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Factors Influencing the Role of Women in Indonesian Fisheries Development

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FACTORS INFLUENCING THE ROLE OF WOMEN IN INDONESIAN FISHERIES DEVELOPMENT

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ABSTRACT

Gender consideration is an essential component of fishery development activities. The purpose of this thesis is to help guide planners and decision-makers who are concerned with understanding the role of women in fisheries development in general as well as in the Republic of Indonesia. Thus, it is partially based upon field research conducted in Indonesia among fishing communities which are representative of different types of fisheries. Justification for research concerning the role of women in the fisheries sector and the reasons why women should be included in development policy and planning are presented in Chapter I. The general research setting, the assumptions and delimitations of the study and operational definitions are also outlined in Chapter I. Methods and materials used to conduct research for this thesis are described in Chapter II. Women in Development (WID) literature and the body of literature focusing on women in fisheries worldwide are reviewed in Chapter III to provide a theoretical framework for the study of women in Indonesian fisheries. Chapter IV of the thesis describes the fisheries sector in Indonesia in general and then with more specific reference to the role of women in Indonesian fisheries development. Chapter V discusses research findings with a description of the sites which were visited and with an analysis of data gathered from a questionnaire. Chapter VI identifies factors influencing the role of women in Indonesian fisheries and outlines guidelines for incorporating gender considerations into fishery development activities. Strategies for enhancing the role of women in coastal communities are also presented.

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PREFACE

This study is based primarily upon eight weeks of on-site field research in the Republic of Indonesia from mid-April to mid-June 1991. The research was conducted under the auspices of the Fisheries Research and Development Project (FRDP). The project is a joint undertaking of the Government of Indonesia (GOI) and the United States Agency for International Development (USAID). One of the major objectives of this project is to create a Long Term National Fisheries Development Strategy.

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CHAPTER I

INTRODUCTION

1.1 Problem Statement

The failure to integrate women into fisheries development policy and planning may lead to detrimental effects and unintended consequences. Neglecting women in development planning has resulted in some of the following deleterious impacts (Kandiyoti 1990; Michelwait et. al. 1976; Dixon-Mueller and Anker 1988; Obbo 1985):

- decline in food production;
- the marginalization of women workers through the loss of income earning activities and opportunities;
- the concentration of women in low income occupations, and;
- overall decline in family welfare.

Stimulated by the publication of Boserup's (1970) book about women's economic and social roles around the world, researchers have examined and documented the productive roles of women in agriculture and trade more extensively. Further, national and international agencies have shown greater awareness of and concern for the impact of development planning on women's lives.

It is increasingly being recognized that the lack of data on women's participation outside of the domestic sphere and the failure to economically evaluate household work leads to their statistical invisibility or statistical underestimation (United Nations 1989). The labor of women is likely to be enumerated only if they work for wages. However, many women who harvest, process, distribute, and/or market fish and fish products are self-employed, are members of both formal and informal associations, or are part of kin-based production groups - "petty commodity producers". Thus, women are missed in the census counts of economically active populations because the monetary value of their production to the household economy (and national economy) is excluded from national accounts statistics (Dixon-Mueller and Anker 1988).

It is suggested here that attention to gender issues and women's experience in small-scale fishing communities around the world and specifically in Indonesia will reveal the differential experiences of women and men in the society. Moreover, attention to division of labor by gender and the position of women in society - particularly in the informal sector - will substantially enhance our understanding of the various fishing communities in Indonesia. Taking the male as the universal measure of economic participation or primary category of analysis of economic development will underestimate the social, economic, and political participation of women.

More than half of the Indonesian population are women so there exists a vast human resource to be effectively and productively utilized through appropriate development strategies. The majority of these people live in rural areas and their labour is often not enumerated because they do not work for wages. But family welfare in rural areas is often dependent upon informal sector activities and subsistence production. Both the income and non-income generating activities of women in general often take place on behalf of the household. Thus, much of the activity goes unaccounted for due to the 'invisible' nature of much of the work.

1.2 Significance of the Study

Research in the area of women's roles in fishery dependent communities is important for providing baseline information to people who make decisions which instigate economic, social and even environmental changes within a community, region or country. Fishery development projects are sometimes rejected or fail after implementation because social and cultural characteristics of the targeted populations have not been given serious consideration (Bailey and Jentoft 1990; Bailey, Cycon and Morris 1986; Pollnac 1988a, 1988b). Greater understanding of the complex interrelationships between the marine environment; technological adaptations; economic modes of production, processing and distribution, and socio-cultural organization in fishery dependent communities and regions

may alleviate some of the problems encountered before and after implementation of fisheries projects. Human adaptation to the aquatic environment is an interactive process involving these components which form an interlocking system. Thus, change in one component may ripple throughout the system and cause social and economic stress (Pollnac, 1985).

This study attempts to understand the complex interrelationships between components or variables influencing women's activities in the Indonesian fisheries sector. Research focusing on gender issues and the role of women in Indonesian fisheries development is one important component of the "interlocking system" described above. Very few attempts have been made to gather baseline information on women in fishing communities or to assess the impact of fishery projects on women.

Research concerning women in fisheries development would not be complete without pointing to the importance of disaggregating the population by sex when exploring the economic opportunities and social constraints of women. Babb (1990) purports that disaggregation by sex in social analysis recognizes gender as a critical organizing principle and element of social differentiation. Disaggregating data such as household income can provide information on use of income and how increases or decreases in income influence asset formation, consumption, nutritional patterns, control of income, and the distribution of labor and resources within the family. It also allows policymakers assess the impact of development programs on individual family members and on economic decision-making in the family, which can in turn impact availability of labor and food (Charleton 1984).

This thesis stipulates that the role of women in fisheries is an active one, especially in the small-scale sector. However, maintaining and enhancing the various roles will only be accomplished if fishery development policies and programs concerning women are put into practice. They must then be monitored and evaluated to determine impacts. A better understanding of the factors influencing the roles of women in the fisheries sector before project implementation will help to alleviate negative impacts.

1.3 Objective of the Study

The major objective of this research is to gather and analyze information concerning the economic roles of women in the fisheries sector of Indonesia and with this information determine how women can be integrated into fisheries development planning and policy. The knowledge generated through this research can then be used to answer specific questions regarding details of the relationship between changes in the fishery and their potential impacts on the roles and status of women in Indonesia.

This study considers women in fishing communities as active agents in social and economic change. Drawing from Babb (1990), this research seeks explanations to the following questions. What activities do women engage in and how these contribute to the maintenance of family and society? How is decision-making and control of resources allocated by sex, class and ethnic affiliation, and so on? An understanding of this kind is important before implementation of fishery development projects.

General statements concerning the role of women in the fishery overlook the great variation in women's contributions. Differing technologies and economic and social structures have varying impacts on women's activities. Small changes in these technologies and structures can sometimes make large impacts within a community or region. Thus, to achieve the major objective, this research includes the following scope of work:

- Consideration of factors influencing the role and status of women in the fisheries sector of Indonesia through evaluation of available information, interviews with Indonesian officials and collection of primary data.
- Assessment of the impacts that changes in the fisheries sector could have on the the roles and statuses of women in Indonesia.
- Preparation of recommendations and guidelines to be used by planners and decision-makers during the formulation of a Long Term National Fisheries Development Strategy for Indonesia.

1.4 General Research Setting

Field research for this study was conducted in the Republic of Indonesia. Indonesia is an archipelagic nation consisting of approximately 13,667 islands which

straddle two major oceans (the Pacific and Indian Oceans) for more than 3,000 miles east to west. The Indonesian territorial waters are comprised of a number of seas (the Java Sea, the Molucca Sea, the Flores Sea, the Banda Sea and the Arafura Sea) and important international straits (the Malacca and Makassar Straits). The territorial waters total 3.1 million km^2 and with the March 1980 declaration of an Exclusive Economic Zone (EEZ), a further 2.5 million km^2 have been added to Indonesia's maritime jurisdiction (see Figure 1) (Bailey et. al. 1987). Thus, the marine environment is a dominating physical presence and source of national income.

The Indonesian marine environment is extremely diverse and complex both physically and biologically. Given the abundance and wealth of living marine resources in this archipelagic nation it is not surprising that they provide important foreign exchange earnings to the country as well as a source of high-quality protein to domestic consumers. Further, marine fisheries also play a major role in the economy and welfare of coastal communities since the bulk of the total marine fisheries landings are landed from coastal waters by small-scale fisheries and this is important in terms of employment. Fish and fish products provide a significant source of animal protein to the diet of many Indonesians since it is the most affordable source for a majority of the population. The Indonesian fisheries sector will be described in more detail in Chapter 4.

In addition to the immensity and richness of its marine resources, Indonesia also possesses a huge supply of human resources. In 1990, the population was estimated at 183 million people and it is projected to grow to approximately 200 million by 1995 (UNDP 1990a). The majority of the population lives on the island of Java (81 % in 1982) and this is causing environmental degradation in both land and marine resources (Bailey et. al. 1987). A large concentration of fishing activity takes place along the north coast of Java in the highly productive waters of the Java Sea where 37% of all Indonesian fishermen are found (Bailey et. al. 1987). This area and other shallow inshore waters (with the exception of the coastal waters surrounding the more remote, less populated islands) are under heavy

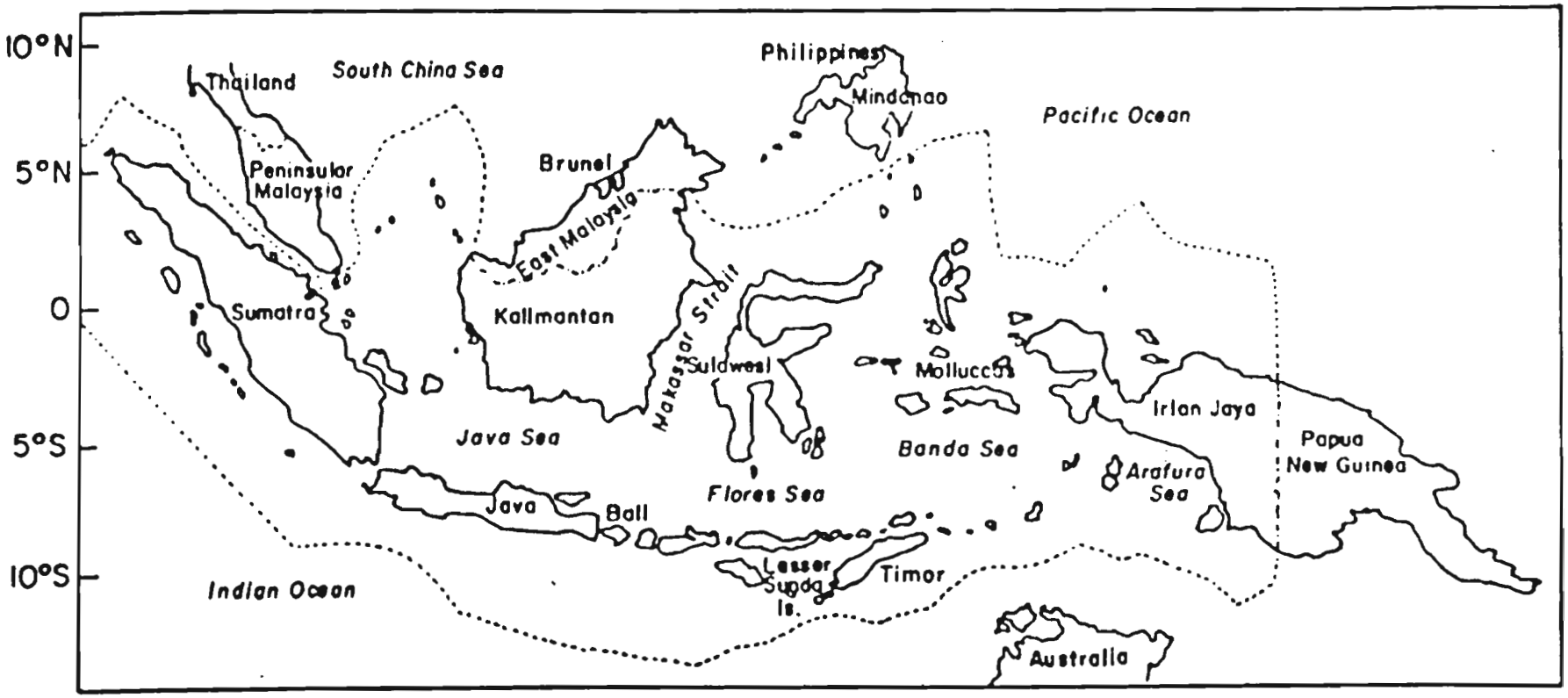

Figure 1: Map of Indonesia with Exclusive Economic Zone
Source: Bailey et. al. 1987

pressure with fishing effort greater than maximum sustainable yields (Bailey et. al. 1987). These factors, among others, necessitate careful and strategic fisheries development planning by the Government of Indonesia to ensure the sustainability of its living resources and the socio-economic welfare of the people dependent on them.

The Government 's efforts toward social and economic progress are embodied in a series of five year development plans (Repelita) that were begun in 1969. Indonesia's fifth development strategy clearly identifies national objectives which consider issues that are relevant to the fisheries sector. Repelita V (1989-1994) emphasizes the following concerns and goals:

- protection of the ecological balance in terms of sustainable development;
- participation of women in development;
- freedom of enterprise and an environment that enables entrepreneurs to perform progressively and imaginatively;
- effective handling of rapid urban development, and;
- alleviation of pervasive poverty (UNDP 1990a).

It is in this general setting that research for this thesis was carried out. Fisheries have been in the past and will continue to be in the future an important sector in the overall economic and social welfare of Indonesia. The Government of Indonesia is actively pursuing sustainable development and encourages the participation of women in the process.

1.5 Assumptions and Delimitations of the Study

The roles of women in the Indonesian fisheries sector are diverse. They reflect the variety of fisheries found throughout the archipelago. Fish and other living resources in Indonesia are produced by many different capture and culture techniques from marine, brackish water, and freshwater environments. The fisheries sector in Indonesia possesses attributes of both large-scale and small-scale production, processing techniques, distribution channels and marketing systems with both labor and capital-intensive inputs.

However, the majority of the population engaged in fishery-related activities are considered small-scale (Bailey, et. al. 1987).

The research for this study was focused primarily on the small-scale fishing communities of marine capture fisheries on Java, Bali and South Sulawesi. Keeping in mind the fact that Indonesia is a vast and diverse nation, it is not assumed that the research upon which this thesis is based is comprehensive in its scope. Rather, the fieldwork has provided the basis for an understanding of the many variables influencing the roles of women in the Indonesian fishery sector. This kind of understanding provides information that can be used by decision-makers and policy planners as they develop a Long Term National Fisheries Development Strategy. This kind of understanding is also essential to project the consequences of proposed changes in the fishery and the potential impacts on the roles and status of women.

This study does not include information from sites of freshwater aquaculture. All sites were either marine or brackish water environments and include both capture and culture fisheries. The mariculture activities consisted of tambak (shrimp) ponds, milkfish (Chanos chanos) ponds, seaweed culture and oyster culture sites. Reference is also made to a freshwater riverine fishery. In the capital city of South Sulawesi, a shrimp processing factory was visited.

Publications dealing specifically with the activities of women in fishing communities and elsewhere in the fisheries sector of Indonesia have been identified (Central Bureau of Statistics 1991; Ihromi 1987; PPSW 1987; UNDP 1990b, 1990c; Wardana and Syamsiah 1990). A small amount of sex-disaggregated baseline data does exist. It is very possible that other data and information have been overlooked during the course of this study. However, more attempts at generating information regarding the fishery-related activities of women are needed. Hopefully, this paper will catalyze more efforts since the involvement of women in the fisheries sector is vital to its development.

The research for this thesis was conducted under the auspices of the Fisheries Research and Development Project (FRDP) - funded by the United States Agency for International Development (USAID). One of the major objectives of FRDP is to formulate a National Fisheries Development Strategy for Indonesia. Including women in the strategy is required under the Guidelines of State Policy (GBHN) first established in 1978 for Repelita III (1979-1984) and later revised in Repelita IV (1984-1989) and Repelita V (1989-1994). Thus, research concerning the existing and potential role of women in Indonesian fisheries development not only ensures consistency with State Policy, it also ensures that attention be drawn to the female factor which is critical to overall development of any country.

1.6 Operational Definitions

The small-scale fishery, in particular, is highly vulnerable to change for two distinct reasons. First, the small-scale fishery is often the target of development projects around the world. Countries that are rich in fishery resources may try to increase production or maximize exploitation of their living resources through 'modernization' of the fishery. Secondly, the small-scale fishing communities in most countries are often quite poor in terms of material well-being, health and sanitary conditions. The majority of people maintain a marginal existence. Thus, even a small change in a community or region can have a large impact. Attempts by governments to develop the fishing industry have sometimes resulted in increased unemployment and worsened the living conditions and position of artisanal or small-scale fishing households (Acheson 1981).

Since the dominant focus of this thesis is the small-scale fishery, it is important to delineate an operational definition before proceeding with investigation of the role of women. According to Lindquist (1988), the small-scale fishery worldwide employs over 12 million marine fishermen and millions of other people in supporting roles. Several hundred millions of people receive high-quality protein from small-scale fisheries around

the world (Pollnac and Poggie 1991). In many areas of the world (especially in developing countries) the small-scale fishery provides the primary source of animal protein. However, what factors distinguish the small-scale fishery from the large-scale sector? Why should it be a primary concern and appropriate target for the investment of development support in many countries?

1.6.1 Small-scale fishery

Using only 1 to 2.5 million tons of fuel oil annually, the small-scale fishery worldwide provides approximately 45 percent of marine species for human consumption, while the large-scale sector consumes 14 to 19 million tons of fuel annually to catch approximately 55 percent of marine fish for human consumption (Lindquist 1988). Further, an investment of one million dollars in fishing vessels in the small-scale fishery may employ 500 to 4,000 people, while the same investment in the large-scale sector employs only 5 to 30 people (Lindquist 1988). It is evident from this data comparing the large-scale and small-scale fisheries that the most efficient investment in terms of fuel consumption and number of people employed is clearly the small-scale sector where the benefits are greater. "The development of small-scale fisheries in a sustainable manner can make an important contribution to alleviating the world-wide problems of underemployment and undernutrition" (Pollnac and Poggie 1991: 3). However, what unique characteristics differentiate the the small-scale from the large-scale sector?

Pollnac and Poggie (1991) stress that there are no exact operational definitions of the "small-scale" fisheries around the world and that it is a relative concept which exists along a continuum. This continuum ranges from the gathering of small aquatic organisms by hand in the coastal zone, use of hand lines and small gill nets from small boats and canoes near the coast, to large factory trawler ships and industrial freezer/ processing vessels on the open seas. Along the lower end of this continuum we find the small-scale sector manifesting some of the following qualitative and quantitative factors, although some may be absent in a given fishery.

The qualitative attributes of small-scale fisheries worldwide may include the following: they tend to be located in rural, relatively isolated areas near estuaries and lagoons; fishing usually does not comprise the sole form of economic production since animal rearing, horticulture and other economic activities may exist; there is usually a strong reliance upon human labor inputs with a low level of mechanical input and very basic transportation, safety and production technologies; direct human consumption of a large percentage of the living marine resources which are harvested; high post-harvest losses due to inadequate handling and processing technologies and facilities, and; harvest generally takes place close to the shore from stocks with small biomasses (Pollnac and Poggie 1991). Post-harvest production activities - distribution and marketing systems - tend to utilize low levels of technology. That is not to say, however, that they are not complex systems and do not make significant contributions to the social and economic structure of the community, region or country of which they are a part.

Quantitative attributes of the small-scale fishery are difficult to summarize. However, harvesting and processing equipment tend to be low in terms of relative technological complexity and small in size. Small-scale fishing vessels are often made from wood and are generally less than seven to eight meters long, with the maximum length extending to no more than 18 meters (Pollnac and Poggie 1991). As wood products become more scarce due to deforestation in many countries, vessels may be constructed of aluminum or fiberglass. The vessels may have small cabins but many are open. Many boats found in the small-scale fishery are powered by human or wind energy, although the use of motors is not uncommon. The motors are generally outboard with less than 25 horsepower and a maximum of 50 horsepower (Pollnac and Poggie 1991). This type of information is intended to provide a physical framework or basis within which to place the small-scale fishery. It is necessary to remember that the scale of the fishery is a continuum in the real world and it manifests various quantitative and qualitative attributes.

1.6.2 Petty commodity production

Russell and Poopetch (1990) assert that assessing the fishery in technological terms - according to scale or size and type of technology - ignores the crucial differences between family firms and non-family firms. Borrowing a term from economic anthropology, "petty commodity production" will be used in this study to describe not only the economic, but also the social means of access to production that is found among people in many fishing communities. Kin-based family firms within capitalistic economies are known as "petty commodity producers". The labor arrangement may include various degrees of wage labor, however, family labor is an essential feature of petty commodity enterprises. The terminology "petty commodity fishermen" may describe a more socially and economically accurate category than "small-scale fishermen". As will be seen in this study, "small-scale" fisheries tend to be based on family firms with kin-based workgroups, although there are exceptions (Pollnac and Poggie 1991). The kin-based forms of production in capitalist fishing communities generally allow for maximization of profit within the family.

1.6.3 Informal sector

The use of such terms as "large-scale" and "small-scale" are figurative and do not provide much insight into social and economic relationships. A greater understanding of these relationships in terms of the informal sector may help explain why a given fisheries sector is small-scale. The informal sector is characterized by a way of doing things which may include some or all of the following attributes:

- ease of entry;
- reliance on indigenous resources;
- family ownership of enterprises;
- small scale of operation;
- labor-intensive and adapted technology;
- skills acquired outside of the formal school system, and;
- unregulated and competitive markets (Meier 1989).

It follows that the "formal sector" characteristics are the opposite of these qualities. The formal sector often has a strong reliance on overseas resources by enterprises which are corporately owned, capital-intensive, and operate on a large-scale in markets protected

by tariffs, quotas and trade licenses. There exist complex linkages and dependent relationships between the two sectors.

Enterprises and individuals in the informal sector operate largely outside of the system of government benefits and regulations, and often have no access to formal credit institutions. This does not mean, however, that the economic and social contributions of the informal economy are not significant:

> The informal economy is not a set of survival activities performed by destitute people on the margins of society. Studies in both advanced industrial and less developed countries have shown the economic dynamism of unregulated income-generating activities and the relatively high level of income of many informal entrepreneurs, sometimes above the level of workers in the formal economy.
> (Castells and Portes 1989: 12)

Another feature of the informal sector that is evident in small-scale fishing communities is the primacy of risk and uncertainty. The small-scale operator or entrepreneur faces losses that are proportionately larger than those which can be borne by the wealthy operator. This is particularly true when the operator does not have access to institutionalized sources of credit. Thus, in order to protect oneself against risk, the small-scale producer often establishes semi-permanent relations with suppliers and buyers. Further, the small-scale operator may be more reluctant to innovate or accept changes because the impact of failure will be greater for those with low incomes. In general, in the informal sector the return to labor, whether or not in the form of wages, is largely determined by the forces of supply and demand (Meier 1989). Evidence of pricing set on an individual basis and controlled only by supply and demand was found in Tombo fishing village, Sierra Leone (Kotnik 1982). In some cases fish trading women form marketing organizations to stabilize prices and prevent the market from being flooded.

