and women only are following in production and children's marriages.

Women not only lack opportunities to access to capital source but also in access and control over land and water in aquaculture.

In Vietnam, law of land used indicated that: "The government issues land policies to economic organizations, people's armed units, governmental offices, socio-political organizations, households and personals to use in long-term." "For water where government can not invest, the group of households, personals, and organizations can get contract in period of 20 years." (Land law, 1993). For inheritance, rent and pledge householder heads can perform when all of mature householder members agreed (wife or husband). So the law aspects of the government not included gender distinguish, although the law issues but it is difficult to change gender division in Trung Lang where there are a lot of traditional customs, since role of different members were conducted in solidly. We released in documents of land-used of local households but all the most of names in papers and decision by men (head of

households). Many of women are not concerned in the processes even they don't know how to indicate and show contents in these documents.

The Threat from Electric Fishing

There is a threat which was recognized very clearly is electrical fishing on Quang Thai lagoon.

Since 1995 local people met this situation: " Everyday have 50 small boats and two people on the boat who use electrical gears to fishing". In 1996 a management community Ban was set up by Tam Giang lagoon project and local people to fight against that (Tuyen and Thuan, 2000). But this situation has not stopped now. Mr. Xuong - leader of village before 2000 said that:

"After management community Ban stopped their activities, many people use electrical gears again. They use electrical nets to catch and killed fish, shrimp, caridina and other aquatic products, so caridina for fish were exhausted by them. Others use electrical fishing rod to catch fish on lagoon and sometime they catch big fish in cages if they weren't protected. I am a leader of village but I can't stop them because I have my cages on lagoon, they revenge themselves on me by cutting my cages (Household Report, 2000)."

In the second meeting, Mrs. Van Thi H. told us:

" Too many people used electrical gears. I don't know exactly how many people, but I know that some of them are from Quang Loi, Trung Kieu village, the most of them are in Trung lang. They are fishers in Mobile group, Farming/ fishing group, a few people in Fixed group and the most of them are men."

Mrs. Phan Thi L. - a farming - fishing women said that:

"Electrical fishing develop very quickly, it not only effect to fishing activity but also to aquaculture. They can cut cages of aquacultural households who have bickering with them. Some people used these gears to killed fish in the cages. But they only do that in the evening or when haven't anybody around cages. So we have three uncles, we have to raise fishing depend on family relationship to protect our cages" (Household report, 2000).

But the protecting fish is very difficult for women. A woman said: "*The dishonest persons do not care when they see only women on the lagoon, they can come and threat women to take away some cages, even they still threaten us as well*" (Household's report, 2000).

The results conducted women and men are access to aquaculture but men are still more opportunities than women are. Hence, numbers of women access to aquaculture less than men in the village, women are only relevant labourers in aquaculture. The most of families are not have men, they can not invest and develop aquaculture. In Trung Lang, there is only a widow women have cage. But she have to hire people make cages, buy fingerling and protect fish in flood. When her child grow up, they can help her to respond these activities.

These research results highlight the different advantages and disadvantages that women and men have regarding aquaculture activities. Women have less advantages than men and face far more disadvantages than men in aquaculture activities.

Differences of men and women's opportunities in aquaculture in three groups:

Men and women's opportunities in aquaculture in groups are different. The SWOT's matrix show that: the Mobile group is having opportunities in aquaculture. They have number of

aquacultural households higher than other group (31/32 households compare with 15 farming/fishing households and 15 fixed households). The water area is very large with them, they have free time in the afternoon and have support from IDRC and DOF. Mobile women also have good opportunities to participate in aquaculture (There are 30 mobile women access to aquaculture compare with 15 fixed women and 17 farming/fishing women, they have free time and experiences to work on lagoon). This situation not the same in Phu Tan where mobile group did not access to aquaculture as we mentioned in literature review section. But mobile group's opportunities in Trung Lang not sustainable because the most are sampans, they haven't a house, red - book and they may be remove their life - place when they get flood and storm. If this situation not change in the next time, these threaten to destroy their opportunities which they have.