In review of the operational definitions, the small-scale fishery worldwide has been characterized in terms of both quantitative and qualitative attributes. It has been stressed that the relative scale of a fishery lies along a continuum and the small-scale fishery lies at the lower end. If the technological, economic and socio-cultural aspects of a fishery

manifest a cluster of the attributes that have been presented, then it can be considered small-scale. Further, the social and economic relationships in many small-scale fisheries worldwide are defined under two general concepts - "petty commodity production" and the "informal sector" of the overall economy. Some of these concepts and terms will be referred to in this thesis as the factors influencing the roles and status of women in the Indonesian fisheries sector are investigated.

1.7 Summary

This chapter has provided a general background for the main focus of this thesis which is the role of women in the Indonesian fisheries sector. The research problem and justification for the study have been presented. The Indonesian setting was described in a general manner to give a feeling for the immensity of its' marine geography and diversity of marine resources. It was pointed out that gender analysis in the context of Indonesian fisheries reflects the variety of this archipelagic nation. Further, an effort has been made to examine and explain some of the relevant concepts which will be referred to later in the text. The next chapter will describe the methods and materials used for the research and introduce the specific research sites.

CHAPTER II

METHODS AND MATERIALS

2.1 Data Collection

The information gathered for this thesis was collected in both the University setting and "in the field". The first phase of this endeavor took place in the library where literature of relevance was reviewed. Of course, literature review has been an ongoing process from the outset. However, the majority of information not pertaining specifically to Indonesia was gathered for approximately a full year prior to the fieldwork. The International Center for Marine Resource Development's (ICMRD) library was used extensively during this period. Much of the "grey" literature found there is not easily available and perhaps for this reason not widely utilized. The main library at The University of Rhode Island was also a source of information.

This thesis is also based upon information collected at various locations in Indonesia during April 18, 1991 to June 15, 1991. Field research, including observations, semi-structured and unstructured interviews, was conducted in and around fishing communities that are representative of different types of fisheries. Some of the locations covered include:

> Muara Angke and Muara Karang, North Jakarta; Labuan Market,West Java; Sidamukti Village, West Java, Pulau Untung Jawa; Pelabuhan Ratu, West Java; Panimbang Village, West Java; Kedonganan, Bali; Cisolok, West Java; Cigarondong Village, West Java; Tamanjaya, West Java; Ujung Pandang, South Sulawesi; Barru, S. Sulawesi; Takalar, S. Sulawesi; Pangkep, S. Sulawesi; Cirebon and Indramayu, West Java.

Research institutes, non-governmental organizations (NGOs), government agencies, the United Nations Development Project office (UNDP), markets, fish auction sites, landing sites, production centers, processing facilities and the homes of fishing families were visited during the course of the study. The information for the thesis includes both primary and secondary data. A questionnaire was administered to forty-five

respondents at different sites in South Sulawesi, North Jakarta and the north coast of West Java (see Appendix II).

An attempt was made to maximize the number of sites visited in the given time period to increase the variability of the study. Due to the exploratory nature of this research in Indonesia it seemed appropriate to use some theoretical considerations from Women in Development literature and from research conducted on women in fisheries worldwide. In this sense a deductive approach (deriving hypotheses from theory) has been used to some extent, however, there is no empirical testing of hypotheses. A strong emphasis on the inductive approach (detailing observations and phenomena in order to develop hypotheses) seemed more appropriate to this study because of time and cost limitations. Hopefully, this research provides the groundwork for further studies and the formulation of hypotheses regarding women's role in Indonesian fisheries.

In Indonesia, research was always conducted with a counterpart. Working closely with one person for the full duration of time in the field allowed for the establishment of a close rapport and understanding of what was expected. The latter part of the fieldwork was probably more effective since it is only natural to learn from experience, especially a shared experience. The counterpart who assisted with research is a social scientist working for the Research Institute for Marine Fisheries in Muara Baru, North Jakarta. Her knowledge of the socio-economic situation of many of the small-scale fishing communities in Indonesia and past experience with foreign researchers was beneficial to the outcome of this study. Three researchers were also hired as assistants - two from the Research Institute for Coastal Aquaculture at Maros, South Sulawesi and one from the Research Institute for Marine Fisheries, Muara Baru, North Jakarta. This was done to facilitate use of the questionnaires, and all three assistants had prior training in research methods and were experienced in this type of work. The assistants were especially helpful in South Sulawesi since the dialects being spoken were not Bahasa Indonesia and my counterpart had some difficulty understanding the language that was spoken.

An effort was made to adhere to Indonesian government protocol whenever visiting a site or office. Before asking many detailed questions or using the questionnaire, a visit was made to the appropriate fisheries office in order to gain permission. This meant that a visit had to be made to the District Fisheries office and a letter of introduction was always presented stating that research was being conducted on the role of women in Indonesian fisheries as part of the Fisheries Research and Development Project under the Central Research Institute for Fisheries. The response was always favorable and usually another letter of introduction was produced for presentation to the Sub-District Fisheries office. After making the necessary but sometimes lengthy courtesy calls, a visit to the field (ie. fish market, auction hall, landing site, processing area, etc.) was then possible. At the village level, it was necessary to make contact with the local community leader or the Kepala Desa. Oftentimes this person was not present, but when they were able to spend some time answering questions they usually provided some of the key information. Since this research focused on women, it was often the wife of the local community leader who provided information.

2.2 Sample

Some of the data for this study is based upon a questionnaire administered to 45 respondents living in fishing villages or working in fishery-related activities on the islands of Java and South Sulawesi. The sample from Java was drawn from Muara Angke, North Jakarta (20 respondents); from Cirebon and Indramayu, north coast of West Java (10 respondents), and; from South Sulawesi (15 respondents). The women who were interviewed on South Sulawesi live in both the capital city of Ujung Pandang (6 respondents) and in the rural coastal areas (9 respondents). In order to locate our respondents, we would gather information from the regional and local fisheries office on the sites where women are actively involved in fishery-related activities. We would then

travel to some of these areas and visit the homes of village leaders and their neighbors. Our contacts were made from officials at various levels and offices.

The data from the sample was then analyzed by isolating groups of variables and comparing them in contingency tables. The variables were considered important on the basis of their relevance to the theoretical considerations developed in the literature review. Guidelines for assessing the role of women in the fishery were developed prior to conducting the field research and these were also used during data collection (see Appendix III).

2.3 Limitations: Validity and Reliability of Data

The vastness of the region covered, the time constraints, the unavailability of lists or records of women's activities in coastal areas, and the exploratory nature of the research made it difficult to obtain a truly random sample. However, the sampling was not entirely opportunistic since both formal and informal contacts were used. Sites were visited and interviews conducted on the basis of information, such as areas which are known to have important concentrations of fishery-related women's activities. These sampling procedures do not allow me to claim that the data is representative of all women in the fishery of Indonesia or even that of Java and/or South Sulawesi. Gathering such information would require a great expenditure of time and money. However, the data collected does contain information of value to planners and the interrelationships among variables in the data and information collected may be used to stimulate more research and theory building.

The focus of the next chapter is on literature which will help in understanding the factors influencing the role and status of women in fisheries and how women can be effectively incorporated into fisheries development plans and programs. Women in Development literature provides a theoretical basis for the analysis of research findings in later chapters. Detailed descriptions of women in fisheries in other areas of the world reveal the cross-cultural variability as well as cultural universals.

CHAPTER III

WOMEN, FISHERIES AND DEVELOPMENT

3.1 Women in Development

3.1.1 Background

Two decades have passed since Boserup (1970) published a pioneering book which provided an overview of women's role in the development process. The book titled, Women's Role in Economic Development, has been referred to and quoted in many works on the subject of women in development since that time. Although criticized for lacking a clearly defined theoretical framework, for basing a model of development on capitalist economies, and for concentrating on the productive roles of women outside of the household (Beneria and Sen 1986), the book provided a comprehensive and vital overview of the role played by women in the economies of nearly all underdeveloped or developing countries.

Boserup's book emphasizes some points that are relevant to this study. First, the 'dubious generalization' that men provide the food throughout the world is unwarranted. Her study illuminates the fundamental role of women in agriculture, particularly in Africa and Asia. Second, Boserup points to the negative effects that colonialism and the penetration of capitalism into subsistence economies have had on women. European rule contributed to the loss of status for African women in the agricultural sector. As a result of extension work and technical education, men were taught modern methods to generate cash crops, while women's cultivation of food crops received no government support or research activities. "Moreover, men can use part of their earnings from cash crops to invest in the improvement of their production, while women who produce food crops for family use have no cash income for improving their farming techniques." (Boserup 1970: 56) A third important point that Boserup makes in her book is that the role of women is often underreported and underestimated in statistics on production and labor-force participation.

Thus, addressing this issue is essential to a proper understanding of women's participation in economic life.

The body of knowledge that has dominated development theory since the Second World War has been centered around technology and industrialization. Economic growth measured in monetary terms of a cash-based economy and achieved through advanced technologies and industrialization has been the most prevalent paradigm in development theory. One problem with this kind of 'development model' is that it overlooks much of the non-market work of women which keeps societies going and the informal exchange of goods and services which are sometimes dominated by female activities.

The concept of the 'informal sector' introduced in the previous section describes this kind of economic activity which is often undertaken by women yet overlooked by international agencies, government officials, policy-makers and other decision-makers. The productive activities of women are often labor rather than capital-intensive. Nevertheless, the activities are integrated into the capitalist mode of production or the 'formal sector' through complex linkages and dependent relationships.

Social and economic statistics tend to distort facts concerning women's productive activities and undercount women in the process. For example, the *World Handbook of Political and Social Indicators* disclose wealth only as it enters an urban, money economy. Also, per capita gross national product (GNP) and other national figures fail to show the informal exchange of goods and services which are often dominated by women and other productive activities of women in nonindustrialized societies (Charleton 1984).

> There is one major distorting device operating on all data collection concerning women, above and beyond interpretation differences and collection facilities. This is a set of cultural assumptions about the secondary importance of anything women do; it produces underregistration of women from birth to death, and the underenumeration of women in employment, independently of other forces that also create undercounting of populations in general (in Charleton 1984: 40).

3.1.2 Theoretical Overview

Anthropological literature focusing on women's roles in production and female status have shown that it is a function of significant participation in subsistence activities (but not the only function) which is, in turn, a function of the type of environment (Sanday 1973). In this study, the type of environment is the marine environment where fishery related activities are taking place. However, much of the literature concerning theories of female status and the role of women in economic development focus on modes of production requiring land use such as agricultural production. An attempt will be made to draw on some of the major ideas developed in previous literature and relate them to the marine environment and the modes of production that are unique to it.

Sanday (1973) asserts that certain conditions favor female participation in subsistence activities. These are:

- a mix between population density and natural environment favoring a certain type of land use; *and/or*
- the absence of males who are occupied in warfare activities or in other activities which require their absence for significant periods of time.

The first condition can be applied to many coastal areas where population densities tend to be relatively large due to long term continuous productivity of the resources, along with the high protein value of food obtained from the environment. In terms of agricultural production, it has been argued by Boserup (1970) that intensification of productive systems of land use is due to increasing population pressures and that this intensification requires different technologies which result in greater contribution of men to subsistence. Thus, the status of women is higher in societies depending on more extensive technologies than in the more intensive systems of agricultural production.

Although there may not be an obvious relationship between agricultural production and fishery related productive activities because of inherent differences in the modes of production, it is worthwhile to keep this first condition in mind when looking at various fishery dependent societies. Agriculture requires cultivation of a product over a certain

period of time (which may directly involve women), and fishing requires the hunting and gathering of a product or resource (which more often than not excludes women except for the gathering aspect). Mariculture, the farming or husbandry of aquatic marine organisms, may be a more valid comparison with agricultural production. The main point, however, is that ecological or environmental factors influence population densities and vice versa. Further, the natural environment favors certain types of productive activities which influence social organization.

The second condition (the absence of males for significant periods of time) seems more relevant to the discussion of women's role and status in this study. In fishing communities the fishermen are away from home for varying periods of time and this is a significant variable influencing the relative status of women. Generally, men fish and women perform onshore work and in some cases inshore fishing. The relative removal of men from land based activities while fishing results in increased independence for women and they may perform some jobs that are usually performed by men in general (Danowski 1980; Pollnac 1988a).

Further, due to the constraints of the workplace on a fishing vessel, there is no room for unproductive hands and people that get in the way such as children (Pollnac 1988a). The hazardous nature of the occupation is magnified by the inherent nature of the workplace or limited space on a vessel. This aspect requires a highly coordinated, interdependent, hard working team where all onboard have a role in the productive activity (Pollnac 1988a). Therefore, since women generally take care of small children the result is a division of labor by sex in fishing communities, where women attend to the demands of child rearing and men are absent during periods of fishing.

The aspect of division of labor by sex is also influenced by the short-term, unpredictable variability or periodicity of the resource which influences the fishermen's work (Pollnac 1985). Since their work schedules are generally inconsistent it becomes

crucial for women to take over or maintain a sense of consistency in activities necessary for day to day living (cooking, cleaning, childcare, bill paying, etc.).

The importance of female productive behavior and its correlation with female status has been emphasized by anthropologists as well as various writers and philosophers. Sanday (1988: 133) writes that "women exercise economic and political power in the majority of foraging societies. In gathering and fishing societies especially, women wield secular power". Boserup (1970) stressed gender as the basic factor in the division of labor and emphasized the fundamental role of women in agricultural production in some areas of the developing world. Engels (in Sacks 1974: 207) bases an analysis of women's status on materialist theory by examining women's position as altering from society to society, or epoch to epoch, according to economic and productive factors. According to Marx (in Sanday 1973: 1685), the status of women will increase or an equalization of the sexes will occur where women participate in productive work of society. Finally, in a book by Simone de Beauvoir (1968), the author states that one of the factors influencing women's condition is the sharing of productive labor.

Charleton (1984) provides further insight into the linkage between the productivity of women and their status in the community:

> A number of scholars have argued that the greater the involvement of women in the nondomestic, or public, sphere, the greater their status in their culture and the greater their influence in community matters. This linkage between the nondomestic functions performed by women, cultural norms, and ultimately, status and influence has often been characterized as a private/public dichotomy or paradigm. The linkage relies on two arguments: One, women's lives have always been defined by dual activities - reproductive and productive - but male activity is productive only, and two, there is a direct relationship between the ability of women to define themselves by nonreproductive labor and their broader social status and influence (p. 25).

Since the focus of this research is not only on the various roles of women in small-scale fisheries but also on their status, there must be a way to measure this somewhat ambiguous concept. Sanday (1973) identifies four measures of female status:

- Female control over produce;

- External and internal demand or value placed on female produce;
- Female participation in at least some political activities, and;
- Female solidarity groups devoted to female political or economic interests.

Using these measures, Sanday (1973) analyzed societies from Murdock's *Ethnographic Atlas*. She found that there was no positive correlation between female contribution to subsistence and female status because in societies where there is a high female status, women contributed 30 percent to subsistence. However, in societies where women contribute as much as 75 percent to subsistence she found low female status. Therefore, the data suggests that contribution to production is a *necessary* but not a *sufficient* condition for high female status. The presence of one or more of the measures (ie. control over produce, demand for produce, and participation in political activities) is also necessary for high female status.

Another point that Sanday (1973) makes in her paper is that female power is likely to exist where females are actively engaged in producing valued market goods in competitive market societies. Female fishsellers are active in many fishing communities, especially in West Africa, and this particular role is deemed significant and gives the women a certain amount of power in terms of autonomy and independence within the structural constraints of the total economy. In many of these fishing communities, women are active in female solidarity groups devoted to female political or economic interests.

Informal power expressed through female solidarity groups or economic interests may be considerably more significant than the formal privileges that are usually maintained by men (Rogers 1978). Market women or female fishsellers are in frequent contact with each other and may develop meaningful gender-based solidarity. In market centers they are often in advantageous positions for control of information dissemination and "have access to communication with non-local potential patrons vis-a-vis the State." (Rogers 1978: 150) Because of their frequent and close contacts with people in the community, market women in general and female fishsellers in particular are in a good position to be cognizant of village needs and assist in the accomplishment of individual and community goals. In

societies where these nonformal solidarity groups are well defined, the relative status of females is apt to be high.

3.2 Review of Women in Fisheries Worldwide

3.2.1 General

Many studies have identified and documented the role of women in food production and the food economy along with the important role they play in marketing and trading systems around the world (e.g., Boserup 1970; Boulding 1977; Charlton 1984; Gladwin 1970; Heyzer 1986; Lewis 1976; Robertson 1974, 1976). Indeed, the significant role of women in fishing communities has recently generated a fair amount of interest (Anbarasan 1985; Chapman 1987; Drewes 1982; FAO 1987a, 1987b, 1988a, 1988b; Gulati 1984; Hall-Arber 1988; Kotnik 1982; Naga 1989; Pollnac 1984, 1988a, 1988b; Pomeroy 1987; Schoeffel 1984; United Nations 1984, and; Yater 1982). In the fishing industry, women are often directly involved in the processing and marketing of fish and fish products. In some instances, though, they participate in harvesting operations. Most often these activities take place along the coast where small children can accompany the women during collection of shellfish and other small aquatic organisms (Pollnac 1988b).

The 'middlemen' in many rural fishing communities may be women (often wives of fishermen) and through their economic activities women may achieve a certain degree of both social and economic independence. This is especially true in small-scale fishing communities where job opportunities are usually very limited and the levels of education tend to be low. Involvement in fish processing, marketing and distribution can be viewed as an economic opportunity for those women who possess a high degree of motivation and economic acumen, as well as being an important contribution to a community and/or a geographical region. The marketing, processing and distribution of fish is a very important function because fish is a highly perishable product and must be dried, smoked or frozen if not sold immediately.

A major emphasis of Boserup's book is on the division of labor by gender that is prevalent across countries and regions. This phenomenon is also consistently found in small-scale fishing communities around the world as well as in Indonesia. Pollnac (1988a) asserts that the division of labor by sex is a consequence of the interaction between the physical environment, technology and social organization. The uncertainty of the resource or lack of control over it requires that crew members on a boat be highly coordinated, interdependent and hard working, especially when the vessel is capturing fish. Also, the limited workspace on a vessel requires that all onboard play a significant role in productive activities. Since there is no room for unproductive people, this excludes small children from the vessel. Since females are usually responsible for childcare in most areas of the world they are excluded from fishing from a boat.

This does not mean, however, that women do not fish at all or that if perchance women they do fish their catch makes an insignificant contribution to household consumption (cf. Pollnac 1988a). Schoeffel (1984) and Chapman (1987) report the significant contributions women make to the subsistence diet in various areas of Oceania. Other researchers have documented female fishing activities - collecting shellfish, reef gleaning, use of hand lines, nets, canoes, small boats, fish poison, fish traps, diving for oysters, and commercial fishing - in diverse regions of the world. These areas include; the Solomon islands, Kelantan of Malaysia (Firth 1984); Kiribati (Ifeka 1989); the United States (Kaplan 1988); the Philippines (McManus 1989); the north coast of Australia (Meehan 1977), and; Labrador, southern Brittany, northwest Spain, Japan, Norway, Northern Ireland (Thompson 1985).

Further, data published by Murdock and Provost (1973) pertaining to the sex allocation of 50 technological activities in 158 societies indicate that females are exclusively or predominately responsible for shellfishing and collecting other small aquatic organisms along the intertidal zone in 71 percent of the societies in their sample (in Pollnac 1988a).

3.2.2 West African Fisheries

Traditionally, women in West African societies have played active economic, social and political roles outside of the domestic household, and in some state systems they held a variety of institutionalized positions of formal authority (Rogers 1978). This is also true in fishing communities in West Africa, where women are heavily involved with what is typically considered a specifically male occupation. In many coastal communities women can be seen in the shallow waters capturing and collecting fish using traps and baskets (United Nations 1989).

Women in many African societies have in the past and still do take pride in their productive activities because of the status attached to food production (Charlton 1984). Changes that affect women's activities may undermine female status and as well as food supplies.

Fish and fish products play a major role in the economy and diet of coastal West Africa. Fish products are a major source of protein food, particularly in Ghana where they comprise fifty percent of animal protein consumption (FAO 1988a). In addition to providing subsistence, the sea also provides employment. According to a United Nations study (1984), for every ten artisanal fishermen in coastal West Africa, twenty to thirty other persons are employed in fish processing, transporting and marketing, and many of these people are women. "From individual women who buy and sell small lots of fish and shellfish to entrepreneurs who own large fishing vessels, the fisherwomen of Ghana form an integral part of the country's economy, providing much needed protein in all regions" (Randall 1985). In Ghana, a major source of employment for women is processing and marketing fish. A recent United Nations (1990) survey estimates that women process and distribute from 60 to 90 per cent of both farm and marine produce in Ghana and that they are becoming involved in industrial fisheries.

The Fanti women of the southwestern quadrant of Ghana are heavily involved with fishery related activities. Their situation provides an excellent example of some of the

interplay among variables such as technology (types of boats, nets, motorization), social organization (division of labor), ecology (variability of the resource) and ideology or belief systems (matrilineality) along with the effects of social and economic changes over time.

The fishery of Ghana has undergone changes, especially over the last forty years, and the result of technological, economic and social transformations has been the movement of women from marketing and processing positions into the prominent role of financier of fishing and fishing equipment (Christensen 1977, 1982; Gladwin 1970; Pollnac 1988b). Researchers have documented this crucial role played by women in the economy of some fishing societies in West Africa and note that this is particularly important in areas where men are removed from land based society for extended periods of time (Christensen 1982; Pollnac 1988b). Further, males may only fish intermittently due to the variability of the resource or seasonal fluctutations in fish populations (Pollnac 1985). Thus, through their contributions women maintain or perpetuate the economic and social cohesion and stability in these communities.

Various technological, ecological and economic changes have increased the economic role of women. Actually, the women may be seen as a buffer system - adapting to changes and allowing for the perpetuation of a relatively stable social and economic environment (at least this was the case in the early 1980's):

> The interdependence of sex roles is an important aspect of the Fanti fishing industry. The fact that the women market the fish, and equally important, cure the surplus fish for later sale, makes it possible to dispose of a large catch that could not be absorbed in the local markets as fresh fish. The economic acumen of some of these market women has moved them into roles as entrepreneurs. Not only do they and/or their associates share the catch of one or more canoes, but they also finance a significant percentage of the catching gear. Without these women, the system would not work (Christensen 1982: 226).

The costs of equipping larger boats with motors and nets has increased dramatically and this has resulted in an expansion of entrepreneurial activities among some women from marketing, trading and processing of fish to ownership of equipment and lending money to

fishermen. Women who lend money not only receive a high rate of interest at 50 percent but also a share of the catch that has been allocated to the equipment owned by the female financier. Thus, this system has allowed for some Fanti women to become relatively wealthy by local standards or at least become economically independent.

In 1961, Christensen wrote that women in Fanti Society had a relatively high status compared to many other matrilineal societies in East Africa and in comparison to most, if not all, patrilineal groups in sub-Saharan Africa. Matrilineal societies trace their descent group through the female. Thus, every member of a family is born into and remains a member of his or her mother's family. Some functions of matrilineality or unilineal descent groups may be regulation of marriage through exogamy (marrying outside of the group to which one belongs), mutual aid, and the control and use of land or other economically valuable property (Taylor 1969).

Thus, the economic independence and relatively high status of women among the Fanti of Ghana may be perpetuated through a system of social reproduction - matrilineality. Indeed, Christensen notes that the independence of females is supported by a variety of factors in customary law among the Fanti. Some of these are seen in the relationships between husband and wife. Women have obligations to their clans and oftentimes are the sole provider for the family, especially if they are married to fishermen and it is the slack season. Also, in the fishing community divorce is common. For these reasons a Fanti wife has a need for some independent income. Christensen (1961) observed that there appeared to be an increase in divorce (possibly due to rapid social and economic change) and a decrease in the payment in bridewealth. A union without bridewealth gives the wife greater freedom of movement. In this matrilineal society, should the marriage dissolve, the Fanti female may call on her brothers for support and the clan is expected to provide her and the children with housing (Christensen 1982).

The role of Fanti women in the economy is a major factor contributing to their relatively independent position. In a quarter of a century, the role of women in the sale of

the catch has changed very little. The changes, however, acknowledged by Christensen (1982) may be summarized in the following way:

- increased catches due to more effective technology, so that women are more likely to smoke fish and travel inland with it because of better lines for communication and travel;
- entire catches of a crew are now turned over to one middlewomen, who may be the wife or kinsperson of an equipment owner or an owner herself, and the fisherman and his wife are not a discrete economic unit as they once were.

Further, the agreement between the middlewomen and the crew usually involves more than simply the buying of fish. Due to the increased cost of equipment accompanied by the introduction of motor power and the difficulty of obtaining bank loans for fishermen, some of the women involved in fish trade have become moneylenders at the traditional rate of interest of 50 percent. This may reflect the fact that the patterns of capital formation and distribution in West Africa have been profoundly effected by the matrilineal organization that is characteristic of the Fanti culture (along with other areas of West Africa) (Maiolo 1982). For example, a fisherman will often turn to his matrilineal clan for financial assistance or to the woman who markets his fish who may also be related to him in some way (Christensen 1982).

A government-sponsored aid program that failed miserably in Ghana provides a good example of how aid programs may not succeed if the sociocultural aspects of a fishery are not taken into consideration before they are introduced. The Agriculture Development Bank made low interest loans to fishermen at one time because it was thought that increased mechanization of the industry was a way to increase productivity and decrease reliance upon food imports. However, many of the fishermen were unable to make their payments and it was reported that some did not even intend to meet their payments. At the same time the indigenous lending pattern at the 50 percent interest rate continued to operate.

One reason for the failure of the government aid program may be that there is more to a relationship between moneylender and borrower in Fanti culture than pure economic obligation. There also exists a social obligation. Christensen (1982) writes that the transaction between people is always witnessed, as well as the repayments. If the person who borrowed money should die or not be able to pay back the loan, the responsibility falls upon kinsmen of the recipient and if they do not repay the loan their good name is at stake. The transaction between a bank and a person is more formalized with a promissory note. This piece of paper does not carry with it the same moral pressure and obligation like that of reputation among community members and ability to live together harmoniously. In the case of government loans, members of the fishing community sometimes did not cooperate when government agents came to repossess a motor after default on payment and at times the agents could not even locate the borrower. It may be that these government agents were seen as outsiders.

A second reason for the success of local moneylenders at high rates of interest among the women involved in fish marketing is that the working relationship between a woman and a crew usually involves more than buying the fish. Crew members often receive various kinds of financial aid from the woman who buys their fish. They may borrow money when the weather is bad and/or the catch is poor for motor repairs and for gasoline and oil. These other types of loans may not require interest and payment might be in fish (Christensen 1982). Further, the women are in contact with the fishermen most of the time, if not every day. They know where she lives and she knows where they live. Thus, the relationship that develops over time is more personal than that of a bank and borrower.

Robertson (1976) studied socioeconomic change in an urban setting among the Ga women of Ussher Town, Central Accra, Ghana. The Ga are a relatively small, concentrated group of coastal people living in an area of heavy trade. Like other women in West Africa, Ga women have been involved in the trade of fish and vegetables for a very

long time, along with small luxury items after European contact. Since urbanization has brought about many social and economic changes among the Ga, it is interesting to note what changes have taken place in Ga women's socioeconomic roles.

Robertson (1976: 117) states that the changes have allowed women to become more economically independent but that they are not able to make a success of the independence. This is because men are bringing in salaries and their illiterate wives may not be aware of the market value of their skills. This sometimes prompts men to hide the size of income from their wives. Further, the women must rely on capital from their husbands in the form of loans for their business enterprises:

> When cooperation between spouses was the rule rather than the exception, it was often the women who handled the money end of transactions. In the fish and vegetable trades, where cooperation was the most common, the women sold the goods for cash, of which they then returned a portion to the men (the cost price)" (Robertson:1976: 121).

Thus, it can be said that although the urban Ga women have a certain degree of economic independence, it did not necessarily improve their socio-economic status because they have not profited significantly from the change.

In fact, compared to their predecessors the economic position of women involved in trade (especially fish) has deteriorated. Due to greater mechanization within the fishing industry and the establishment of the State Fishing Corporation, the supply conditions are increasingly monopolistic and this eliminates the traditional enterprises carried on by women (Robertson 1976). Thus, economic independence for women has resulted in decreased economic status with the advent of mechanization or modernization in the fishing industry.

Ghanaian fishermen are highly migratory and it is the Fanti in particular that can be found regularly in seven countries (Pollnac 1988b). Sometimes the wives accompany the fishermen when they migrate (Pollnac 1988b), and this is the case with the Fanti fishermen in Liberia. Fanti fishermen who migrate to Liberia to fish generally do so under a "company" or family-style cooperative that has been formed in Ghana (Akerele 1979;

Christensen 1982). The company may consist of about twenty adult males, young male apprentices and approximately eight to ten wives of the adult males (Christensen 1982). Each member has a certain percentage of shares in the company. Fish are sold at the beach where they are landed and women smoke the fish that are not sold at the beach to sell them later.

Generally, the same pattern of interdependence of sex roles exists among Ghanaian fishing communities that have migrated to Liberia. One advantage that the Ghanaian market women in Liberia have over their counterparts in Ghana is that in addition to the profit made by the sale of fish, they also have a one-third share in company profits. Also, there is less competition since the Kru (the autochthonous Liberian fishermen) have never adopted the superior techniques used by the Fanti fishermen (Akerele 1979; Christensen 1982).

In Liberia, the local small-scale fishermen (the Kru and Grebo) generally practice subsistence fishing and do not depend solely on fishing for their livelihood. Women only take fish for marketing purposes in the artisanal fishery when they catch more than they need (Akerele 1979). It is in the industrial fisheries sector, however, where women have played a vital role in the so-called "Madam Comfort system" or "mammy" system - which began a method of planned and organized distribution involving "fishmammies" around 1960-62 (Akerele 1979). Women occupy important roles in both production and processing aspects of the fishery as well as play a critical role in distribution functions. These activities revolve around shrimp production largely for the export market and fish production mainly for local markets (Akerele 1979).

An interesting comparative perspective between that of Liberia and Ghana reveals that in Ghana, women have played a substantial and significant role in the fishing industry as it has developed more modern and sophisticated production, distribution and marketing channels. On the other hand, in Liberia, even though women have continued to occupy their positions as fish traders, they have lost their dominance in distribution to the

establishment of the depot system or "formal" sector in which Lebanese merchants are active agents for selling the Liberian Fishing Enterprise's fish (Akerele 1979). As the "fishmammies" have become displaced from their positions as direct wholesalers for the Company to the consumers their economic situation has deteriorated. Only at a few depots do women receive commissions and the "debt trap" phenomenon contributes to losses. Women receive fish on credit at a predetermined value from agents at the depots but they are not always able to receive a profit or even the equivalent price at the market. In spite of this fact, the industrial fishery is almost entirely dependent on "mammies" for the marketing of its products.

Tombo fishing village is located on Yawri Bay on the southern coast of Freetown Peninsula in Sierra Leone. The main source of income and employment for 90 percent of its population in 1981 was artisanal or small-scale fishing and fishery related activities. Approximately three-quarters of the Tombo population belong to the Temne group and practically all of these households are actively involved in fishing. A high percentage of Temne women (80 percent) are involved in the processing and marketing of fish (Kotnik 1982).

Since this study is focusing on economic factors of production as one of the primary factors influencing status among women in fishing communities, it will be stressed here in relation to the women of Tombo involved in fishery-related activities, many of whom belong to the Temne group. One reason why some Temne women enjoy a large degree of independence is because of the specific system of labor organization in small-scale fisheries. Upon examination of various Temne households, a pattern is revealed of female status increasing with the scale of the fishing enterprise. According to Kotnik (1982), the greatest degree of economic and social independence is found among the first wives of boatowners. Of course, other factors also play a role and they are interrelated with economic functions.

Three models of handling economic affairs between men and women are described by Kotnik (1982) and support the idea that a women's status increases with the size of the fishing enterprise. In most cases (about 80 percent) husband and wives have separate accounts and Temne fish processing and marketing women decide freely concerning financial affairs. In cases where a family owns two or more Herring or Bonga boats, the husband and wife team run their productive enterprises independently, but pool their profits to invest in their joint fishing operation. Formally the husband owns all of the equipment but he does not make any important decisions without consulting his first wife. He must also consult his first wife about taking an additional wife. Most of the wealthier households follow this pattern of close cooperation between husband and wife. A third model is found in the smaller and less productive households. The man might own a small canoe and since a women is limited by smaller catches she is not involved in large-scale processing and marketing activities. The husband controls the business to a greater degree and, oftentimes, women will migrate to other fishing grounds during the rainy season with their husbands. Perhaps this is because they can not effectively compete with the larger fishing operations?

It is evident here that there are many different variables influencing the the economic role of women and, in turn, her status. Differential levels of technology are one factor, along with profitability of the enterprise. Social relationships also play a role and these are influenced by the extended family nature of households and a tradition of polygamy. It is interesting to note the conclusions of another study done by Van der Meeren (1986). He asserts that Temne women do not have independent economic authority compared to other situations along the West African coast. Full ownership and control over property is exerted by the male head of the household. He controls all of the money but encourages profit making among wives by allowing them to keep the greater part commensurate with the profits made. It is not clear here whether or not women were interviewed directly to find out from them whether or not they play an influential role in decision-making.

However, it is obvious that polygamy has economic implications and influences the roles and statuses of women.

Within the Sherbro society in the Tombo fishing community, polygamy is far less common and the autonomy of women substantially greater. Sherbro women have rights over land, capital, labor and the descent group is matrilineal. Women have separate financial accounts and even give loans to their husbands. One study identified 59 percent of Sherbro households as headed by women (Kotnik 1982). Since many Temne families have Sherbro inter-tribal relationships in Tombo, this factor may have strengthened the female's position in some Temne households (Kotnik 1982).

Hall-Arbor (1988: 7) investigated the economic importance of female fish traders of Guet Ndar, Senegal. She reported that petty traders in the informal sector not only contribute to the smooth movement of fish around the country but that "it is the use of their incomes and other resources that contribute to the well-being of their families, households and social networks and thus help maintain, and sometimes improve, their standards of living." Hall-Arbor argues that women's earnings from fish trade (both small and large) complement men's earnings from fishing and are essential to their social networks. Further, women's trade practices have been successfully maintained in spite of fluctuations of supply. Women in Guet Ndar spend their income and resources on essentials such as food, education, medicine, services and gifts.

If fishery development projects in Senegal seek to eliminate the 'middlemen' or the intermediaries in the fish trade in order to improve the distribution and marketing of fresh fish, the development efforts could limit if not eliminate women's income earning opportunities in Guet Ndar. In development planning, Senegal has sought to centralize the processing-distribution plants in the country in order to command the entire supply of fish (Hall-Arbor 1988). The argument against taking such action was developed through research examining the significance of small-scale earnings. The results reveal potential

negative impacts of development projects on women if their traditional roles are not incorporated into the development plans.

Development projects often have a direct effect upon women when change agencies introduce new forms of fish processing technologies. The result can be a reduction in female economic participation. In some cases, the result might be a total rejection of the particular fish processing and handling technique, as was pointed out by Pollnac (1988a). In West Africa, the "Altona smoker" displayed excellent technical performance, but was too expensive to construct in terms of the local economy and it did not utilize indigenous materials. Further, the women could not handle the racks of the "Altona smoker" because they were massive and too heavy. Eventually it was not accepted by the fishing communities.

> The introduction of large-scale processing activities may also work against the interests of women by interfering with traditional work habits and patterns, making women's traditional activities redundant, inhibiting local incentive, or relegating women to the position of dependent and often poorly paid wage labourers. Large-scale operations may also introduce complicated technologies for which women are unprepared. Projects that enlarge or mechanize women's traditional activities may become male-oriented, thus depriving women of essential sources of income (FAO: 1988a: p. 13).

The impact of introducing new forms of fish processing, handling technologies and/or marketing systems is not only limited to reducing or increasing economic roles. The social impacts can have similar effects on women's participation. Social activities may also be reduced by new forms of processing or marketing technology, thereby creating a disruptive effect on the lives of women in fishing communities. The social aspects or non-economic functions of the marketplace should not be underestimated. The marketplace provides an important place for dissemination of information and communication on both an informal and formal basis. They are ideal places for the exchange of ideas and for meeting old and new friends. In his study on women fishsellers in the Congo, Ngole (1988) was amazed by the dexterity with which fish sellers combined selling and leisure activities. He also found that "the Congolese women seller....excels at trade and derives

pleasure from displaying a multigeneric repertoire and a commanding knowledge of fish species and kinship terms." (Ngole: 1988: 12)

Before proposing changes in fishing communities, decision makers must also consider the overall workload of the women in the community and take account of their other duties as well. An increase in the economic activity of women in the fishery may, on the superficial level, seem to benefit the women and her family. However, more advanced technologies may also become a burden for women:

> The introduction of improved technology and methods aimed at increasing the fish catch - better craft and fishing gear, improved methods for preserving fresh fish at sea, etc. - 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 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: 1988a: p.13).

The immediate financial situation may improve, but women's other duties may be negatively affected. In addition to their income-generating activities, women also bear children, take care of the children, cook meals, clean the house, tend the garden and buy the daily food. If a women's fishery-related activities become more time-consuming, it may reduce her productivity in these other areas or the proposed changes may be rejected. "Great care must be taken that such changes do not inadvertently worsen women's position as individuals or reduce their capacities to help support themselves and their families" (FAO, 1988a).

Changes in the fishing gear technology of the fishermen may also be a significant factor affecting the role of women in the targeted fishing communities. The introduction of technology such as: new types of nets; fish aggregating devices (FADs); new aquaculture methods; larger boats, and more powerful engines could result in either reducing or increasing female participation. Pollnac (1988a) describes the impact of introducing a deep-water handline to fishermen in two rural fishing villages in Benin. The fishermen began taking longer fishing trips and changed their landing site to the city of Cotonou.

Thus, the women in the rural villages were no longer able to market the fish catch and were displaced from their traditional economic roles (cf. Rais, 1986). These types of changes have a direct beneficial effect upon men in fishing communities and have an indirect adverse effect upon the women.

3.2.3 South Pacific and Asian Fisheries

There are very few studies detailing the role of women in Indo-Pacific fisheries. Some exceptions are Anbarasan (1985), Chapman (1987), Drewes (1982), Firth (1984), Ifeka (1989), and Schoeffel (1985). This literature is quite recent and much of the other research from both regions does not include women's contributions to subsistence and the economy with regard to the fishery. As mentioned earlier, very little quantifiable data exists on women's economic contributions to various sectors of society and fisheries in the Indo-Pacific region is no exception.

Chapman (1987), however, has systematically examined the few data available to assess the importance of women's fishing activities in Oceania. Her results suggest that women are significant suppliers of protein for subsistence and that their activities are more reliable than male activities because of their highly regular nature. These findings have policy implications since women may be more knowledgeable than men regarding some technical or ecological aspects of a fisheries development project, especially if it is to take place in the coastal zone where they often fish.

Schoeffel (1985) also stresses that women's fishing production in the South Pacific region is very important and possibly on a par with that of men:

> Although it is impossible to generalize about subsistence fisheries in the South Pacific, I am willing to make one large and unqualified generalization - that in Pacific communities where fishing is done the contribution of women's fishing to the daily diet is at least as significant as that of men (p. 160).

In her paper, Schoeffel (1985) points out four paradoxical facts about women's contemporary roles in the fisheries of the South Pacific:

1) Women have very little access to boats, new technology, fishing

tackle, or extension services from the government fisheries departments, even though the contribution from women's fishery-related activities to daily subsistence diets is indispensable to most coastal communities.

2) Women are largely excluded from direct participation where fishing activities have been formally planned and developed, even though they are mutually supportive.

3) Women are not involved in mariculture trial projects, even though the projects usually take place in the traditional fishing grounds of women.

4) The greatest and most technically varied participation by women in fishing is to be found in certain Melanesian communities, however, it is easier to identify ways to assist women in Micronesian and Polynesian societies.

Schoeffel concludes that there are many opportunities for women to increase their participation in the fisheries of the South Pacific in both harvesting the catch as well as supportive activities (processing, marketing and distribution). However, these opportunities must be recognized by national development strategies and then put into practice through extension and advisory assistance.

Firth (1984) draws from his field research in both the Solomon Islands and Malaysia to make a comparative analysis of two economic systems heavily dependent upon sea fishing. The two communities where Firth and his wife studied differ in ecological setting, cultural setting and economic arrangements for handling the fish catch. Thus, by comparing the roles of women in the fishing communities in two unique settings Firth is able to draw conclusions regarding the various factors influencing their roles.

The common point in both Tikopia (the Solomon Islands) and Kelantan (Malaysia) is that there is a marked division of labor by sex where the men are primarily concerned with the capture of fish. The ecological, socio-cultural and economic factors influencing the fishing communities result in differential levels of female participation in the fishery between Tikopia and Kelantan. The fringing reef around Tikopia allow women to regularly take part in daily fishing activities which contribute to the family diet. Kelantan women sometimes participate in beach seining but ordinarily make no contribution to the household by catching fish. However, a Kelantan woman:

has other opportunities open to her through the complexities of the

> market economy. The Tikopia woman is confined to a very simple role in her fishing economy: she fishes routinely almost every day and she takes part routinely in household affairs concerned with the cooking, exchange and consumption of fish. The Kelantan woman has a much greater range of choice. She can deal in fresh fish at various levels in the marketing organization, she can cook fish, salt and dry it or pickle it in brine, for sale by herself or for payment as an employee of a dealer....to put this another way - in Tikopia, simple fishing by a women is part of the domestic economy; in Kelantan a woman's contribution to the domestic economy from fishing can only come from handling fish outside it, and many women do not make this contribution at all. The external market, with its cash nexus, offers many opportunities, but it also can be a deterrent to activity (p. 1169).

Firth makes some points in his paper which are very relevant to research findings from this study. His propositions will be referred to later in this thesis as factors influencing the roles of women in the Indonesian fisheries sector.

Some of the "grey" literature focusing on the role and status of women in fishing communities has been generated from FAO's Bay of Bengal Programme. Drewes (1982) carried out a survey to ascertain the socio-economic situation of three small fishing communities in Tamil Nadu, emphasizing the economic role and status of women. She concluded that women in small villages exercise greater power and maintain stronger control over income than women in larger villages visited by fish merchants. This is because women sell the fish and receive money. Thus, they are in a position to determine whether to spend or save money. They also participate in decision-making regarding the purchase of nets, boats and other fishing equipment.

In spite of the fish sellers important economic role and higher status compared to other women in Tamil Nadu, they do not participate in community affairs. In fact, women are restricted from political positions and are not even allowed to take part in village meetings. Another Bay of Bengal Programme study conducted in Tamil Nadu (Anbarasan 1985) pointed out similar findings. Fisherwomen were prevented from equal participation in political decision-making and in economic development. They were excluded from cooperative societies, banking and credit facilities. Further, they could not enjoy the benefits of education and vocational training.

Anbarasan (1985) states that fisherwomen as a group have a low status in society compared to men. She points out three factors influencing this status:

- prevailing technology and economy;
- ownership of assets, and;
- tradition and socio-cultural factors.

Prevailing technology and economy. The market economy has attenuated women's economic role in her family because some can no longer obtain family needs through sale of fish. If she can earn money, however, her status is higher within the family. Improved technology has meant bigger catches which could not be handled by fishsellers because it requires more capital. Further, nylon net fabrication machines have displaced women from traditional net-making activities.

Ownership of assets. The ownership of assets determines the type of economic participation by women in fishing activities. Women who physically carry and market fish generally come from families that have no productive assets. Their labor is assigned low status within the society. However, women whose families own productive assets hire workers to market fish and handle money. They may have a higher status in the village although both types of women enjoy a high status in the family do to their income-generating activities.

Tradition and socio-cultural factors. The traditional norms that pertain to family and marriage relegate a low status to women and "religion is invoked to rationalize and sanctify tradition."(p. 33) Cultural norms prevent women from participating in politics and decision-making. Thus, as Sanday (1973) pointed out in her research discussed earlier in this chapter, earning an income is a necessary but not a sufficient condition for women to achieve a high status.

CHAPTER IV

FISHERIES IN INDONESIA

4.1 Structure of Indonesian Marine Fisheries: Small-scale vs. Large -scale and Gear Types

In Indonesia, the marine fisheries sector is divided into three subsectors - small-, medium- and large-scale. The small-scale fishery employs approximately 90% of all fishermen which accounts for about 70 % of total landings (Bailey et. al. 1987). At the other extreme, the large-scale fishery employs less than 1% of all the fishermen and accounts for less than 2% of all landings. In the 1970's, the medium-scale sector expanded rapidly due to the use of the otter trawl and by 1980 accounted for 9% of all fishermen and 28% of total landings (Bailey et. al. 1987). The ban on trawling in most Indonesian waters made the purse seine the most dominant fishing gear in the medium-scale subsector.

The difference between the three subsectors in Indonesian fisheries is mainly levels of investment in the technology. The Directorate General of Fisheries (DGF) defines all boats powered by sail or outboard engine as small-scale. All fishing gear operated without the use of a boat are also considered small-scale (Bailey et. al 1987). Inboard engines typify either the medium- or large-scale subsectors.

The large-scale fisheries of Indonesia are primarily export-oriented and are characterized by heavy investments in large fishing vessels or many smaller vessels. This subsector has established international marketing channels which include large refrigerated ships for transporting the frozen catch. Production consists mostly of tuna from long-liners and pole and line operations and shrimp from double-rigged shrimp trawlers. The investment in the large-scale subsector comes from private Indonesian companies, State-owned enterprises and joint venture corporations (mainly with Japanese counterparts). The large-scale investors also maintain shore-based support facilities (Bailey et. al. 1987).