Although, numbers of men and women in fixed group are access to aquaculture fewer than mobile group but they have an essential advantage that's their family consider fishing activity as a major occupation. They have water areas and pay tax for water areas every year. Beside in this, they have more properties and land-use, their houses are good and stable, so their families can apply for many capital resources from government, NGOs and others to get capital. In last years, this group had more income from fishing activities and they can save money. They have investment by themselves around 50%, with capital from 2 - 5 millions VND and a higher other groups. (SWOT's matrix of fixed group, table 3). Women in fixed group have more leisure time in the village. They only are access from 5.00 AM to 8.00 AM (If they do not access to pushnet and eel-rake). They have all day for house works and relax. Compared with farming-fishing group, fixed women have more time to feed and take care fish raising (Biological clock, appendix). Furthermore, fixed women can adapt very well with water conditions and more experiences. In weaknesses, fixed group women also have the same, even less than other groups.

2. How to increase opportunities for men and women in aquaculture? (focus women)

Our studies, to concern on strengths, weaknesses, opportunities and threats of men and women to find a solution to help local persons to increase opportunities in aquaculture and from practical situation to build up and to develop models. The determination for solutions is organized by discussion between representatives in three groups who access to aquaculture in the village. The implementation is approved for all groups in generally, they can not design for each group individually. They also specific concerned in groups, which are lack of more opportunities in discussion process .

The determination of solutions and implementations with participatory discussions of local persons, aquacultural groups and locality, which are carried out in September, 2000 in Trung Lang. The plans were designed by women, men in three groups: Fixed, farming/fishing and mobile groups. The concerns on women group that's suffered the opportunities in aquacultural development.

- **Men group:**

- **Step 1:** Representatives of Trung Lang will discuss to Agriculture University and DOF to support for local persons in technological training course on fresh water aquaculture: fixed and farming-fishing groups in 2001.
- **Step 2:** Local representatives will recommend to organizations (Provincial department of fisheries, Environment and technologies, Hue university of Agriculture And Forestry, Hue

University of sciences and developed projects) to support for locality in techniques, capital, and materials... (2001 - 2002).

- **Step 3:** Leader of village and representative of sampans households are making recommendations to government to issue policies in land and water used, fixed residence and farming for mobile households to increase opportunities and social welfare, especially investments and capital, economic benefits.
- **Step 4:** Set up a meeting in the village (Including leader of village and Women Union, leader of three groups, local people, representatives of Commune, district to find out solutions to avoid and restrict electrical gears - used on lagoon areas. Strengthen to control and manage fishing activities on the areas.
- **Step 5:** Representatives of village will discuss with local government in order to build plans and solution in management of biological resources in the lagoon. (2001)
- **Women group:**
 - Step 1: Trung Lang Women Union and representatives of three groups will be discuss together to find capital resources for women in aquaculture. Discuss with W.U of province to find out solutions to solve problems in NAPV's credit project .
 - Step 2: Trung Lang Women Union discuss with W.U of Quang Thai to make recommendation to DOF about training courses in aquacultural techniques knowledge for 3 women groups: fixed, mobile and Farming-fishing .
 - Step 3: Representatives of women in Trung Lang will meeting of local government (village, commune and higher) to solve for sampan people to fixed farming and residence in the areas. Simultaneously help them to increase the opportunities and benefits.
 - Step 4: Trung Lang W.U will discuss with locality and persons to work out plans and solutions to control and manage the electrical gears - used on Quang Thai lagoon

5. CONCLUSION:

Aquaculture is an economic activity which is developed in Quang Thai. Both women and men (even children) participate in aquaculture which relies on gender division of labour and their biological advantage: Men buy and transport equipment and fingerlings, make cage, rake for macrophytes, feed fish and apply prophylactic and treatment, protect fish cages, and harvest fish. Women often collect, buy and process food, feed fish, apply prophylactic and treatment, harvest and sell the fish. Women not only participate in production activity but also in reproductive work and community work.

Women and men in Trung Lang have an advantageous conditions to develop aquaculture. For Strength, they have boats and other equipment from fishing activities, have working experiences on lagoon, live together and are very close; In Opportunities, they have a large lagoon area, food for fish very easy to collect, have the support from the Tam Giang Lagoon project and DoF for technique and equipment and have free time.

However, men and women also have many obstacles to their aquaculture activities. As Weaknesses, they lack capital, lack information and technical knowledge, low education, limited and difficult transportation. And among the Threats are floods, electric fishing, lack of management of lagoon resources, loan from banks are very difficult to acquire and require

many steps. 39 households (most of them sampans) can not access to capital because they have not Red book.