Medium-scale fisheries require lower investment levels than the large-scale subsector. On the basis of gear types, the medium-scale subsector cannot be differentiated

from the other subsectors. Ownership of gear and boats is Indonesian, and individual owners generally have one or maybe a few fishing units. Medium-scale operators generally do not have investments in shore-based facilities such as ice plants, cold stores or workshops. The difference between medium-scale and small-scale is the engine. Boats in the medium-scale subsector are powered by inboard engines (Bailey et. al. 1987). Gear types in the medium-scale subsector consist of otter trawls and purse seines (see Figures 4.1 and 4.2).

As discussed above boats in the small-scale subsector are powered by sail or outboard engine. Also, fishermen (and women) who operate gear without the use of a boat are considered small-scale. Gear types in the small-scale fisheries subsector in Indonesia are extremely diverse. These include seines, gill nets, fish traps, liftnets, guiding barriers, hook and line, hand lines and traps. Types of gear commonly used without a boat include cast nets and push nets. Since the focus of this research is predominantly on the small-scale fishery, a brief description of gear types is provided so that these terms can be used in later chapters without confusion to the reader.

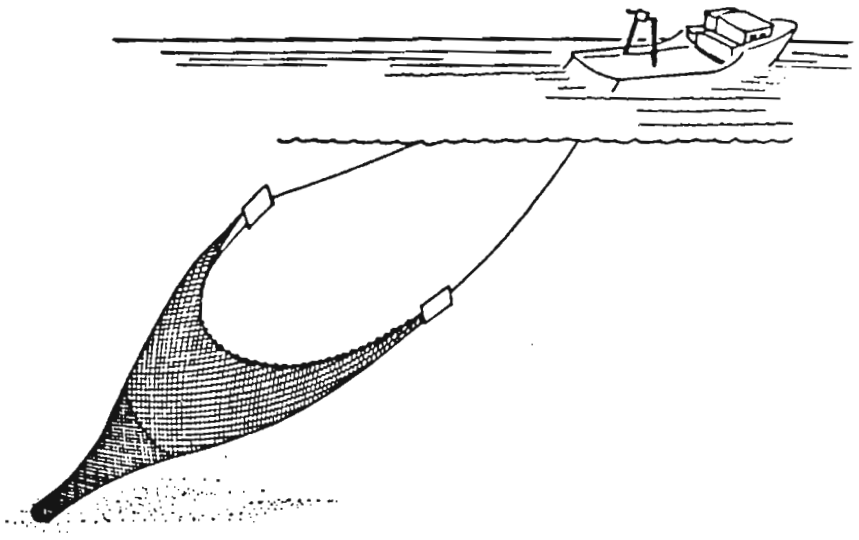

Figure 4.1: Otter trawler
(Source: Bailey et. al. 1987)

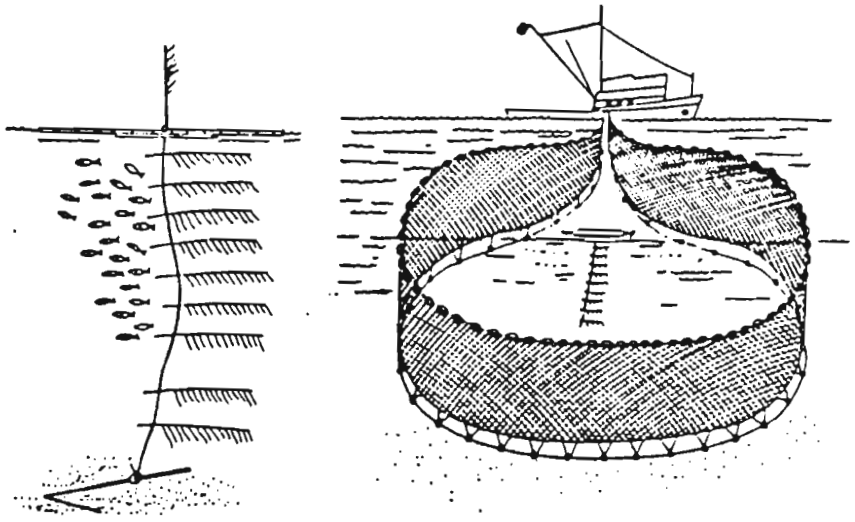

Figure 4.2: Purse seining
(Source: Bailey et. al. 1987)

4.1.1 Seines

Different types of seines exist and are used for different purposes. The payang is one type of seine often used with an anchored lure to aggregate schools of fish (see Figure 4.3). It is a pelagic gear usually operated within a few miles of the coast and catches scads and Indo-Pacific mackerels. The demersal counterpart of the payang is the Danish seine and this is operated at or near the seabed. It is used to capture small demersal fish species (excluding shrimp) where the bottom is free from obstruction (Bailey et. al. 1987).

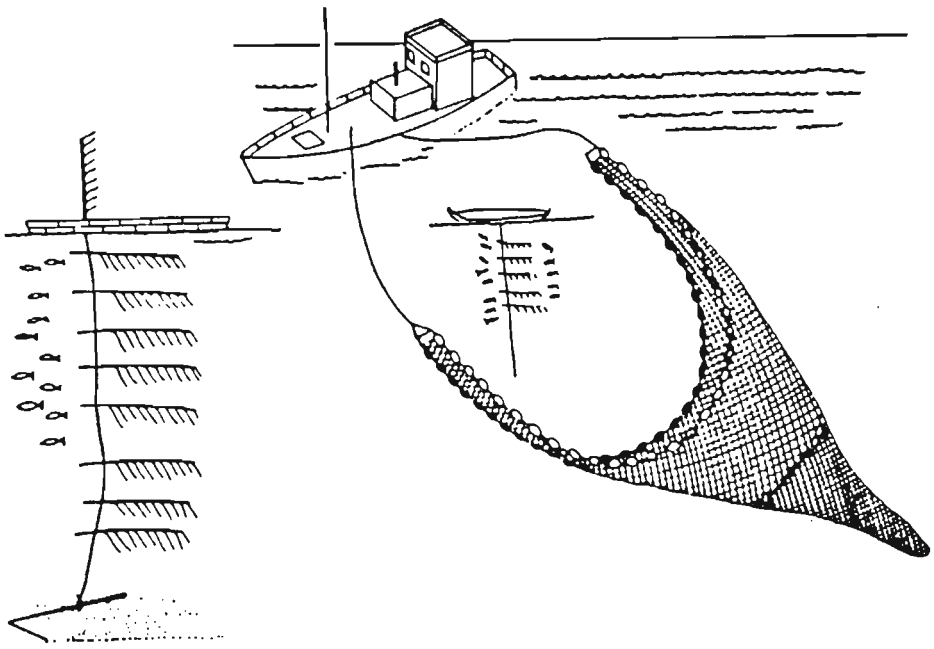

Figure 4.3: Payang seining
(Source: Bailey et. al. 1987)

4.1.2 Gill nets

Four types of gill nets are used - drifting, fixed, encircling and trammel. The most common is the drifting gill net which hangs near the surface and is used to capture pelagic species (see Figure 4.4). The fixed gill net is set on the bottom with weights or anchors and is used to capture demersal species. The trammel net is also set along the bottom and the main target of this gear is shrimp (see Figure 4.5) (Bailey et. al 1987).

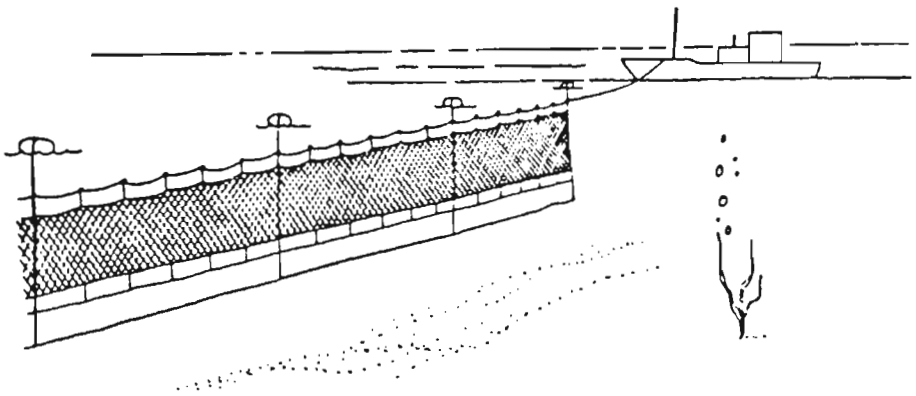

Figure 4.4: Drifting gill net
(Source: Bailey et. al. 1987)

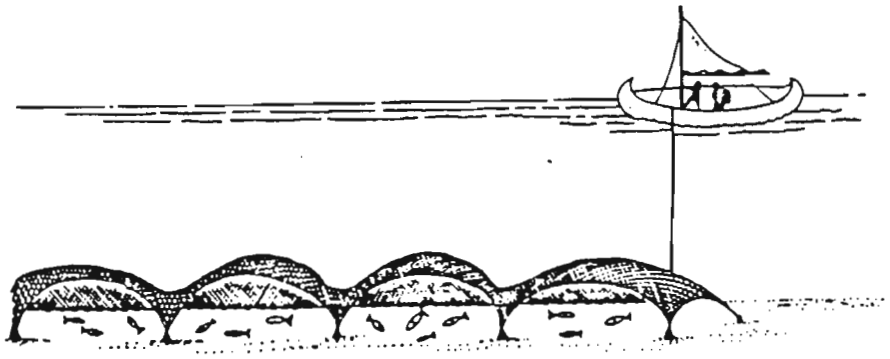

Figure 4.5: Trammel net
(Source: Bailey et. al. 1987)

4.1.3 Liftnets

A very common type of liftnet in Indonesia is the stationary platform used in shallow water for capturing anchovies or other small schooling pelagic species (see Figure 4.6). The gear is set at night and light from powerful kerosene pressure lamps attracts fish into the liftnet. This gear is limited to areas where the seas do not get too rough. Thus, they are widely distributed except in the Moluccas, Irian Jaya, the Lesser Sunda Islands and adjacent to the Indian Ocean coast of Java and Sumatra. Similar to the stationary liftnet, the mobile liftnet is operated in the same way but they are mounted on twin hulled boats or rafts of bamboo. Another type of liftnet called the kelong uses barriers instead of light to guide fish into the net (see Figure 4.7). The scoop net is also widely distributed in Indonesia and range from a small dip net on a bamboo pole to a large net similar to a pelagic trawl operated from motorized boats (see Figure 4.8). Push nets are also considered lift nets and are used by people wading in the shallow coastal waters (see Photo). These are used to capture small milkfish fry or juvenile shrimp which are then sold to brackishwater pond operators (Bailey et. al. 1987).

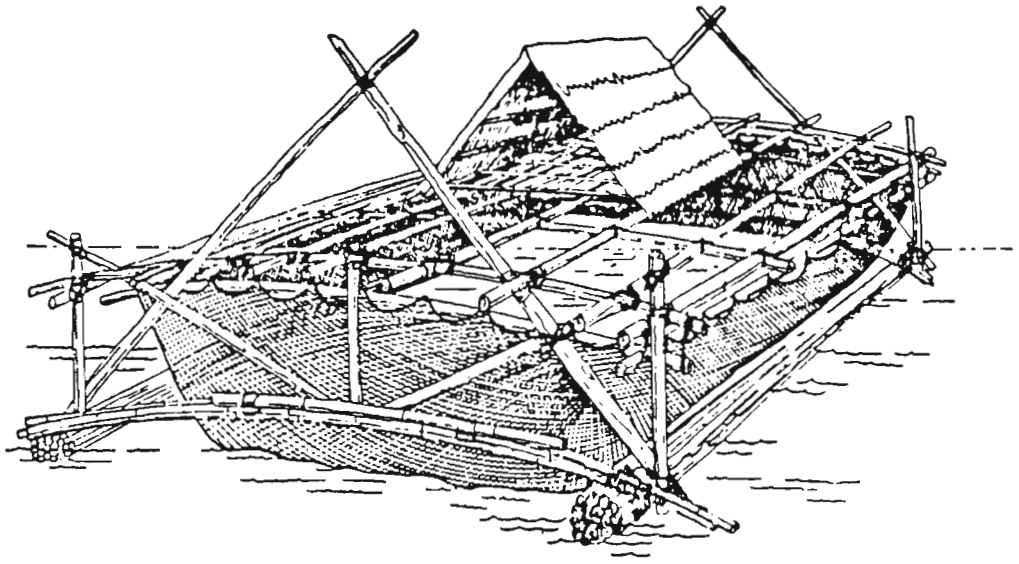

Figure 4.6: Stationary liftnet
(Source: Bailey et. al. 1987)

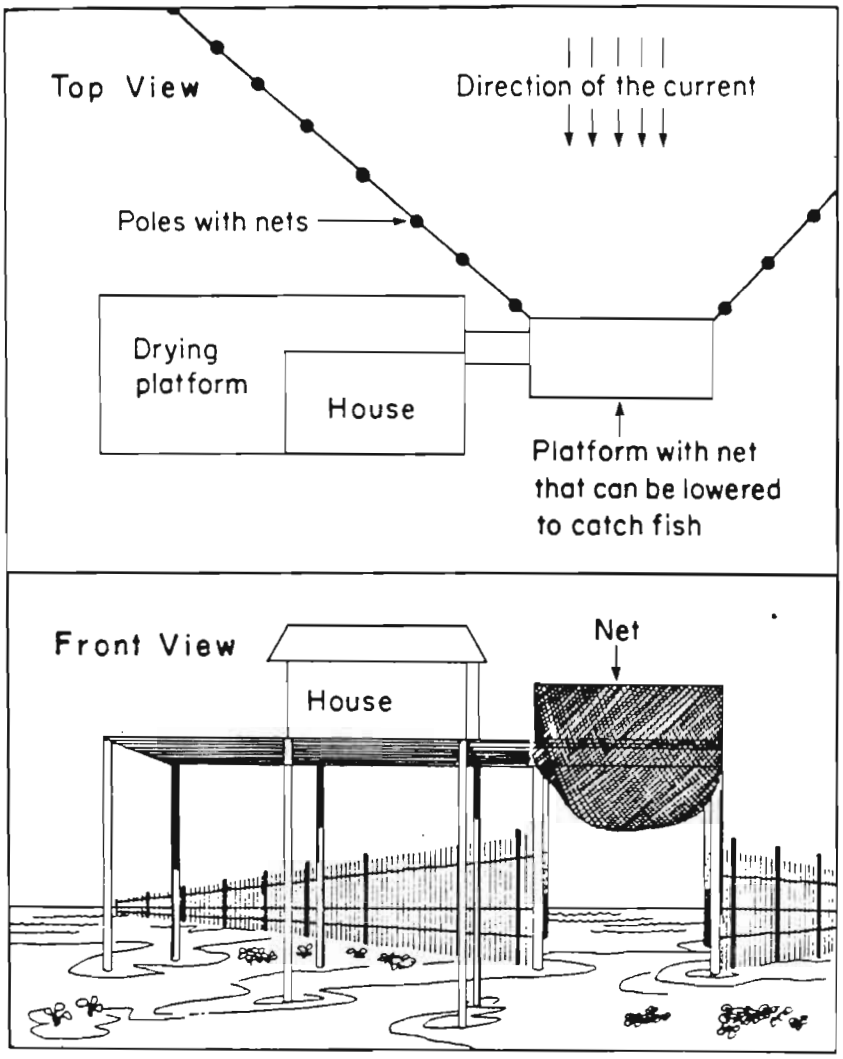

Figure 4.7: Kelong liftnet using barriers
(Source: Bailey et. al. 1987)

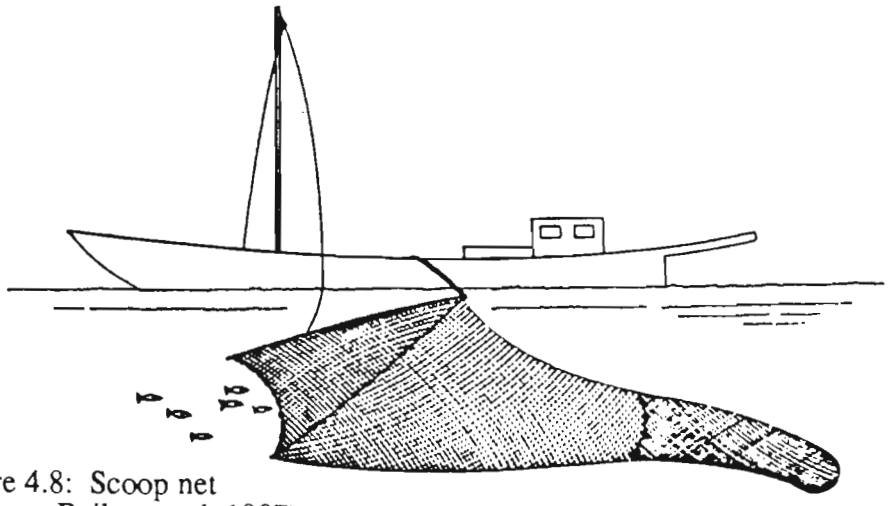

Figure 4.8: Scoop net
(Source: Bailey et. al. 1987)

3.1.4 Hook and line

Under this category of gear are longlines, skipjack pole and lines, trolls and "other pole and lines". Pole and line fishing for skipjack tuna has a long history in the small-scale subsector but fishermen are not able to follow the migratory skipjack so they are limited by its seasonality. Longlines consist of different varieties and are used to catch sharks and other large pelagic species (see Figure 4.9). "Other pole and lines" include simple hand lines (usually without pole) and this gear type is widely distributed throughout Indonesia (Bailey et. al. 1987).

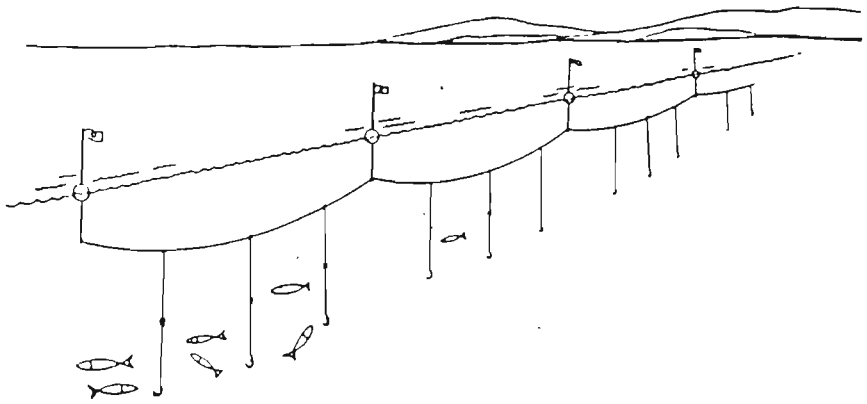

Figure 4.9: Longlining for pelagic species
(Source: Bailey et. al. 1987)

4.1.5 Traps

Various small traps (bubu) are used in the Indonesian small-scale fishery and they are generally made from woven rattan and are portable (see Photo 7). They are set in both open waters and around coral reefs and are used to capture demersal species. Stationary gear such as guiding barriers and stow nets are widely used in shallow protected waters. Guiding barriers are placed perpendicular to the current and consist of a series of barriers to "corral" fish into a small enclosure where they can be extracted with dip nets or small seines (see Figure 4.10). The target species are demersal finfish and shrimp (Bailey et. al. 1987).

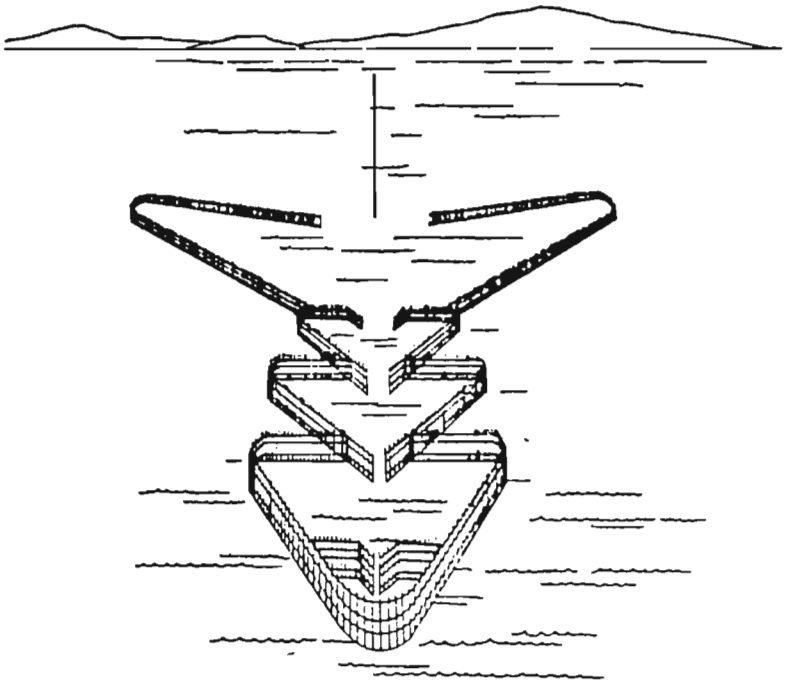

Figure 4.10: Guiding barriers
(Source: Bailey et. al. 1987)

4.2 Overview of Indonesian Fish Marketing and Distribution

The marketing and distribution patterns in Indonesia are depicted in Figure 4.11. This general structure varies among locations depending upon the number of persons buying and distributing fresh fish and the kinds of facilities available at fish landing sites. Locational factors determine whether fish will be marketed fresh or processed and transported to other areas. The processing activities (often done by women) allow for the use of surplus fish for later sale. Thus, it is possible to dispose of a large catch where the facilities are not adequate for maintaining fresh quality and it cannot be absorbed by the local market. It is typical that fish changes hands several times before retail sale (Bailey et. al. 1987).

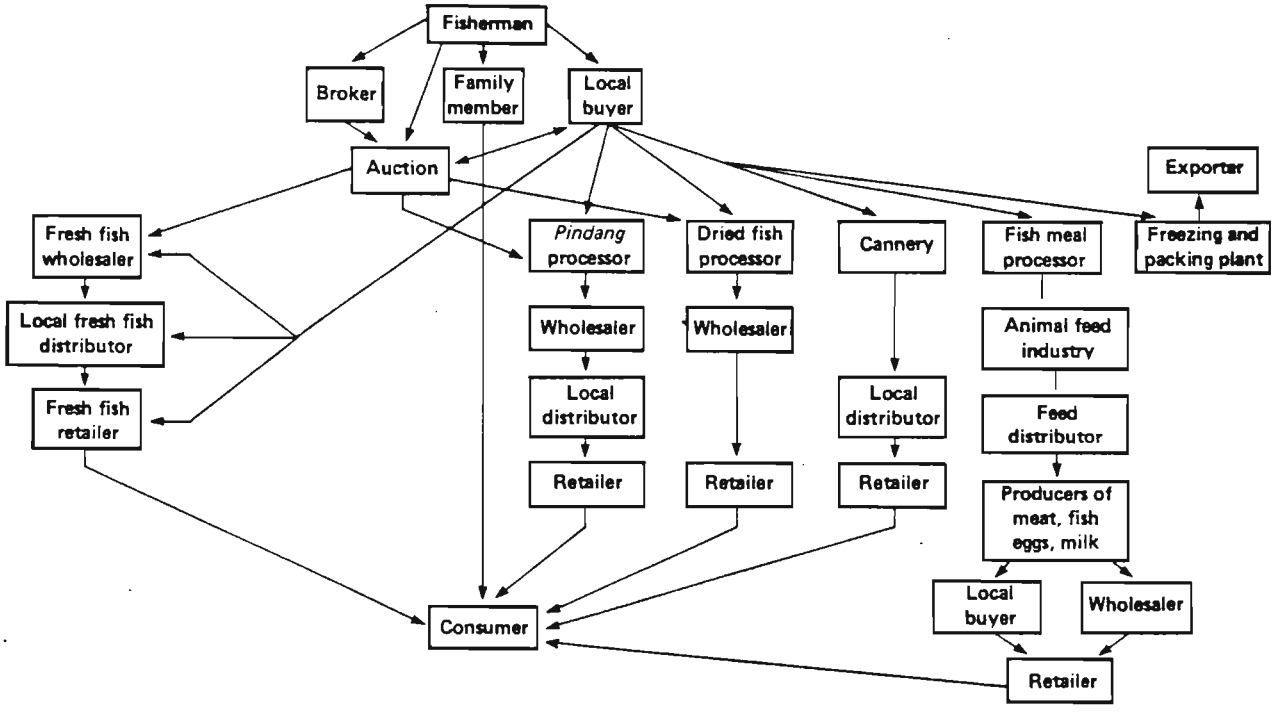

Figure 4.11: Structure of Indonesian fish marketing and distribution patterns. (Source: Bailey et. al. 1987)

The sale of fish by family members of the fishermen is common but may be limited by local demand for fish and obligations of fishermen to sell to certain buyers to whom they are indebted. The local fish buyers sometimes finance investment and operational loans to fishermen. Thus, fishermen may be obligated to sell to their buyer and usually it is at a discounted price.

4.2.1 Local buyers

Local buyers purchase fish directly from the fishermen. Fish trading is often their main occupation (although they may be involved with other economic activities) and they may reside in the same community as the fishermen or operate in specific villages. The situation under which the buyer operates differs from setting to setting. Competition may be minimal in the smaller, more isolated communities and greater at the larger fish landing sites. The buyers may sell to fish processors or to fresh fish wholesalers.

> From the perspective of the individual fisherman, local buyers are the key link in the marketing and distribution chain for fresh and processed fish. In most small-scale fishing communities in Indonesia, these buyers provide the only outlet for the catch, are the sole source of price information and play an important role in financing (Bailey et. al.: 1987: 136).

Not all local buyers are relatively wealthy individuals who are able to provide investment or operational credit to fishermen. The buyers may even receive fish from fishermen on credit and will pay later after they have received money from the person to whom they sell the fish. Sometimes the chain of credit extends far along the marketing pattern, as when buyers receive fish on credit from the fishermen, then sell on credit to retailers who may then sell to customers on credit. This reflects a shortage of capital in Indonesia among buyers, retailers and consumers (Bailey et. al. 1987). Fresh fish wholesalers may provide capital to local buyers who in turn provide loans to fishermen.

4.2.2 Fresh fish wholesalers

The main difference between fresh fish wholesalers and buyers is the amount of capital they operate with and their manner of fish distribution. The number of fresh fish wholesalers is less than other buyers but they handle larger quantities of fish and their

operating capital is much greater. They generally operate out of the larger ports (on Java they are Cirebon, Tegal, Pekalongan and Semarang) where ice is readily available and there exists easy access by road to major consumer markets. The fresh fish wholesalers then sell to fresh fish retailers who sell directly to the consumers. The nature of the relationships between wholesalers and retailers has not been investigated in detail and it is not clear why this has received very little attention by researchers (Bailey et. al. 1987). The small amount of research has suggested "that a small number of wholesalers exert oligopolistic control over domestic marketing of fresh and dried fish of Java by controlling distribution of fisheries products from point of supply to retail outlet. The presence of these oligopolistic wholesalers poses a potentially serious threat to opening new marketing channels" (Bailey et. al. :1987: 138). It is obvious that they play a significant role in the marketing and distribution of fish, especially on Java.

4.2.3 Fish auction halls (Tempat Pelelangan Ikan or TPI)

In order to dissipate the perceived hold of the local fish buyers over fishermen, the government established 134 fish auction halls (TPI) in fishing communities around the country, although most are located on Java (Bailey et. al. 1987). They are associated both physically and institutionally with fishermen's cooperatives (Koperasi Unit Desa or KUD) and members of the KUD are eligible for government loans. The proceeds from fish sold at the TPI must go towards payment of auction charges, savings and welfare deductions and both local and provincial taxes. The costs of marketing at the TPI is approximately 8% of gross profits.

The fish auction hall is usually a concrete floor which is covered by a roof but no walls. Ice is usually not available although ice plants and cold storage facilities may be found at major urban ports. Fish are generally divided into baskets made of rattan or laid out directly on the floor. Large numbers of people both young and old gather for the fish auctions. These market sites generally bustle with activity when fish is being unloaded from the nearby boats and during the periods of buying and selling. As Figure 12 indicates

the participants at the TPI include fishermen, brokers, local buyers, fresh fish wholesalers and fish processors. The TPI's do allow for fishermen to have access in one location to a relatively large number of buyers who are serving diverse markets. In most cases they do function effectively, however, there are exceptions where most fishermen prefer to sell to local buyers outside of the TPI system in the area (Bailey et. al. 1987)

4.3 Women in Indonesian Fisheries Development: Institutional and Legal Framework

4.3.1 National Policy

In 1978, the role of women in national development was given official attention in the Guidelines for State Policy (GBHN) for Repelita III (1979-1984). The government policy included the following statements:

1. Overall development must be based on equality and maximum participation of men and women in all fields.

2. The role of women in development should increase harmoniously with their role in creating healthy and prosperous families, guiding the young generation, the youth and underfives, in the context of the development of the Indonesian Man of Integrity.

3. The role and responsibilities of women in development shall be enhanced by increasing their knowledge and skill in various fields according to their needs and capabilities (CIDA 1987).

In the same year, a Junior Minister for the Role of Women was appointed and it was later upgraded to a State Ministry for the Role of Women in 1983. This Ministry has the responsibility for coordinating all efforts in the various ministries and government agencies with respect to enhancing women's participation in development activities. In order to carry out these goals and objectives the government policies focus on under-privileged and unskilled women in both rural and poor areas. Programs are designed to:

1. enhance the role of women in socio cultural development;
2. increase employment opportunities for women, and;
3. increase the skill level of women.

Repelita IV (1984-1989) contains a fourth statement pertaining to women in development: "In order to promote the participation of women in development, it is necessary to further increase the activities of women for the improvement of family welfare, among others through the program of Pembinaan Kesejahteraan Keluarga (PKK - Family Welfare Movement)". Repelita V (1989-1994), as the current development plan, also expresses these same broad guidelines and policies.

4.3.2 The Legal Status of Women

For many years, Indonesian women have focused attention on ways to improve their social and economic condition. Further, attention has been given to ways in which to improve their status. These efforts are symbolized by R.A. Kartini, the Indonesian women's "liberation" figure, whose birthday is commemorated every year on April 21st.

Since the proclamation of Indonesian independence in 1945, the fundamental status of women has been legally acknowledged by Article 27 (Clause 1) of the Constitution which states that "every citizen enjoys the same status before the law and in government and has the duty to abide by the law and government without exception" and Clause 2 which says, "every citizen has the right to employment and to enjoy a condition of life commensurate with human dignity".

The various ethnic groups in Indonesia also have a customary or adat law which binds them together. Of approximately 300 ethnic groups around the country, nineteen adat law communities have been distinguished (CIDA 1987). The kinship system is a prevailing factor in the adat community. Thus, the status of women in a particular area depends upon the kinship system of which they are a member. State law does recognize the validity of the adat law in the legal system and may be used to settle some disputes. However, State law is the basis for a consistent and unified legal system and overrides adat law (CIDA 1987). The government also recognizes Islamic law as part of the overall legal system. However, from a legal perspective religious law is subordinate to state law (CIDA 1987).

Traditionally, the roles of husband and wife are explicitly outlined in the Indonesian family. The husband is "head of the family" while the wife is "head of the household". Of course, many women work outside of the household and they are allowed by law to conduct legal economic activities. Women can also enter into legal transactions.

The Marriage Law (October 1975 Government Decree No. 9 on Implementation on the Law and Marriage) stipulates that women have the same rights and legal capacity as men in the family and social life. Both husband and wife may file for divorce and both are responsible for the children until they marry or become independent (CIDA 1987).

4.3.3 Institutional Mandate and Structure

As mentioned earlier, the Minister of State for the Role of Women has the responsibility for formulating programs and policies for women and coordinating the efforts of all other programs involving or directly affecting women. The organizational structure of this Ministry is presented in Figure 4.12.

The Ministry coordinates the program called "The Enhancement of the Role of Women Towards Healthy and Prosperous Families" (P2W-KSS) which is largely concentrated in the most deprived villages. The aim of this program is to enhance the role of women as mothers and home managers. Areas covered include health and sanitation, nutrition, non-formal education, environmental hygiene, family planning and home economics. The Minister of State for the Role of Women coordinates the planning, funding and implementation of P2W-KSS programs through line departments (i.e. Ministry of Home Affairs) (CIDA 1987). The Government's program reach rural women at the village level through the PKK (Family Welfare Movement). The PKK is concerned with human resources development, the increased and expanded role of women in the labour force, and improved family welfare.

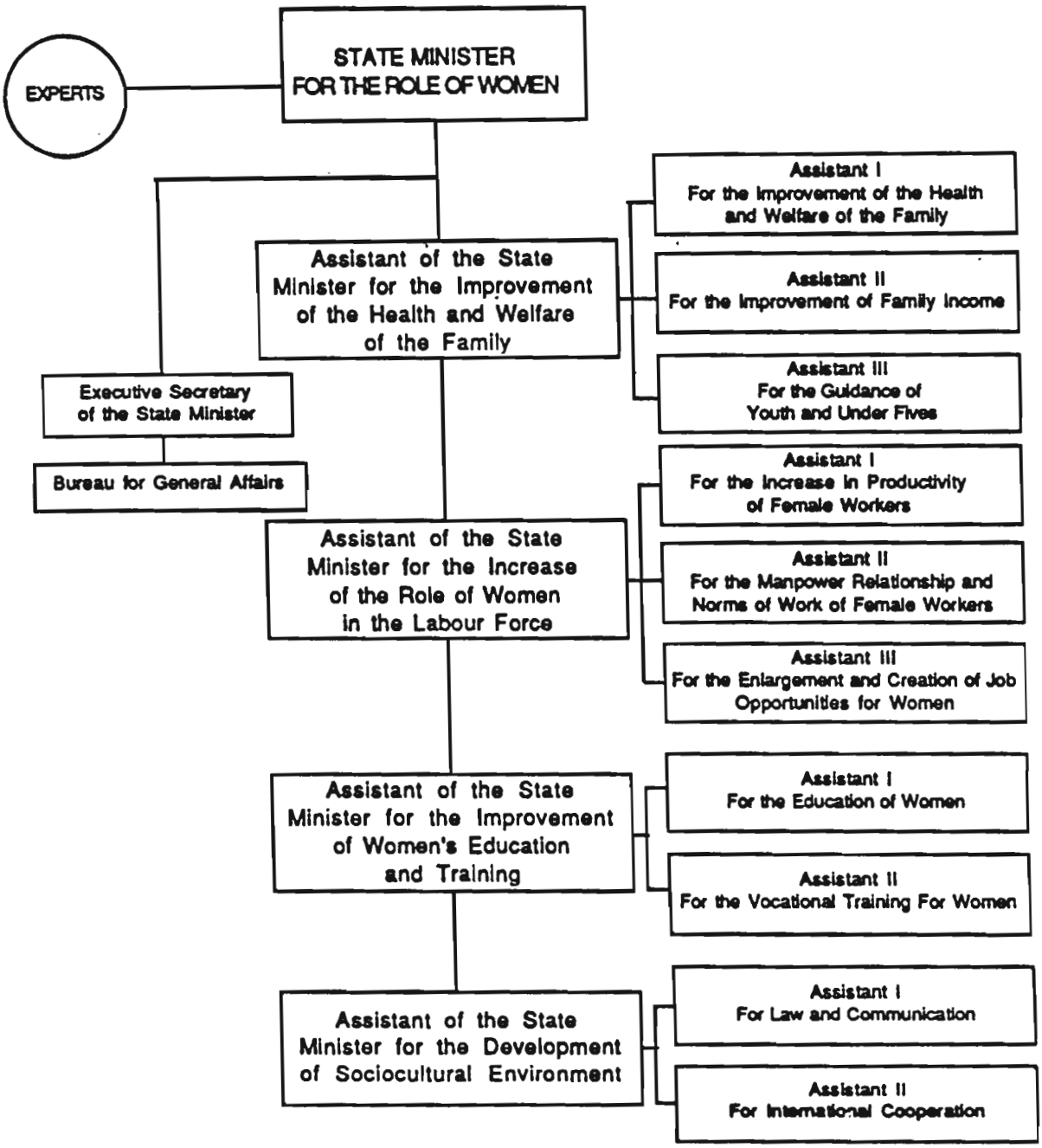

Figure 4.12: Organizational structure of the Minister of State for the Role of Women.
(Source: CIDA 1987, Appendix VIII)

4.3.4 Non-Governmental Programs

The Center for Women Resources Development (PPSW) located at Pasar Minggu, Jakarta is one NGO involved with research and projects focusing on women in coastal fishing communities. They have been involved with a baseline study for a UNDP project to "Enhance the Role of Women in Fishing Villages" which will be discussed in more detail in the next section.

KALYANAMITRA, located at Jalan Raya Bogor 30/km 20 in Jakarta, is a "Women's Communication and Information Center". It contains a library and documentation section, community contact and publication section, training and discussion section, and research section.

In 1985, UNDP initiated a program to assist women in transmigration areas and fishing villages. Project No. INS/85/025 "Enhancing the Role of Women in Transmigration Settlements and Fishing Villages" is still being implemented and was recently evaluated (UNDP 1990). Five transmigration settlements on Kalimantan, Sulawesi and Sumatra are targeted areas. Seven fishing villages on Java (and one on Sumatra) are pilot project sites.

An FAO funded project TCP/INS/2314 focused on secondary activities for fisherwomen on agricultural land. These types of secondary activities are only possible if the land in the coastal area is appropriate for agricultural uses. UNDP/FAO also funded fisheries extension in five provinces, INS/78/014 and INS/83/014. The focus was on men and women's concerns were partially addressed after 1984 (CIDA 1987).

4.4 Past Projects Involving Women in Indonesian Fisheries Development

The UNDP project INS/85/025 has been relatively well documented and the information generated during the course of this project provides some important secondary data to this study. The main objectives of the project were to produce a model for teaching women in rural villages how to set up group businesses (KUB's) that are viable, to set up a

monitoring system for the projects and to train personnel within the Indonesian bureaucracy in production of post harvest products and in enterprise development (UNDP 1990b). This project was based on the statements made in Repelita IV (1983-1988) which aim to improve the lives of women in transmigration settlements and fishing villages. The premise was that by improving the technical, leadership and management skills of women in low-income families, they could then supplement family income and their socio-economic status within the family and community would be raised (UNDP 1990b).

In 1986, pilot project areas were set up and the original fishing villages were Sidem in East Java, and Cipatuguran and Cisolok in West Java. Information regarding selection of pilot areas is vague and the ultimate decision for site selection was the responsibility of provincial authorities. The Report of the Evaluation Mission (UNDP 1990b) states that the selection process of women participants was also vague and that women facilitators in the field did not know why they had been chosen for consultation/training. Also, selection of women to become KUB members was not based on any specific criteria. The Report criticizes the project for this apparent lack of documentation and says that the basic data of the pilot project is weakened by it. In terms of evaluation, there is no data on which to gauge which criteria need to be present in order for there to be an optimal chance of success. Further, the pilot project was expanded in March 1989 before the original trainings were evaluated or changed in any way according to the results of the pilot test. This made evaluation difficult since the project areas were in two different phases. The additional sites were: Ketapang (Lampung); Muara Angke (Jakarta); Asem Doyong (Pemalang, Central Java); Pantai Sari (Pekalongan, Central Java), and; Tasik Agung (Rembang, Central Java).

Baseline surveys were undertaken in the original pilot project areas in 1987 by Pusat Pengembangan Sumberdaya Wanita (PPSW) or the Center for Women Resources Development. The Central Bureau of Statistics (1991) also conducted a study in all seven fishing villages where the project has been implemented. It seems that this was an effort to

examine both the potentiality of income-earning activities for women and the development of the collective business groups (KUB's). The objective of the study was "to get information about human resources and natural resources in a few transmigration areas and fishing villages in conjunction with the role of women in supplementing family income" (p. 2). It would have been much more effective to have gathered this information prior to implementing the project so that changes in income levels could have been monitored and evaluated during its different stages.

The baseline survey which was conducted in the two original project areas gives detailed descriptions of the villages that participated in the pilot projects (PPSW 1987). However, data was not collected on the situation of each household (ie. disaggregated data on household income and productive household activities of women). This kind of data is necessary for a pre-post comparison of the household situation in order to have an adequate evaluation of the project. The data collected by the Central Bureau of Statistics was supposed to rectify this problem. However, this study was not completed until after the evaluation of the pilot projects. These kinds of shortcomings provide important information regarding project planning and implementation. The measure by which the project was evaluated was the assessment by the women participants themselves during interviews and a comparison between the original capital and current capital accumulation of the whole group, neither of which is a sufficient measure on which to base results (UNDP 1990b).

The PPSW (1987) baseline survey provides a general description of research locations, the socio-economic conditions of women in the fishing villages, and the potentials and problems for "fishing women development". However, the marine fishery sector is not even included in occupational data even though the majority of people in the target villages rely on fishing for their livelihood. The only data that is disaggregated by sex (and age) is population data for Besole village where Sidem is located. The survey included a questionnaire which was administered to a total of 80 respondents from both

research locations (40 from each). Age groups, levels of education, family size, origin, occupation, skills, "leisure time", housing conditions, health, income and expenditures, decision-making within the family, women's contributions to family's income and respondent's participation in the community are types of information that have been gathered in this survey. However, all the information in these categories is presented as averages, and as mentioned earlier this kind of information does not reveal the situation of each household. Also, percentages are given on women's contribution to family's income, but it is not clear what these activities are that generate income. From this information it seems that the majority of respondents are "mere housewives" and it is not clear what they do with their time. The data show that women have a large amount of "leisure time" (ie. 60% of fishing women in Cipatuguran had 4 to 7 hours of leisure time/day and 32% had 8 to 11 hours/day of leisure time), yet this category of "leisure time" is not well-defined. This seems somewhat misleading because it connotates images of women sitting around their homes all day relaxing and chatting. From data generated during field research for this study, this is certainly not the case. Further, with regard to respondent's participation in the community, words like "active", "inactive" and "quite active" are used with percentages attached to them. There are no operational definitions given for these words or explanations as to why women are "inactive".

Despite some of the shortcomings just described in the baseline data survey and the problems encountered during implementation of the pilot projects (ie. inadequate design of monitoring system due to invalid measure for success of KUB's, or unified monitoring of processes and inputs at various levels of the project), the evaluation report provides the information discussed in section 4.5 which is of relevance to this study.

4.5 Lessons Learned

4.5.1 Differential levels of status among women in a community

Treating women as a homogenous "target" group in a given area (even a small village) ignores the vast differences in their own attitudes, their present and past experiences, individual access to education, level of poverty, family circumstances, etc. Thus, women should not be considered a unified group on the basis of their general economic standing - these other attributes just mentioned should be taken into account in project design (UNDP 1987b). Including as many women as possible in project designs requires research into individual differences. Some women already have substantial skills, and the project increased their awareness of these abilities. It also encouraged them to use their skills to generate an income. Some women may not be ready to sustain a business without enormous support from the outside because they lack the natural or developed talent to be entrepreneurial.

The women who were not successful with this pilot project tended to be extremely poor village women, who have no family support, business skills or experience. The women who have been successful in KUB enterprises tended to be more educated on a relative scale within the community and their husbands were supportive. The husbands were often already involved with the fishing industry so they had pre-established business and market contacts and networks. Therefore, socio-economic differences in the village context warrant different approaches to fishery-related development activities. Amongst the extremely impoverished, uneducated and inexperienced women who struggle daily with health, monetary and domestic problems, income-generation by itself is insufficient to raise socio-economic status:

> It appears from other international research, from the BKKBN programme results, and from the personal experience of the evaluators, that extremely poor women do not have the physical or emotional energy that is required to run a business. Business development requires physical hard work, conceptual and innovative thought, financial and physical resources, and most important contact with the world outside their village as possible market outlets. Extremely

> poor women are in this situation because they do not have the above, therefore, the gift of entrepreneurship will not manifest itself until the women's situation is changed. (UNDP 1987b: 13)

4.5.2 Invalid assumptions underlying the project design

The baseline survey for the pilot project stated that "fisher women" have a substantial amount of "leisure time", although this was never defined as was mentioned earlier. The project assumed that women do not have serious time constraints that would interfere with new work. Also, diversion from other productive activities (such as those that are done on behalf of the household), even if it is for income-generation, will not necessarily improve socio-economic status because other responsibilities may suffer. Further, men do not always work independent of women and in some cases men joined in KUB activities.

An assumption that communities will be able to market their goods once they are produced does not consider the complexities of marketing. Some villages lack adequate transportation to reach the markets, a lack of knowledge regarding price fluctuations may result in exploitation by middlemen, competition with higher quality products may lead to an inability to sell the goods, and the lack of information on consumer preferences and demand for products could result in wasted efforts.

4.5.3 Unintended impacts of the project

In some villages, women have become specialists with one or two skill areas, and this has resulted in competition between KUB's. The result has been social stress within the village because KUB's are producing the same product and this has led to jealousy. This is an especially sensitive issue because women who are less successful than others may have their self-esteem lowered and lose motivation to undertake income-generating activities. Further, the mutual support and help often found at the village level may be disrupted.

The KUB's were originally told that they could receive credit for expansion of their enterprises once they had gotten to a certain level of growth. For various reasons this

credit has not been forthcoming up to the time of field research for this study. Some women are anxious and even "a little angry" because they have developed their business to a point where they feel they need more capital to expand. This has resulted in unfair blame being placed on innocent people (ie. field coordinator) (UNDP 1987b).

One negative impact of the project is that it has committed some women to working under less than adequate physical conditions. Work areas are sometimes small and lack proper ventilation. Sometimes, the pay for one day of work is only Rp. 1,000 (UNDP 1987b). Thus, a project that was supposed to enhance their quality of life may be doing the exact opposite.

4.6 Summary

Background information on the structure of Indonesian marine fisheries in terms of both gear types and fish marketing was provided in order for the reader to have a clearer understanding of the next chapter which covers Research Findings. The institutional and legal framework for incorporating women in fisheries development planning and programs legitimizes the study. Further, since there is an official mandate for the formulation of policies and programs affecting women, the conclusions and recommendations made in the last chapter have more meaning because there already exists an organizational structure in the Minister of State for the Role of Women. The discussion of secondary data on past projects involving women in Indonesian fisheries development identifies strengths and weaknesses of previous studies and the impacts of projects.