In the general situation, women have less access to aquaculture than men. They lack the basic advantage of health condition (*i.e.* they are not strong like men) to do the hard work and protect fish cages in floods. They also have lower technical knowledge than men because they have a lower education and have limited communication. Many women are sampans thus they have no Red book and they access capital to invest for their production. They receive the support from the Women's Union but the organization has a low position in the formal system. Support from other projects is only for men. Since women have no opportunity to access capital and aquacultural technique training, they can't derive any benefit from these projects. The traditional culture is another obstacle for women to access aquaculture. Most women aren't heads of households. They participate in a very limited manner in the decision-making process and they can't make the final decisions in the household. They are limited by gender division of labour which relies on traditional values indicating that women have to do all reproductive work so they have less free time than men to participate in aquaculture. Widowed women have nearly no opportunities to join in aquaculture when other economical activities give very low income.

Men and women's opportunities in three groups are different.

Mobile group have the largest number of aquaculture households in comparison to other groups. Their situation is not the same as the mobile group in Phu Tan. When aquaculture developed in Phu Tan, most households in mobile group had no opportunity to access aquaculture – they even had no grounds to fish (Binh, 1999). In Trung Lang, the mobile group not only fish but also develop aquaculture because they got support from the Tam Giang Lagoon Project. But if they can not maintain this opportunity by themselves when the project ends, they may have problems because this group also have many weaknesses and threats. Fixed and farming/fishing group have received less benefits from projects than the mobile group. They lack access to training in aquacultural technique and other benefits. But the fixed group have more advantages to access aquaculture than farming/ fishing. They have a lot free time while farming/fishing households are very busy with field work, specially during weeding and harvesting. They have good skills for working on the water with fish corrals and they can access capital because they have land and water while the mobile group have not.

The research revealed that aquaculture is an activity which can earn a higher income in Tam Giang lagoon. However, development is related to equality between men and women in opportunities in developing countries. As Vietnam moves from a subsidized economy to a market economy within its cultural traditional characteristics, there is an increased interest in gender equality in economics. For local people, aquaculture is a new activity which can provide them with a higher income. It is of interest to local persons as poverty alleviation and can change social structures which still remain from so long time ago in the community, among which there are gender relations. However, the research results also indicated that if an increase in economic well-being is not related to social and gender equality, the growth is not sustainable and does not alleviate poverty. The purpose can solve the problems only half of inhabitants in locality, therefore, place more burden on women while we think that the activity can improve their living conditions.

The research aims in the implementation of strategies in the area. Who had opportunities in aquacultural activities? The question has a strong relationships between men and women in

development. The results of the study indicate that women in the village do not have access to aquaculture and they also do not have benefits from aquaculture yet. They still have a lot of obstacles from outside and from themselves in accessing and controlling the activity.

To increase opportunities in aquaculture, men and women should apply their strengths in the activities, set up activities for men and women to maximize opportunity. Local people have to avoid their weakness and overcome the threats from outside their community. There needs to be more focus on women's group through many activities that would increase their knowledge about gender roles in aquaculture, aquacultural technique and increasing access to capital, water and land.

7. RECOMMENDATIONS:

1. The research results can be given us to recommend people's committee of Thua Thien - Hue province, Quang Dien district, Quang Thai commune can strengthen implementation and designation of water areas in Tam Giang lagoon. The government offices can consider and issue ownership to households in land and water used for aquaculture. The decision will be issued for both men and women in namely.
2. Recommendation to people's committee of Thua Thien - Hue province, security province department of resources, Trung Lang village focused on management of biological resources in Tam Giang lagoon that's carried out under law, permission in regulation. The policy implications can positive affected to environment, aquaculture of women and men in the areas directly.
3. Recommendation to banks, NGOs to support and issue credits to local persons convenient and easier to loan or get capital to invest for aquaculture, extended large scales and time for utilization. Priority to poor groups, women are suffer and alone.
4. Recommendation to provincial women union of Thua Thien - Hue organize workshop or seminars for women to attend in solutions of capital, self-employed women, opportunities in production and health status.
5. Recommend to lagoon project in management of biological resources, Hue University of Agriculture and Forestry, Hue University of Sciences and provincial department of fisheries. The institutions can support techniques, documents to women and men to develop aquaculture and social relations.

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8. Appendix