CHAPTER V

RESEARCH FINDINGS

5.1 General Site Descriptions

5.1.1 Muara Angke, North Jakarta

Muara Angke is a port and fish landing site located in North Jakarta. There is a TPI adjacent to the landing, and during a discussion with a boat captain he said that fishermen from other regions land fish in Jakarta because they can get a better price at the auction facility. The fish market at the TPI was dominated by male fish sellers during the visits to this site, however, the auction itself was not observed. There were some individual female fish retailers selling fresh (the term "fresh" is used loosely since some were of very low quality) fish in small quantities (ie. Rp 5,000/kg for squid and Rp 8,000/kg for white shrimp)[1] . Fish that is not sold fresh is usually processed as salted fish.

There is a processing facility at Muara Angke which was constructed by the Regional Government (DKI Jakarta). There are drying racks and a housing complex for the processors who pay rent of Rp 25,000/month (Rp 15,000 for the building and Rp 10,000 for 5 drying racks). Those who own houses live outside of the facility but use the building as a resting place during processing activities. Two years ago eight Collective Business Women's Groups (KUBs) were established. The North Jakarta fishery region receives assistance from the UNDP project described above. It is not clear from discussions how many of the original groups still exist. Each group had ten members (3 "caretakers" and 7 regular members) and their main activity was drying fish. The starting capital of each group was Rp 250,000 which came from each member (Rp 25,000/person). This starting capital was used to purchase raw materials for salting fish. An interview with a KUB caretaker revealed that the work (gutting, cleaning, salting, drying, sorting and

[1] The exchange rate at this time (May and June 1991) was approximately Rp. 1930 = US $ 1.00.

packing) is done collectively by all members. The product is then sold outside of Jakarta (ie. Bogor, Bandung, Cirebon and Semarang). Based on a discussion with this informant, the selling price for this beloso fish is Rp 300/kg although it fluctuates from time to time. The processors themselves do not know the price received by the wholesalers or retailers for dried fish. The wholesale traders pick up the product at the processing site. The profit generated by the sales is retained at the KUB's treasury and is then redistributed to its members. It was reported by the informant that last year (1990) each member of the KUB received Rp 75,000. It is not clear whether this figure was yearly income or monthly income. It seems more likely that this figure is monthly income since it is more consistent with average earnings.

The members of the KUB had been informed by the heads of all KUBs at the provincial level that they would be eligible for credit assistance for as much as Rp 3 million and they were wondering why they had not received it. The evaluation report of the UNDP project reports that access to bank credit has not been forthcoming because of delays in the signing of a credit facility contract with Bank Rakyat Indonesia (BRI) and the formulation of the scheme's operational guidelines (UNDP 1990). During the times when catches are abundant, the processors can receive additional capital from money lenders. Daily Bank or Bank Harian are informal credit institutions (money lenders) where money can be borrowed at an interest rate of 30%. The money usually has to be paid back within 100 days.

5.1.2 West Coast of Java

There are several landing sites on the west coast of West Java such as Labuan, Panimbang and Sumur. TPIs are located at two of these sites - Labuan and Panimbang. The landing sites are under the administrative jurisdiction of Pandeglang District. In Labuan there are two fish auction facilities where various species of fish are sold. Fish being caught and sold include hairtail (layur), lizardfish (beloso), marine shrimp, mackerels, red snapper, rabbitfish, grouper and black tipped ponyfish. The prominent gear

types include gillnets, the Danish seine (dogol), hook and lines, trammel nets and stationary lift nets. Bagans or stationary lift nets are quite dominant in this area, and the catch is mainly composed of anchovies (teri). The anchovies from the stationary lift net end up being processed as salted fish, and women are frequently involved with the processing activities. Recently at Labuan, a group of fishermen's wives was established. Most of the women who are associated with this group generally are small-scale fish processors with working capital of approximately Rp 50,000. The establishment of this group coincides with an assistance program of the provincial government (West Java) to increase the prosperity of small-scale fish processors. The provincial government has provided assistance in the form of kerosene stoves, knives and buckets.

Even though there is a TPI at Labuan, fishermen may land their catch around the Labuan market when the yield is not very abundant (usually during times when the moon is full). The fish sellers there then buy fish through bargaining, and fish being bought and sold tend to be smaller in quantity. The bakul (local name for fish seller or "monger") work with capital of approximately Rp 5,000 - Rp 15,000 daily. The catch that is not sold fresh at the market may end up as salted fish. It was reported that these fish sellers do not receive credit assistance such as that provided by the central government - KIK (Small Investment Credit), KMKP (Permanent Working Capital Credit) - or credit provided by the local government. However, there is informal money lending among fish sellers.

Female clam retailers were encountered at Sidamukti Village, Panimbang Subdistrict, Pandeglang District. It was reported that small boys collect the clams which are sold for about Rp 700/kg. Crabs were also being sold for approximately Rp 350/crab. Just across the river there is another village (Panimbang) where there are many individual dried fish retailers located in small shops along a bumpy dirt road. The shopowners here are mostly women and run their business while taking care of their babies and small children. It was reported that some of the salted fish being sold are bycatch which are purchased from trawl fishermen who land their catch at Muara Angke, North Jakarta. It is

not clear why they buy their product from Jakarta. Perhaps the yield is not sufficient to satisfy demand in the area? The daily profit margins of these retail shops seemed low (less than Rp. 2,000/day) but it is difficult to get accurate information in such a short visit.

Further along this road near the water there is a TPI and fish landing site. A fish landing was observed and the auction which proceeded it. Eight baskets of fish were unloaded and carefully washed with the filthy, stagnant water as they were being brought to shore. As people both young and old gathered to watch the catch was displayed for all to see. It consisted of black tipped ponyfish, hair tail, round herring and flying fish. An informant reported that each basket contained 30-37 kg. The local buyers (all were male at this particular time) quickly made their purchases during the auction, and it was said that these buyers then sell to the local fish processors at the village. The fish are distributed to the salting and drying facilities around the village. It was observed that these drying racks were built over piles of trash. As in many fishing village's markets and landing sites the sanitary conditions are less than adequate. Sometimes the products are quite visibly rotten - the eyes are red and the texture of the fish is soft. These fish may be processed as fish meal or may be salted and dried in the hot sun.

Further south along the coast of West Java there are more fishing villages and sites where seaweed culture (Eucheuma and jepun - which may be Gracilaria) is beginning to thrive. Beginning a seaweed culture venture requires a relatively large initial investment. One entrepreneur from outside the local area had begun his seaweed culture activities with an initial investment of Rp 10 million with a large number of rafts (1,000) covering a 10 hectare region. Local villagers are employed in seaweed processing which includes tying seed stock to the bamboo rafts. It was reported that only men are willing to work at seaweed culture activities such as knot tying which pays Rp 50/ knot. However, in Taman Jaya village an informant said that many women, both Buginese and Sundanese, work with a seaweed culturist. Most of the inhabitants here are Buginese. A prominent seaweed

culturist/fisherman said that women at Taman Jaya "are allowed by their husbands to have economic activities outside their households."

Seaweed collection and processing is an activity of fishermen's wives on some of the small islands north of Jakarta. Jepun is a naturally growing seaweed in the shallow waters surrounding Seribu Islands north of Jakarta. The harvest of this species usually begins during the west monsoon which occurs between September and December. Women, usually the wives of fishermen and older women (around 50 to 60 years), do the harvesting. There is a period during the west monsoon when the low tide may recede up to 100 meters from the coastline. During this period the women go to sea early in the morning. It takes about two hours by motor boat (starting from the fishing community and up to the seaweed collecting site). Lancang, Pari, Rambut and Untung Jawa islands are places where jepun grows at Seribu Islands. Collection usually lasts the whole day until the late afternoon. If the weather is good they can go and return on the same day, but when the weather is not good they will stay overnight. Two large sacks of seaweed will generate ten small bags which will sell for Rp 500/bag. Women on Untung Jawa island process seaweed into small jello-like "cakes". This product is sold in Jakarta for Rp 600/box.

5.1.3 South Coast of West Java

A visit to the TPI in Pelabuhan Ratu and the nearby fish landing site revealed a notable absence of female fish sellers. Perhaps the timing of the visit (early evening) was a factor influencing this lack of women's participation. A fish landing consisting of medium-sized tuna took place on the beach. The fishermen unloaded their catch in large baskets and displayed them as a crowd gathered around to watch. The local fish buyers were quite conspicuous and took careful account of the product they were purchasing. Inside the fish auction facility (this one was enclosed with walls) the buying and selling was dominated by men.

Observations made at a TPI in Cisolok Village, Cisolok Subdistrict, Pelabuhan Ratu District, were similar. There were no women selling fresh fish or buying the recent

catch. There were, however, some women selling processed fish (ie. fried shrimp cakes). Women in this village are engaged in productive activities outside of the home, and Cisolok Village receives assistance from the UNDP project described earlier. Originally, five KUB's were established each receiving Rp 20,000 as starting capital. They were engaged in making traditional foods to sell to local residents and fishermen who had just landed their catch. The groups did not last very long, and the reasons for this are unclear. One group managed to survive, the Barred Mackerel (Tenggiri) Group, and in 1988 all four of the ex-group leaders joined the Tenggiri Group.

This group is now known as KUB Tenggiri of Cikahuripan Fishers Women at Cisolok. The members consist of seven women and one man. Only two out of seven KUB Tenggiri's members are from fishing families. In 1989 this KUB received capital for their activities which was channeled through the local representative of fisheries at Cisolok. KUB Tenggiri chose to make homemade food and market processed fish. Starting from the initial capital the KUB was able to increase their capital up to Rp 260,000 in one month by selling abon ikan tuna (dried ground fish meal) for Rp 1,000/bag; kerupuk kulit (fish cracker or the skin of the skate), and; dengdeng ikan jangilus (sun-dried sweet fish meal made from swordfish) for Rp 1,750/bag.

In one year of activity (1989-1990), the KUB managed to do 40 production cycles of fish processing and market the product outside of Cisolok to Bogor, Sukabumi, Bandung, Cianjur, Cicurug and Garut. The success of this KUB has attracted the attention of women's group directors at the subdistrict levels and even at the provincial level. They have been given additional capital (for as much as Rp 500,000) to purchase plastic packaging for their products. By using a more attractive package, it is expected that KUB Tenggiri can expand its marketing to other regions. After having completed the UNDP training on business management and knowledge of bookkeeping, KUB Tenggiri is expecting the credit assistance of as much as Rp 3 million for future expansion.

5.1.4 North Coast of West Java

Eretan village, Indramayu District, West Java is under the administrative authority of Indramayu District Fisheries office. Fishermen landing their catch at Eretan may come from other ports such as Pekalongan and Surabaya and use gear such as mini purse-seines, dogol nets (Danish seines) and payang seines (with the use of tendak which is the local name for a fish aggregating device or FAD). These FADs used by the local fishermen are modestly constructed and reasonably priced (they range between Rp 10,000 - 15,000). The FADs operated in much deeper and rougher waters off of the southern coast of Java (Indian Ocean) and Eastern Indonesia which are used to catch tuna cost between Rp 5 - 7 million/unit. The capture fisheries which are landed at the Eretan fish landing site should go through the fish auction facility before being distributed to the various markets. Auction activities take place early in the morning between 5:00 and 6:00 and they may carry on throughout the day depending on the amount of catch. The auction participants are fresh fish traders and/or fish processors. All participants should deposit a certain sum of money before they can bid. The deposit money is submitted to the auction facility managers and ranges between Rp 50,000 - Rp 1 million. The amount of the deposit limits the bid. During the high fishing season any offer that goes beyond the amount of the deposit is very likely to win the bid. If the person wins the bid, he or she just adds to the balance of the deposit money. Another rule which governs auction participants is that they must be registered as a fisheries cooperative member.

It is interesting to note that since 1984, more than 50% of 112 members (65 members) of the fisheries cooperative "Misaya Mina" are women of various ages. In fact, observations at this fish landing site and TPI reveal that women are very actively involved in fish trading and in one sheltered structure in the vicinity of the TPI it was exclusively women who were buying and selling fish. People involved in these activities come from small villages such as Subang, Pamanukan, Karawang, Haurgeulis, Bangkir, Anjatan, Larangan and Parean-Patrol.

The fish auction ends at 4:00 P.M., so boats that arrive in the late afternoon usually store their catch until the next morning. Late in the afternoon female fish sellers may try to purchase the "consumption fish" These are fish caught by fishermen with hook and line while they are at sea which they are allowed to keep for themselves. The boat owners generally permit the crew to bring their own gear such as hook and line. Women were seen on the boats negotiating their purchases with the fishermen on the boats since they have to meet them on board. Other women who were afraid to climb the ladder up to the deck (the boats were quite high off the landing) to meet the fishermen had to buy their fish through those women who had climbed up. Interactions between the fishermen and women were observed from the landing pier. The deck of the boat was up quite high from the pier and it seemed very difficult to get the heavy basketload of fish down the ladder. To solve the problem some of the men on the boat threw the fish down from about fifteen feet onto the hard cement pier. Such rough handling procedures only hasten the deterioration of this easily perishable product. Post-harvest handling is an area which needs serious attention and requires considerable improvement.

The catch usually includes; kakap (baramundi), bawal (pomfret), remang and sometimes shark. Women who buy fish in the evening generally live nearby in the surrounding area. Those from outside the vicinity buy fish in the morning. Women usually sell their fish at the auction facility. In addition to the transactions for fresh fish, they also process fish (ie. dried, salted fish, shrimp paste and steamed fish) for later sale.

There are some KUB's located in Cirebon, West Java which are not related to the UNDP project. These are : 1) KUB Dahlia, situated at Samadikun village; 2) KUB Nusa Indah, located at South Pesisir, Panjunan Village, Lemah Wungkuk Subdistrict, and; 3) KUB Melati, at Cangkol. In 1970, they received credit assistance of Rp 2.5 million from the Governor of West Java to process fish. Each KUB received a different amount of credit assistance depending upon the number of its members: 1) KUB Dahlia with 15 members acquired Rp 750,000 (Rp 50,000/member); 2) KUB Nusa Indah with 20

members received Rp 1 million (Rp 50,000/member), and; 3) KUB Melati received Rp 750,000 for its 15 members (Rp 50,000/member).

All members may receive a loan which must be paid back in installments of Rp 5,000/month for registered fisheries cooperative members. Unregistered KUB members pay Rp 6,250/month. The loan should be paid back completely in ten months. All of the KUB activities are concentrated in fish processing (ie. drying, salting and boiling fish). Indeed, if one visits these villages the fish processing activities are readily apparent. Drying racks full of fish which have been split in half are a common sight and the smell of dried fish permeates the air. The most common fish here are bilis and tigawaja (these may be local names). The frequent gear type being used is the seine net.

5.1.5 Kedonganan, Bali

Unfortunately, the timing of field research in Bali coincided with two major Hindu holidays - Galungan and Kuningan. This meant that the District fisheries office was closed, permission was not granted at this level to conduct research, and key informants at the official level were not available for consultation. However, a visit was made to a fish landing site in Kedonganan where a wide expanse of sandy beach and a gentle interface between land and sea provided an ideal place for transporting fish from boat to the market. There were more than 100 boats with both sail and motor and many young men unloading the catches. Women (approximately 5 to 10) were actively buying and selling fish on the beach, and some were up on the market platform. It was reported that the people and boats were from East Java, but detailed information was difficult to get due to the circumstances described above. Many of the women were wearing gold bracelets and had gold teeth so it is assumed that their activities are somewhat profitable. Gold jewelry was seen on other fish traders at other sites in Indonesia and perhaps this provides not only a certain measure of status but also some financial security because these gold items can easily be sold or traded if the person is in a desperate financial situation.

5.1.6 South Sulawesi

The province of Sulawesi Selatan or South Sulawesi consists of eighteen coastal districts and five non-coastal districts. Based upon data from 1989, the population of South Sulawesi reached approximately 7 million people. It was reported that about 256,000 people are either fishermen (160,000) or fish farmers (96,000) (Fisheries Officer, Provincial Fisheries Office, South Sulawesi 1991). In the region of South Sulawesi four districts have been selected as "target" areas for a poverty alleviation program. They are: 1) Jeneponto district; 2) Takalar district; 3) Polmas district, and; 4) Mamuju district. Beginning in the 1989/1990 fiscal year, the Governor of South Sulawesi has promoted the motto of "harvest, process, and market" through various types of credit assistance which affect fisheries products and activities. The loans are intended to strengthen home industries. In the district of Takalar (which was visited during research for this paper) this funding has been allocated for fish processing equipment. The district has been equipped with TPIs, a wharf and a center for seaweed processing activities. The Provincial Fisheries Office reported that women are involved with seaweed collecting and processing, however, this was not observed.

Boats along the Buttueh river in Labakkon Subdistrict, Pangkep District bring passengers to their homes which are located among coastal ponds. Most of the people living in this coastal area are tenant fish farmers. Years ago this area must have been mangrove swamps but now it has been converted to vast stretches of brackish-water mariculture ponds. The pond culture system is polyculture with a combination of milkfish (Chanos chanos) and tiger prawns (Penaeus monodon) along with other shrimp species. The culture period lasts for approximately three months. If the operation is profitable then the tenant farmers receive about a 20% share. Also, during the culture periods the tenant farmers are allowed to catch white shrimps which are found in the ponds. The revenue which is generated from the sale of these shrimp is often used to cover the needs of the tenant farmer's family. The yield of white shrimp or other shrimp species which are

trapped during high tides may vary from day to day. The market price of white shrimp is Rp 3,000/kg (1 kg. contains 50-60 white shrimp). The yield ranges from 10 shrimp to 10 kg. of shrimp. The tiger prawn is a higher valued product with a market price of Rp 10,500/kg which contains about 30 shrimp/kg.

Shellfish are also harvested from the Buttueh River, often by women who live in the surrounding area. Shellfish collection in the river is more difficult compared to the coastal zone. Shellfish collectors at the river utilize 5-6 meter long bamboo rods as support for the boat as well as an anchor. The collection of shellfish in the river is done by divers who grope along the bottom. In the intertidal zone there is no need to dive, collection of shellfish is done by hand during low tide. Shellfish collection takes place twice a week between the months of July to November (during low tide). One collector can usually harvest about 5 liters/day. The shellfish are then sold to buyers for Rp 500/liter. The shellfish are sold to the buyers at the upper part of the Buttueh River, and an average of up to 75 liters/day may be traded there and transported to Pangkajene or Pangkep.

Sumpangbinangan is a village in the district of Barru where many of the women are organized into fish processing groups. The groups are not exclusively composed of women; however, females do dominate the processing activities. There are ten groups of fish processors which are made up of eight members each. The salted fish include banyar and gureh (these may be the names in the local dialect) which are captured mainly by a motorized liftnet. Salted fish are dried in the hot sun and are then sorted by the workers. They usually start the activities at 6:00 in the morning and continue working until 5:00 in the afternoon. During the peak season, a group of fish processors are capable of sorting approximately 200 baskets at 25 kg/basket every couple of days. On the contrary, during the low season the most that can be sorted is about 10 baskets. The dried fish is packaged in large cartons and is then transported to inland towns such as Sidrap, Toraja and Enrekang.

Another kind of fishery-related activity which is dominated by women in Galesong Village, Takalar District is the collection of small fish fry. Between the months of February and May women collect milkfish and shrimp fry for the mariculture ponds in the region. Their activities begin at approximately 5:00 in the morning and continue up until noon. They use a push net or sodo which is a triangular-shaped net (see photo 9) which can be pushed along the bottom in the shallow, coastal waters. During the high season they are able to collect as much as 2,000 fry and in the low season only about 100 individuals. The price for fish fry can be as high as Rp 80/fish during August and drops down to Rp 25/fish in January.

5.1.7 Female shrimp processors at P.T. Bonecom, Ujung Pandang, South Sulawesi

P.T. Bonecom has been operating since 1968. The main activity of this company is processing fresh shrimp into frozen shrimp for an export market. The products are tiger prawn (Penaeus monodon) and white shrimp. There are seventeen middlemen who supply the company by purchasing them from coastal pond workers. The major export destination of the frozen shrimp is Japan. The market price of the shrimp supplied by the middlemen is shown in Table 5.1. The price/kg. is the actual price given during the time of our visit to P.T. Bonecom in late May 1991. Prices for this product overseas (in Japan and Singapore) are not known but it is assumed that they are significantly higher.

Table 5.1: Market price of shrimp from middlemen.
Source: P.T. Bonecom Cold Storage, 1991

Shrimp species	Size/kg	Grade	Price/kg	Average price
Tiger prawn (Penaeus monodon)	6 - 12	I	21000	
	13 - 15	II	19000	
	16-20	III	17000	
	21-25	IV	15000	
	26 -30	V	10000	11000
	31-35			
	36-40	IV		5000
	41-50			
	51-60			
White shrimp	16-20			
	21-25	I	12000	
	26-30	II	10000	
	31-40			5000
	41-50	III	7500	
	51-60			
	61-70			
	71-100	IV	3000	
	101-120	V		

The heads are taken off the shrimp before being frozen. The heads are then processed as feed mixture. Thus, there are other companies and individuals who are supported by P.T. Bonecom. They include; feed mills, coastal pond operators and shrimp

fry suppliers. The coastal ponds which supply the processing center utilize 60 hectares of land through semi-intensive technologies. A hatchery business is also under the management of P.T. Bonecom in order to supply the 60 hectares of coastal ponds with fry. The production capacity of this hatchery is now about 2 to 3 million fry.

The majority (90%) of the company workers are women. In 1991, the records show that there are 143 female workers. Only three are in the administration office while the rest work in the processing facilities. Their responsibilities include; taking heads off of the shrimp, sorting them by size and species type, washing and cleaning the product, laying them out in the trays to be frozen, preparing the trays with plastic, putting them in the freezer, taking the frozen product out of the trays and putting them in the proper boxes. There may be other duties but these activities were observed during a tour of the facility. The work is much like that of an assembly line in a car factory. It is all done manually and seemed very redundant. All the workers must wear boots, gloves, aprons, head covers and most if not all had masks covering their mouths (see Photo 11).

The education level of the workers ranged from elementary school to high school. For processing, the education level is not a major requirement since it is the skill which determines the wage rate. The wages for the female workers are classified into four groups (see Table 5.2). This table shows that the majority of workers (53.8%) are in group A. The beginner (0 to 1 year work experience) is classified into group A and receives Rp 8,000 - 27,000/10 days. Wages are received on the tenth day. Only 6 (4.2%) workers are in wage group D. This group may receive as much as Rp. 40,000 for ten days of work.

Table 5.2: Number of female workers by group and salary/10 days.
Source: P.T. Bonecom Cold Storage, 1991

Group	Number of Workers	Salary/10 days	% in Groups
A	77	Rp 8,000-27,000	53.8
B	41	Rp15,000-35,000	28.7
C	19	Rp20,000-38,000	13.3
D	6	Rp25,000-40,000	4.2
Total	143		100

Most of the female workers come from the surrounding area. Dormitories are provided for those people who live far away. The company furnishes it with kitchen utensils, television, a video tape recorder and the workers get a medical allowance. Each female worker who lives in the dormitory has to fulfill responsibilities such as cleaning and cooking. Those who are fulfilling their responsibilities as cooks for their dormitories are freed from the obligation to work at the processing facility without getting their wages deducted. The company's work hours are from 8:00 to 5:00 with a lunch break between 12:00 and 2:00. During the high season when the supply is abundant, the workers will have to work overtime between 8:00 P.M. and 1:00 A.M. with wages ranging between Rp 250 to 300/hour. The following day they will have to be back at work as usual.

5.1.8 Summary

The preceding section has been concerned with depicting an overview of some of the activities which women are involved with in a few of the fisheries in various locations on West Java, Bali and South Sulawesi. Certain aspects have been described in order to set the background for the following section and points made in Chapter V. As mentioned in the section on Research Methods, the limited amount of time spent at each site and expanse of the regions covered may make the information seem somewhat cursory. However, this study is not an attempt to understand the total socio-economic situation of one fishery and/or fishing community in detail. Rather, it is an attempt at identifying factors influencing the roles of women in the fisheries of Indonesia.

Another important note here is that information on prices of fish at the market and elsewhere, as well as the profits of women who market fish (or collect shellfish, small fry, process fish, etc.), has been collected with the intention that it gives the reader a feeling for income levels and the standard of living. It is recognized that prices do fluctuate constantly depending upon supply and demand. Further, the presence of a foreigner during questioning may have resulted in biased answers (ie. higher price quotes if the woman thinks that she has a potential buyer).

5.2 Data Analysis

The major objective of this study is assess some of the economic roles of women and the socio-economic environment in which they live and work in the fisheries sector (marine fisheries) and determine factors influencing these roles. This information can then be used in fisheries development and planning. Further, it will help in understanding the impact of changes in the fishery on the roles and status of women in Indonesian coastal areas. The following information was generated from an analysis of the results from the questionnaire. The data from the 45 respondents has been grouped into the following categories: occupational variation of women in the fishery; marital status of women in the fishery; age distribution; educational levels; time-use data; control over the means of production, and; control over income.

5.2.1 Occupational variation of women in the fishery

Table 5.3 shows the different occupations of women according to their locations in Indonesia from the sample[2]. A total of ten separate occupations were found among the respondents in seven locations. This shows the diversity of female activities in the marine fisheries sector. However, 18 out of 45 respondents were involved with some form of fish processing activity (ie. drying, salting, boiling, cleaning, sorting, freezing, etc.). This is approximately 40% of the sample and it can be said that the supportive activities of women in the fisheries sector in terms of post-harvest handling and processing are quite high. This statement is also based upon observations made in the field. Fish trading was the second most common occupation with 14 out of 45 respondents (31%). The majority of fish traders in the sample were small-scale retailers (71%).

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[2] The chi-square statistic will not be used because the sample is not truly random as was described in Chapter II on Methods and Materials. Further, many of the expected frequencies are less than 1 in all of the tables, so this means that a chi-square for the one-sample goodness-of-fit test should not be used.

Table 5.3: Occupation of respondents according to location (N=45).

OCCUPATION	LOCATION			
	Pangkep District, S. Sulawesi	Barru District, S. Sulawesi	Takalar District, S. Sulawesi	Ujung Pandang, S. Sulawesi
Shellfish Collector	2			
Fish Processor (drying, salting)		2		
Housewife (Fisher's wife)			2	
Trawl Cleaner			1	
Fry Collector			2	
Shrimp Processing/ Cold Storage				6
Net Worker				
Fish Retailer				
Middleperson				
Shop Owner				

OCCUPATION	LOCATION		
	Muara Angke, N. Jakarta	Cirebon, West Java	Indramayu, West Java
Shellfish Collector			
Fish Processor (drying, salting)	7	1	2
Housewife (Fisher's wife)			
Trawl Cleaner			
Fry Collector			
Shrimp Processing/ Cold Storage			
Net Worker	4		
Fish Retailer	9	1	1
Middleperson		2	2
Shop Owner		1	

The importance of disaggregating income by sex and evaluation of women's economic participation outside of the household was discussed in Chapter 1 This is especially true of female activities in the informal sector because their contributions in this sector and to society are often not revealed in labor force participation statistics. Table 5.4 compares the occupation of respondents with their incomes/day. Percentages show the number of people in each occupation divided by the total number of respondents for each income level. The income levels were grouped into the following categories:

Low = Rp 0 - 875
Average = Rp 876 - 4000
Middle = Rp 4001 - 10000
High = Rp 10001 - 20000
Highest = Rp 20001 - 150000

Table 5.4: Occupation of respondents compared to income/day (N=42).

	INCOME LEVELS					
OCCUPATION	Low	Average	Middle	High	Highest	Row Totals
Shellfish collector		1 3%	1 14%			2 5%
Fish processor (drying, salting)	1 50%	6 20%	5 71%			12 29%
Trawl Cleaner		1 3%				1 2%
Fry collector		2 7%				2 5%
Shrimp Processor/ Cold Storage		6 20%				6 14%
Net worker		4 13%				4 10%
Fish retailer	1 50%	8 27%	1 14%		1 50%	11 26%
Middleperson		1 3%		1 100%	1 50%	3 7%
Shopowner		1 3%				1 2%
Column Totals	2 5%	30 71%	7 17%	1 2%	2 5%	100%

The classificaton is based upon the distribution of the data. It is obvious from the table that most of the respondents were in the average income level category - 30 out of 42 respondents (there are three less respondents here because missing data was sorted out and only women economically productive outside the household were counted). However, the actual mean for income was Rp 7850/day (approximately US$ 4.00/day)(N=42). This may not truly reflect the average income/day because it seems too high and is due to the fact that the distribution is skewed to the right. The median income level was Rp 2350/day (US $1.23/day) and this seems to be more accurate just based upon unstructured interviews in the field - women involved with small-scale fishery activities seem to work with a small profit margin of approximately Rp 2000/day (the mode for the sample was Rp 2000/day) (approximately US $1.00). The most profitable activity in the sample was fish trading as a middleperson. This occupation requires greater capital input, however, and this may explain the small number of female middlepersons. Although another factor influencing the occupation is the location (ie. access to supply and to the markets for fish).

Another point that can be made here is that working with high valued species bound for an export market does not guarantee higher income levels. The average income for the respondents who worked at the shrimp processing factory was Rp 2150. This figure is less than the mean and median for the entire sample. The product that they are working with commands a very high price on the international market. However, these women who are responsible for its processing remain marginal to the economic benefits to be gained from this higher valued commodity. On the other hand, if the workers room and board were factored into their incomes and the benefits of having a regular job for women who lack other opportunities, then their situation may not seem so exploitative.

5.2.2 Marital status of women in the fishery

The husband's occupations from the sample and information gathered from interviews varied, although many were involved in fishery activities. Some examples were tenant farmers (caretaker of tambak ponds), fishermen, and local government officials.

One husband did not work due to health problems and his wife who was a fish processor had to support the family. Out of the 45 respondents, 10 were divorced (22 %) and all of the shrimp processors at P.T. Bonecom Cold Storage were single women. The mean income of the husbands was approximately Rp 3394/day (N=31). At the individual family level there is not a large difference between the incomes of men and their wives who are economically productive outside of the household.

Information gathered on individuals reveal the broad range of female activities in the fisheries sector in Indonesia. Individual factors influencing women's roles in the fishery include marital status (discussed above), age, educational levels, time-use, control over assets of production and income. These individual factors can provide planners with micro-level information on women's productive activities within a village, large community and/or region. Such information can reveal the differential access of males and females at all ages to economic and social resources within the household, the community, region and nation. Further, each factor will have a differential impact on types of female activities and activity rates.

5.2.3 Age distribution

The majority of women were between the ages of 25 and 42 (about 64 %). The mean age was approximately 36 years and the median was 35. Young women (<20) were not seen in the markets or even at the fish landing sites, although young boys were seen buying and selling fish at a site in South Sulawesi. From observations made at the shrimp processing factory in Ujung Pandang it seemed that there were quite a few very young women working there (below 20 years old). However, those who answered the questionnaire were all between 26 and 31. Except for those women at P.T. Bonecom Cold Storage, all of the respondents had been married or still were married and the majority had children. Perhaps these women had become involved in fishery activities out of economic necessity since there are not many other options for employment in many of these coastal areas. Family size tended to be relatively large with the average number of family members

about 5 (the median was also 5, N=45). The family members (often children) take over household responsibilities when women go to work outside the home. It is not uncommon in the village areas to see a young child holding and taking care of the youngest child (even the babies).

5.2.4 Educational levels

Educational levels are compared with occupation in Table 5.5. The educational levels of the respondents varied and the majority had finished elementary school or had gone for at least a few years (69% of the 45 respondents). Only 4 of the respondents had gone to high school and they were all working at the shrimp processing factory in Ujung Pandang, South Sulawesi. However, as discussed previously educational level is not a criteria for obtaining a job at the factory or for being placed in the the higher wage group at the factory. Workers are judged on their "skill level" so a women with only a couple of years of elementary schooling who works fast may advance to Group B, C, or D for her wage rate.

It is not surprising that most of the women involved in fishery-related activities have relatively low levels of education. Women who have finished high school or have had some schooling or training past high school would generally look for employment in sales or in an office. These kinds of jobs carry more social status for someone who is more educated than the general populace and do not require the difficult physical labor of fish processing or fish marketing (ie. gutting and cleaning fish, carrying basketloads of fish to and from the market).

Table 5.5: Occupation of respondents compared to their educational levels (N=45).

	EDUCATION			
OCCUPATION	None	Elementary	High School	
Shellfish collector	2			
Fish processor (drying, salting, etc.)	2	10		
Housewife (Fisher's Wife)	1	1		
Trawl cleaner		1		
Fry collector	1	1		
Shrimp processor/ Cold Storage		2	4	
Net worker		4		
Fish retailer	4	7		
Middleperson		4		
Shop owner		1		
TOTALS	10 (22.22%)	31 (68.89%)	4 (8.89%)	100%

The processing activities which are common in the small-scale fishery are not complex and do not require very much technological input. Thus, these kinds of skills are easily acquired. Fish trading requires more intellect and at least a basic knowledge of simple math. Those women who are successful fish buyers, wholesalers and retailers may have natural abilities for business or an innate economic sense and/or may have learned their skills through informal means (ie. watching other people, asking questions). Economic necessity is a motivating factor and if the husband cannot provide for the family (for those who are still married) then the educational level may not be as significant for success.

5.2.5 Time-use data

Time-use can be a very important factor influencing women's economically productive roles outside of the home. Information on time-use can also be an important indicator of whether a fishery development project may be appropriate or if it will negatively impact other important needs. For example, if a significant amount of time and

energy must be expended to fulfill basic needs such as fetching water, boiling water or gathering wood (fuel) for cooking, then time which could be spent on income-generating activities is limited. Respondents were asked what time they get up every morning and begin their household chores. The average time was 4:30 A.M. (N=45) and the most frequent response (mode) was 5:00 A.M. The majority of respondents would then work mainly at three or more of the following household activities; boiling water, cooking, house cleaning, doing laundry and/or child care. The average time for beginning work outside the household was 7:00 A.M. The median and the mode, however, were 8:00 A.M. A few of the respondents (they were all fish processors) would immediately begin their extra-household activities as soon as they woke up very early in the morning (ie. 3:00 A.M.). These women would buy the fish to be processed at an early hour because that is usually when the fishermen would land their catch in their village.

The average amount of time for working outside the household among the respondents was approximately 7 1/2 hours. However, the most frequent response was 10 hours. This data shows that women do not have a lot of idle time on their hands if they are involved in economically productive activities outside of the household. Contrary to other studies conducted in the coastal communities these women do not have a lot of "leisure" time although the slow pace of life found in many of these areas may lead people to believe that they do.

5.2.6 Control over the means of production in the fishery

The control over the means of production or the assets of production is a major factor influencing the differential levels of female participation in the fisheries sector of Indonesia. Based upon data collected and observations in the field, the majority of women do not own fixed assets such as boats and nets However, it is very possible that in some parts of Java and elsewhere in Indonesia women do own and control such property as boats and mariculture ponds. In the market situation, women are able to enter into the

buying and selling of fish and fish products entrepreneurially, but they seem to do so on a smaller-scale compared with that of men.

In Muara Angke, North Jakarta only 3 out of 20 respondents owned production assets. The occupation of all three of these women was "net worker" and they owned nets and two owned boats. On South Sulawesi 4 out of 15 respondents said that they owned fishing gears. These included; four boats, three nets, two engines, two fishing lines, a fish trap, trawl, and tent. Along the north coast of West Java the women did not claim to own any production assets. It may be tenuous to draw conclusions from such little data, however, out of a total of 45 respondents only 7 (approximately 16%) owned fishery-related fixed assets of production. All of the respondents did own, rent or frequently buy some kind of equipment to run their activities and these ranged from baskets, buckets, pans or tubs, drying racks, knives and plastic to ice and firewood. The female shrimp processors at P.T. Bonecom in Ujung Pandang were given lab coats, boots and gloves to wear during their work. From observations made at markets and processing sites it seemed that women were not only involved on a small-scale but also frequently dealt with lower valued species such as anchovies and mackerel. Women do of course deal with a wide range of fish species and products, but the high valued species such as shrimp and tuna may be controlled by large-scale fresh fish wholesalers and fish buyers. Further investigation is needed in the area of gender distinctions in the marketing field before conclusions can be made.

5.2.7 Control over income

Earning an income through productive activities does not necessarily mean that one will have control over that income. In Indonesia, however, women have a high level of control over the money that they make. Out of the 43 respondents who are participating in income-generating activities, only three shared their income with another family member, and in these three cases it was the women's mother who kept part of the money. The results of interviews and of the questionnaire reveal that women in Indonesian society

control money at the household level to a large extent. They also have a great degree of autonomy on decision-making in the household concerning financial expenditures. Out of the 45 respondents, 15 made decisions by themselves on expenditures for the household. Of course, 6 of these women are living at the dormitory facilities provided by P.T. Bonecom Cold Storage and are not living in the typical family situation. For those women who were married, 20 reported that they make decisions in consensus with their husbands regarding household finances. Only in two households was decision-making regarding money completely dominated by the husband. Although women may not be very involved with political decision-making at the village level and above, they seem to command a strong presence at the household level in terms of control over financial resources and decision-making.

This shows that improving women's income generating opportunities through fishery development programs could improve a women's status within her family and community. However, as discussed in the section on Theoretical Perspective in Chapter III, earning an income is a necessary, but not sufficient condition for improving women's status. Women must have other attributes such as control over their produce, there should be demand for the produce, and females must be involved with political activities.

CHAPTER VI

DISCUSSION

6.1 Factors Influencing the Role and Status of Women in Indonesian Fisheries

Consideration of the multitude of factors influencing the various roles and status of women in fishery-dependent communities is important for understanding the relationship between change in the fishery and its impact upon women in the community or region. Before fishery development strategies are conceived of and implemented, it is necessary to generate a basic understanding of the relationship between the environment, economic and social organization in a particular area. Since the fisheries sector in Indonesia is comprised of a variety of large-scale and small-scale production, a diversity of fish and fish products, many different processing techniques, distribution and marketing channels, it is difficult to make general statements concerning the role of women. Instead, the situation of women tends to be site-specific. This study provides an analytical framework with which research and development planners may assess the multifarious roles and status of women in fishery-dependent communities. Group factors or macro-level factors are those that influence all women in a community or region and will be discussed in the following pages.

6.1.1 Socio-cultural Factors:

Division of labor. The division of labor by sex is a phenomenon prevalent across countries and regions (Boserup 1970) and it is also found in small-scale fishing communities. In general the primary tasks of Indonesian women (most dominant in the village) are to stay home, cook, clean and raise the children (PPSW 1989). Thus, women's household responsibilities limit their participation in fishery-related economic activities.

Fish processing activities can be accomplished in and around the household. Thus, observations in the field reveal that female participation in the fishery is very high in

processing activities - drying, salting and packaging of fish and fish products. The processing activities befit the socio-cultural value system because these kinds of economic activities may be accomplished in the presence of small children and women do not have to venture far from household. If women do participate in harvesting operations, these usually take place in the intertidal zone, where small children can accompany the women during collection of shellfish, small fish fry and other aquatic organisms.

Before proposing changes in fishing communities, decision makers must consider the overall workload of the women in the community and take account of their other household duties as well. Introducing improved technology and methods for use by women will often increase their workload. Although this increased economic activity may permit them to earn more income, more advanced technologies may also burden women with additional work for which they receive no economic reward and negatively impact family welfare.

Religious beliefs. The differential levels of female participation in fishery-related economic activity in the various regions of Indonesia may be influenced by religious beliefs regarding the role of women within the family and community. Strict moslem practice may prohibit women from participating in market activities in some areas of Indonesia.

Women in Bali were actively buying and selling fish on the beach at a fish landing site. In South Sulawesi, fishery officers reported that women seldom participate in marketing aspects or the buying and selling of fish. The Hindu influence on Bali and strict Moslem practices in South Sulawesi may be an important factor affecting women's economic roles in the fishery. Indeed, there was a notable absence of women at two fish landing sites that were visited by the authors and research assistants in South Sulawesi.

However, Zerner (1991) describes the increasing role of women in the fishery at Majene, South Sulawesi. He writes that their fish marketing and distribution activities have expanded over a twenty year period. An important point here is that although religious

beliefs may be an important factor influencing (perhaps inhibiting) the participation of women in fishery-related economic activity it certainly is not the only one. Economic and technological factors in the fishery also play major roles.

Ethnicity. Based upon the primary data gathered during field research, it is difficult to draw conclusions regarding the relationship between the ethnic groups of women and their participation in fishery activities. However, a study conducted by the Environmental Studies Centre, University of Nusa Cendana, Kupang, East Nusa Tenggara, documented the fishery activities of women of differing ethnic backgrounds (CIDA 1987). Their study came to the following conclusions:

Ethnic Group	Fishery Activities
Sabonese women Island of Sabo	Cultivating sea grass, foraging for fish and shellfish, salt-making
Semauan women Island of Semau	Harvesting sea grass, foraging for fish and shellfish
Bajo women East Kupang	No activities
Buginese women West Kupang	Dried and marketed fish for male family members
Floretian women	Harvesting nearshore milkfish

Of course, this study only focused on certain areas of Indonesia and the findings are not conclusive for all of Indonesia and female activities may not be limited to those described above. However, understanding the relationship between ethnic groups and their differential levels of participation in fishery-related activities in a given area will help development planners make appropriate decisions regarding fishery development activity.

Power relationships. Oftentimes, the female leaders in a community are the wives of male leaders. In general, the female KUB caretakers were married to the Kepala Desa or other officials of a village or community. Thus, the high status of the female is derived in part by her husband's high status. This relationship is important to consider when targeting leaders for a fishery development project. However, project planners

should be careful not to form elite groups of women during project implementation or alienate other individuals from the project.

As Sanday (1973) pointed out in her research, contribution to production is a necessary but not sufficient condition for high female status. Females must also participate in political activities and/or solidarity groups devoted to female political or economic interests. The KUB's found in many coastal areas may be considered solidarity groups devoted to economic interests. However, based on field research it is difficult to tell whether the presence of such a group enhances the status of women in the particular community. In Cisolok it was reported that most members of the community were unaware of the KUB's activities or success. More research would need to be done on people's perception of the KUB in terms of its importance in the community and economic strength.

It did not seem that KUB members participated in activities which could be considered political. It is probably safe to say that women hold very little if any leadership positions which could be considered political. Although women do work in government offices, their jobs are often clerical in nature. There are a number of female solidarity groups, but as mentioned earlier, the membership is often dependent on the husband's status. Thus, female participation is derived from husband's official status. For example, Dharma Wanita (Women's Association for Civil Servants Wives) is a group supporting leadership and managerial courses, and membership consists of the wives of civil servants and female civil servants (CIDA 1987).

Kin-based production. The economic role of women in fishery-related activities is often greater when the husbands or other family members are involved with fishing or aquaculture practices. If the husband is a fisherman and his wife or other family members process and/or market the catch, profits can be maximized. Thus, female economic activities contribute to family welfare, although their efforts may not be enumerated because they do not work for wages.

Observations made in the field support the existence of petty commodity production groups. However, one must remember that social and economic ties within a community tend to be site-specific and production groups in the small-scale fishery are definitely not strictly kin-based.

Social activity. Sorting the dried fish and other processing methods which take place in the community allow women to socialize with one another. During their activities women can talk with one another, exchange stories and information on important community matters. The potential importance of processing as a social activity should not be underestimated when implementing a fishery development project to enhance the roles of women. Social activities of women may be reduced by new forms of technology.

A fishery development project in West Africa was not accepted by its recipients for this very reason. It has been stated that the "Altona smoker" oven was not well received by women because it limited their interaction with each other in their communities (personal contact). Fishery development projects which interrupt people's daily lives to a large extent have a high potential for failure and may result in an unintentional misuse of money. Thus, the social aspects or non-economic functions of the marketplace or processing areas should not be underestimated in project planning.

6.1.2 Economic Factors:

Economic necessity. Women involved with fishery related activities may participate in the activity because they lack alternative work opportunities. During informal interviews some women responded that the reason they sold fish is because they "needed" money or their husband's income was not adequate. Studies have shown that the poorer the household, the greater the relative contributions of women in income generating activities (CIDA 1987). Conclusions drawn from research conducted throughout the Third World state that:

1) the economic performance of households in the lowest income brackets is directly related to the economic activity of women in these households;

2) the importance of women's productive role increases with poverty but the extent of their reproductive functions does not diminish, resulting in a dual burden for poor women, and;

3) a major goal of development policy should be to increase the productivity and income of women in the lowest income households (in Dixon-Mueller and Anker 1988).

A good example of economic necessity being the driving factor behind the role of women in the fishery is found in South Sulawesi at the shrimp processing factory. These women work long hours for low wages, but during interviews some respondents replied that there were no other viable alternatives.

Differential access to high value resource. Fish and fish products are oftentimes the most valuable resource in and around coastal communities. Due to infertile soil, areas along the coastline are generally not well-suited for many agricultural practices. Therefore differential access to the valuable resource and resource allocation in coastal communities influences the participation of women in fishery activities.

Ownership of the means of production to exploit the resource is more often than not dominated by men. The results of the questionnaires suggest that women do not have a high level of control over the means of production in the fishery. Therefore, women are limited to marginal roles. Greater control by women over the means of production will increase their economic role in coastal communities.

Intensive tambak production yields a high value commodity and the role of women is predominant in the processing activities. For example, the shrimp processing factory in Ujung Pandang employs approximately 140 women in sorting, cleaning and packaging activities. Although this role is very important, it is marginal to the production and marketing of this valuable resource. They are not in decision making positions, nor do they have access to or control over the means of production. Attention should be given as to how women can gain more control over the high value resources in coastal communities.

Equity and the significance of small-scale income. Many of the women in fish markets or at fish landing sites are buying and selling fish in small quantities. Their

activities are dominate in terms of the retail markets and not as large-scale buyers. Of course, there are exceptions where women may control the whole catch from a fishing boat. However, the significance of small-scale income should not be underestimated because it is a way of spreading a small amount of capital equitably throughout a village. For example, in Panimbang village near Labuan, West Java there were many individuals (women) selling dried fish in a particular area with very low profit margins. This may seem a very inefficient way to market and distribute fish, and a fishery development project may try to alleviate such inefficiency. However, planners should consider that many individuals may be gaining profit, however small, from the fishery resource and that alternative work opportunities will need to be created if more efficient, less labor-intensive methods are introduced.

Lack of credit or access to credit. Many women lack the capital to invest in fishery-related activities. Those women who were involved in formal KUBs had usually received a small amount of starting capital. However, out of the 45 respondents in the sample, only one had borrowed money from the local government and four others had borrowed from other retailers. The lack of credit or access to credit may be one economic factor affecting the role of women in the fisheries sector and relegating their activities to largely marginal positions. Fishery development projects could try to focus on credit needs of women because even small loans help stimulate increased economic participation. In order to reach the neediest people, credit assistance in the form of small loans could be attempted without collateral since women in rural areas often lack assets. People who work with credit assistance projects report that the rate of repayment on loans is very high among women (personal contact USAID, 1991).

Further, as the data from this study suggest women have a high level of control over their incomes. Because of this, increasing women's access to credit may have a positive correlation with the increase in income and overall family welfare (since mothers income often goes toward daily food needs and children's education).

Transmigration policies. The impact of transmigration policies on the role of women in the fisheries sector is not very well known. It would be interesting to assess the relationship between the settlement of coastal communities outside of Java where the marine resource is not highly exploited and the participation of women in fishery-related activities. Further, fishery projects in transmigration areas should consider the role of women and how it can be enhanced.

6.1.3 Technological Factors:

Technological Change. More advanced technology or more efficient equipment to capture, culture, process and market fish and fish products may negatively or positively impact the roles of women. If women do not have access to the technology or do not understand it, then they certainly will have difficulty in benefitting from it. Intensification of tambak production requires more complex technologies than extensive culture. In the absence of education and training in aquacultural production, women as a group will remain marginal to the economic benefits of intensification since they may participate in low-income earning activities.

Changes in fishing gear technology of fishermen may be a significant factor affecting the role of women in the targeted fishing communities. The introduction of technology such as fish aggregating devices (FADs); new types of nets; large boats, and/or more powerful engines could result in either reducing or increasing female participation. Zerner (1991) found that the increasing role of Mandar women in the marketing of fish in Majene area coincides with the dramatic increase of fish obtained from larger numbers of roppong. Motorization of the roppong fishery and the increased use of ice are other technological inputs influencing women's traditional marketing roles and increasing their economic participation.

Easily acquired skills. Many processing activities require a low level of technology and these skills are easily transferred to women. The drying, sorting and

salting of fish are easily acquired skills with a short amount of time and training. The methods used in the many villages tend to be very basic.

Use of indigenous materials. Use of local materials in the different kinds of tools and technologies requires less capital output, thereby allowing people with very little capital to engage in fishery-related activities.

Labor-intensive. Lower levels of technology are oftentimes labor-intensive. This allows for more job opportunities and perhaps a more equitable distribution of income. Further, in large-scale production enterprises such as P.T. Bonecom Cold Storage, the activities are labor-intensive and require a relatively high number of employees.

6.1.4 Ecological Factors:

Seasonality of the resource. The seasonality of different living species influences women's (and men's) roles in the fishery in terms of when and where they can harvest and/or market fish and fish products. Half of the respondents (20) from the questionnaire (N=40) reported that their activities were done on a seasonal basis. For example, in South Sulawesi women in one village used the push-net to catch fry in coastal waters during the months of February through May. This factor is an important aspect of the fishery because women may participate during the peak season of certain species and either lack opportunities for generating income or engage in different productive activities during the off-season. Pollnac and Malvestuto (1991) also noted that the role of women in the fishery along the Kapuas River in West Kalimantan varied with the seasons. During peak season, women spend full time fishing at some areas on the river with a variety of gears (hook and line, gillnets). But during the low fishing season they work in other activities (collecting latex and/or working in rice fields, household gardens, etc.).

One implication of the seasonality factor is that if a fishery development project is introduced in an area, the activity may contribute to earnings for part of a year, and perpetuate or cause underemployment during the other months.

The seasonality of the resource may also result in the seasonal migration of fishermen. This impacts social and economic organization of a community. Of course, if the role of women is to market fish and fish products they may not have access to the product when fishermen are fishing and landing their catch somewhere else. Thus, the economic role of women may decrease during seasonal migrations and this may negatively affect family welfare. Fishery development projects should consider a diversification of economic activity during off seasons.

Dynamic nature of the coastal environment. The marine environment is constantly changing in terms of both its physical and biological features. Again, this factor influences when and where women may participate in the fishery. Coastal profiles, boundaries and the living resources are constantly in a state of flux. Therefore, participation in fishery-related enterprises may be risky and do not guarantee the participants continuous and long-term benefits. Keeping this in mind, fishery development projects should be monitored and evaluated after implementation.

6.1.5 Other factors

Other factors are those which influence individuals and are generally more personal in nature. These include: age; marital status; time-use; control over assets of production and income, and; educational levels. This information was collected in the questionnaire and described in section 5.2. These other factors can provide planners with micro-level information on women's productive activities within a village, large community and/or region. Such information can reveal the differential access of males and females at all ages to economic and social resources within the household, the community, region and nation. Further, each factor will have a differential impact on types of female activities and activity rates.

6.2 Conclusions and Implications of the Study

In conclusion, I feel that the data suggests at least two important points. Judging from the various occupations with which women are involved along with their daily incomes, the first point is that it seems as if women are marginalized in the fisheries sector. By this statement I mean that women are definitely playing active supportive roles, however, they are not in positions where they can make decisions or control their means of production. The second point is made with specific reference to fish marketing. It is clear that women are involved in the marketing of fish and fish products on a small-scale (in small quantities) and that they generally deal with the lower value species.

Firth (1984) made a similar conclusion regarding women in the fisheries of Kelantan's Malay society, and he will be quoted here in length because the similarities are somewhat striking:

> And it does seem too that the slant which gives to men the production roles carrying most interest and prestige appears again in the system of controlling the means of production, where rights over the most important items of fishing equipment tend to be the property of men. The same slant is perceptible also in the marketing field in the Kelantan fishing economy. Women can enter the market situations entrepreneurially but they do so for the most part on a small scale as compared with men. As with items of fixed capital such as boats and nets, the limitations of the socio-legal code operate to their disadvantage. Kelantan Malay society is relatively egalitarian in Muslim terms. But general patterns of male dominance in control and use of property and in commercial combination have tended to restrict the economic adventurousness of Kelantan women *to local ownership of the occasional boat or net and to small-scale fish dealing*. At the same time the general nature of the economy has meant that while transactions of larger scale in fish have tended to be the prerogative of men, these men have not been fishermen but commercial entrepreneurs. Modern technical changes have intensified this process. Both in Tikopia (Pacific Island) and on the Kelantan coast, in different ways, the forces of modernization, which have brought women into more direct relationship with a world of male capital control, have resulted in a restriction of the economic opportunities open to them (p. 1169).

Although a gender analysis like Firth made concerning the socio-economic structure of two communities was not done for this study, it is being inferred on the basis of observations in the field as well as the results of the questionnaire that women's role in the fisheries of Indonesia is assured but limited to a certain extent.

The reasons for this limitation need to be investigated further. As it was mentioned in the beginning of this thesis, the exploratory nature of this study means that the inductive method is appropriate so that new questions and/or hypotheses can be formulated. Some of the questions that have resulted from this study are:

1) Are there fisheries in Indonesia where women are large-scale buyers or fresh fish wholesalers?

2) If there are, then what factors are influencing this role or what set of circumstances (economic, social, political) has allowed for or encouraged this kind of participation?

3) What has been the impact of technological changes in the fishery (capture and culture) on women in specific areas?

4) Why are so many women involved with fish marketing at Indramayu (65 of 112 members of the fisheries cooperative are women)?

5) What material and/or ideological conditions are influencing the participation of women in fishery-related activities in site-specific areas?

The implications of this study are obvious - more research should be conducted However, I feel it is important to focus more closely on the north coast of Java because the marine fisheries are heavily concentrated in many cities and towns along that coast and the participation of women is relatively high. In-depth case studies are necessary to provide community profiles and more extensive knowledge in specific areas since variations in environment and technology in fishing communities are considerable. Comparative studies of the kind that Firth (1984) conducted should explore the similarity and contrast between roles of women in different areas of Indonesia. A small amount of groundwork has been laid through this study and it is hoped that more efforts be made in the future.

6.3 Recommendations

6.3.1 Guidelines for Incorporating Gender Considerations in Fishery Development

Gender is an important variable in the process of development. The significance of incorporating gender considerations in development activities was described in the beginning of this paper. The preparation of a Long Term National Fisheries Development Strategy by the Government of Indonesia provides a "window of opportunity" to develop strategies which will enhance the roles and status of women in the fishery sector. Women are key players in sustainable economic development. Thus, the potential contribution of half the population will be wasted unless assistance efforts allow women to become full participants and beneficiaries in the development process. One of the major goals of the National Fisheries Development Strategy should be to optimize and expand the role of women in both large-scale and small-scale fisheries production, processing and marketing, to ensure sustainable growth of the resource, social progress and enhanced family welfare.

To achieve these general goals, the following guidelines are suggested:

- Develop strategies for collection of needed data in specific areas.
- Disaggregation of data by gender.
- Include specific and explicit strategies to involve women in fisheries development projects.
- Consider the sociocultural, economic, technological and ecological factors influencing the role of women in the fishery or region where fishery projects will be implemented.
- Identify where gender may be an important variable in the social and economic production systems that will be affected by development activities. For example, allocation of labor, sources of income, financial responsibilities, and access to and control of resources (development assets such as capital, land, technology, etc.).
- Identify and analyze the implications of the gender variable for development design or for introduction of new technology/activity. For example, constraints to participation of women in the development activity and opportunities to increase economic productivity of women through an understanding of their special skills and knowledge.

- Time use studies and measurement of women's contributions to total family incomes, particularly in coastal communities, for purposes of identifying areas that need strengthening and future opportunities for women in the sector.

- Include the gender variable in technology needs assessment and in the potential impact of new technology.

- Include the gender variable in financial analysis by using data on women's income and expenditures, and the financial ability of women to participate in project activities.

- Include the gender variable in economic analysis by assessing costs and benefits of project for both male and female members of the household. For example, opportunity costs of labor, access to productive resources, status, and the ability to meet household expenses.

- Project monitoring and evaluation should include assessment of short- and long-term, direct and indirect impact on women's and men's income, expenditure patterns, division of labour and access to productive resources (adapted from USAID 1989).

A U.S. AID Policy Paper on Women in Development (1982) stipulates that "the key issue underlying the women in development concept is ultimately an economic one: misunderstanding gender differences, leading to inadequate planning and designing of projects, results in diminished returns on investment."(p. 3) It is hoped that a Long Term National Fisheries Development Strategy for Indonesia will avoid "diminishing returns on investment" by inclusion of women in fisheries development strategies and through their effective implementation.

6.3.2 Strategies for Incorporating Gender Considerations in Fishery Development

Recommendations and strategies for enhancing the roles of women in the fisheries sector are summarized as follows:

- Continued and expanded governmental support for women through programs instituted under ministries with responsibilities in the fisheries.

- Improvement and expansion of a national data base on women's socio-economic role in the fisheries sector through disaggregated data and comprehensive assessment of the sociocultural, economic, technological and ecological factors influencing the roles and status of women in fisheries in specific regions.

- The promotion of equitable access to technological inputs through technical training and academic training for women in activities that indirectly or directly support the fisheries sector (aquacultural technology, fish processing, marketing strategies, etc.).

- The promotion of equitable access to credit for women involved with economic activities in the fisheries sector.

- The enhancement and promotion of extension services to improve or strengthen the roles and opportunities for women in the fisheries sector. The training should include subsistence fishing, aquaculture, handling, storage, processing, product development, quality awareness and marketing.

- The encouragement of and support for extra-household forms of organization for women's labour (i.e. KUBs or Collective Women's Business Group).

- Increased number of fishery projects that improve the role of women in terms of employment opportunities and income-generating activities.

- The support and encouragement of NGO programs that focus on enhancing the role of women in fishery-related activities.

- Include a Women in Development specialist in planning and implementation of fishery development projects and programs to ensure that women's issues are addressed and negative impacts are avoided.

- Legal protection for women involved in both informal and formal sector, fishery-related activities.

APPENDIX II

SAMPLE QUESTIONNAIRE

Kuestioner Tentang Peranan Wanita:
(Questionnaire on Women's Role)

1) Nama responden:
(Name of respondent)

2) Usia dari responden: kurang dari 20 thn.
(Age of respondent) (less than 20 yrs.)
20-30 thn.
31-40 thn.
> 40 thn.

3) Berapa lama anda belajar di sekolah?
(How many years did you study at school?)

4) a. Apakah agama anda? Islam
(What is your religion?) Kristen (Christian)
Hindu
Lain-lain (Other)

4) b. Where are you from in Indonesia (ethnic group)?

5) Apakah anda sudah menikah/bercerai?
(Are you married/divorced?)

6) Berapa jumlah anggota keluarga anda?
(How many members are in your family?)

7) Jam berapa anda bangun tidur setiap pagi?
(What time do you get up every morning?)

8) Kapan anda mulai melakukan pekerjaan-pekerjaan rumah tangga?
(When do you start your household chores?)
mengambil air (boil the water)
memasak (cooking)
membersihkan rumah (cleaning the house)
mencuci (doing the laundry)
mengasuh anak (looking after the children)
lain-lain (others)

9) Kapan anda bekerja di luar rumah tangga?
(When do you start working outside your home?)

10) Apakah kegiatan anda yang utama?
(What are your main activities?)
menangkap ikan (fishing)
mengumpulkan ikan (collecting fish)

menjual ikan (selling fish)
pengolahan ikan: (fish processing)
- mengasinkan (salting)
- mengeringkan (drying)
- memasak ikan (cooking)
- pengasapan ikan (smoking)

karyawan pada pusat pengolah ikan
(labor at the fish processing center)
karyawan pada tambak budidaya/perikanan laut:
(labor at coastal mariculture)
- rumput laut (seaweed)
- jaring apung (cage culture)
- tambak (shrimp)
- kolam (fish ponds)
- membuat jala atau peralatan nelayan lainnya (net making or other fishing gears)

11) Apabila anda bekerja pada perikanan budidaya skala kecil, apakah perkerjaan anda?
(If you work at mariculture, what is your activity?)

mengumpulkan pakan ikan (collecting fish feed)
memberi makan ikan (feeding the fish)
memberi pupuk pada kolam (fertilizing the pond)
memanen ikan (harvesting the fish)

12) Apakah kegiatan anda yang berkenaan dengan perikanan hanya bersifat musiman atau berlangsung sepanjang tahun?
Are your fishery activities seasonal or year-round?

13) Imbalan berupa apa yang anda terima sebagai karyawan?
(What do you get in return for the labor that you provide?)
makanan (food) (beras, ikan) (rice, fish)
uang (money)

14) Apabila imbalan yang anda terima berupa uang, berapa rata-rata yang anda peroleh?
(If you get money in return, how much do you receive on average?)

15) Kapan anda menerima upah tersebut?
(When do you receive the pay?)
setiap hari (daily)
dua hari sekali (every other day)
setiap minggu (weekly)
dua kali seminggu (biweekly)

16) Apakah upah yang anda terima anda berikan kepada suami anda atau anda simpan sendiri?
(Do you give your wage to your husband or do you keep it for yourself?)

17) Apakah anda menerima uang dari suami anda?
(Do you receive money from your husband?)

18) Apabila ya, berapa banyak uang yang anda terima?
(If yes, how much money do you receive?)

19) Apakah anda atau wanita yang lain memiliki peralatan perikanan dan/atau kapal atau fasilitas budidaya?
(Do you or other women own fishing gear, boat and/or aquacultural facility?)

20) Apakah anda pernah atau meminjam uang untuk menjalankan kegiatan di luar rumah angga anda?
(Have you ever borrowed or are you borrowing money to run the activities outside your household?)

21) Apabila anda menjual ikan, bagaimana anda mengangkutnya ke pasar?
(If you sell fish, how do you transport it to the market?)

22) Apabila anda menjual atau mengolah ikan, perlengkapan apa saja yang anda gunakan?
(If you sell or process fish, what kind of equipment do you use?)
keranjang (basket)
kios (stands or stalls)
tempat penyimpanan (storage facilities)

23) Dalam rumah tangga anda, siapa yang memutuskan bagaimana uang yang anda akan digunakan?
(In your household who decides on how to use the money?)
barang-barang rumah tangga (household goods)
makanan (food)
meja-kursi (furniture)
pakaian (clothing)
pendidikan/sekolah anak-anak (children's education or schooling)

24) Apabila pendapatan anda lebih tinggi daripada suami anda, apakah hal ini akan mempengaruhi hubungan anda dengan suami anda?
If you receive a higher income than your husband, does this have any affect on your relationship with him?
Apakah hal ini akan memberikan anda kekuasaan lebih/kekuasaan dalam membuat keputusan?
Does it give you more authority over decision-making?

APPENDIX III

SAMPLE OF GUIDELINES USED DURING FIELD RESEARCH
(adapted from FAO 1988b)

Food Security and Nutrition:

Are fisheries the primary or sole source of food produced?
Do other sources of food, actual or potential, exist in the community?
- agriculture
- home gardens
- raising livestock or poultry

What percentage of the catches is sold and what percentage is consumed by the household?
Are food and nutrition survey data available?

Income:

Are fisheries the primary or sole source of income for men? for women?
What are other sources of income, actual or potential, which exist in the community?
Are fisheries activities year round or seasonal?
Who owns the means of production (boats, nets, traps, ovens, ponds, land, etc.)?
Who controls the family's cash income?

Community Services:

To what extent are basic community services available which are directly related to women's domestic role?
- child-care facilities
- water for household use
- fuel for household use

Are basic educational facilities available and used by women?
Are population education and family planning programs available to/used by women?
Are basic medical facilities available to/used by women?
Are basic financial services (savings and credit) available to/used by women?
Do women have access to and are they involved with cooperatives?
Do women have access to and are they involved with formal or nonformal community organizations?

Division of Labor:

Are there clear, traditional distinctions between the roles of men and women?
- in fisheries activities
- in other productive activities
- in handling and control of finances
- in social/community activities
- in political decision-making activities

What percentage of women's time is devoted to domestic tasks (child care, food preparation, collection of water and fuel)?
What activities do women engage in, in their own right?
What activities of women are directly supportive of men's activities?

Are there traditional restraints on women working or associating with men outside prescribed limits?
Are there traditional taboos which prevent women from engaging in certain activities on their own?
Are there traditional taboos which prevent women from engaging in certain activities with men?

Overview:

What are the major local resources?
- living resources
- non-living resources
- community services
- educational services
- economic organizations (cooperatives, credit and savings facilities)
- social organizations
- political organizations

Are these local resources used to their fullest potential?
What base-line data are available on the economic and social life of the community?
What base-line data are available on the position of women?
If data exists, is it accurate and up-to-date?
Have development programs or projects been launched in the area?
Are local community members, including women, consulted on priorities and needs?

Assessment of Women's Involvement in Fishery

Fish Production:

Do women fish ?
- as crew on fishermen's craft
- in their own craft
- from the shore
- collecting shellfish, molluscs, seaweed, etc.

If women serve as crew members, what share of the catch is allocated to them?
Do women engage in small-scale aquaculture?
Do women control the fishing activity and any income which is generated?
How is the catch used?
- for family subsistence
- for sale at the market
- as bait for fishermen
- other

Is fishing a normal part of women's work activities or only in times of dire need?
Are fishing activities seasonal or year round?
If seasonal migration takes place, do women participate in migration or do they remain in the community?
During migration, do women experience special problems or have different duties?
What percentage of time is allocated for fishing activities or aquaculture?
Are women involved in making nets, sails, traps, fishing craft, etc.?
If they are involved, is income generated from the activity?
Do women invest in fishing craft and/or gear or aquaculture?
Are institutional credit facilities available to women to make investments?
Do non-institutional credit arrangements exist?

Fish Processing:

Are women involved with fish processing activities?
What processing techniques are used?
Are they effective?
- in terms of reducing losses
- in terms of improving the nutritional value of the processed product

Can the processing techniques be improved?
What equipment is used to process fish?
Can the equipment be improved?
Can improved equipment be made from local materials?
How is processed fish used?
- for family consumption
- for sale
- other

If women use processing equipment, do they own it?
Does processing require other work - such as collecting wood for fire?
Do women have access to credit for fish processing facilities?
Is processing done on an individual basis or on a cooperative basis?
Are there adequate storage facilities for fish?
How is the role of women in fish processing affected by seasonal migration?
Do women control whatever income they gain from fish processing?

Fish Marketing

Are women responsible for fish marketing?
- all fishery products
- only some products

Do women manage their earnings from marketing?
Do women face significant competition in fish marketing?
- from large-scale sellers
- from men
- from other women

Does the government set any price policies on fish?
If it does, are they favorable to the small-scale seller?
Are there government or self-imposed quality controls?
Do adequate markets exist?
How do women transport the fish to the market?
Are transportation facilities adequate and reasonably priced?
What type of equipment do women need for marketing?
- baskets or tubs
- stands/stalls
- storage facilities

Does the equipment require a significant outlay of capital?
Are there middlemen/wholesalers between the women and the consumer market?
What are the women fishsellers' marketing and bookkeeping techniques?
Are there women cooperatives for fish marketing?
Do women have access to institutional credit for fish marketing?
What are non-institutional credit arrangements?
Are there any non-formal savings institutions?
What do women perceive as their most critical marketing needs?
To what extent must catches be sold in order to purchase food or other basic necessities?

Assessment of Impact of Project on Women in the Fishery

Are women's traditional fishing activities reflected in the project?
Are new fishing activities for women being introduced?
Does the project recognize women's supportive activities?
Does the introduction of new materials or technology assist women in their supportive activities?
Does the project actively support women's production roles?
- by introducing improved, appropriate technologies
- by training in appropriate skills
- by providing credit facilities for women

Does the project ensure that women receive a fair share of benefits?
If there is an increase in production, does this increase women's work-load in handling, processing and marketing?
Does the project include a specific component for fish processing?
Does the project create new forms of processing that conflict with the traditional types or methods used by women?
Are the new processing technologies appropriate for local conditions, needs and skills?
Does the project include training women in the new technologies?
What type of processing tools and equipment do women want?
What type of tools, equipment and methods do they need to reduce post-harvest losses?
Does the project, either in its production or its processing component, increase the work-load of women?
Does the processing component take into account the possibility of increasing the nutritional value of the processed fish?
Does the project ensure that women get a fair share of the benefits from improved processing techniques?
Does the project provide for access to credit for women for purchasing processing materials and equipment?
Does the project encourage women to form cooperative ventures for processing?
Does the project reflect the traditional position of women in fish marketing?
Does the project threaten this traditional position?
Does the project increase women's marketing workload/opportunities?
Does the project ensure that women get a fair share of the benefits from improved marketing activities?
Does the project directly address women's marketing needs?
- transportation
- equipment
- facilities

Does the project train women in marketing and bookkeeping skills?
Does the project provide women with access to credit for marketing activities?
Does the project encourage women to engage in cooperative fish marketing ventures?

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