THE ROLES OF WOMEN FISHERFOLK IN THE FISHING INDUSTRY IN INDIA AND THE IMPACTS OF DEVELOPMENT ON THEIR LIVES

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THE ROLES OF WOMEN FISHERFOLK IN THE FISHING INDUSTRY IN INDIA AND THE IMPACTS OF DEVELOPMENT ON THEIR LIVES

by

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ABSTRACT

Women in fishing communities have always been involved either directly or indirectly in the fishing industry, yet their involvement has sometimes been overlooked. In recent decades, changes in both the global fishing industry and the economy have often negatively impacted the lives of India's traditional fisherfolk, a marginalized coastal people. Much can be learned from their experiences. This report examines the experiences of women in two fishery dependent areas of India for their wider lessons.

From 1952 to 1972 several villages in Kerala, India, received Norwegian fisheries development assistance - the first bilateral development agreement in the Third World. The Indo-Norwegian Fisheries Project (INP) was a community development project that emphasized fisheries development. The construction of a health clinic and wells for safe drinking water have benefitted the women fisherfolk of the area. During another fisheries development initiative in the early 1980s, the Indian government introduced trawlers to several villages in another state, West Bengal. The mechanization of the fishing industries of both Kerala and West Bengal displaced women from traditional activities and changed their work roles.

These cases are not exceptions; they illustrate a global phenomenon. Industrialization has generally, in the long run, negatively impacted the lives of small-scale artisanal fisherfolk, those most dependent on fishing for subsistence. In response to changes in the biological, economic and social dimensions of the fishing industry India's fishworkers have organized to gain a voice in the decision-making affecting their industry and lives.

This report concludes with recommendations toward a more beneficial approach to development planning for arsitanal fishing populations. This goal may best be realized by balanced consideration and representation of the voices, roles and needs of both fishermen and women in their industry and community.

ACKNOWLEDGMENTS

My acceptance into this Masters program came at a time when a new path and a new direction were the orders of the day. The time that has passed since, has not been without difficulties, academically and otherwise, but each new challenge has the potential to build character.

The topic for this major report came out of my interest in international fisheries development, as well as my inclination to cheer for the 'underdog'. I would like to thank the staff of the Dr. C.R. Barrett Library at the Marine Institute for their tireless endeavors to secure resources from every corner of the world for my research. Sincere appreciation is expressed to Dr. Raoul Andersen who provided guidance and served as editor, despite a busy schedule.

Finally, my love goes out to my little circle of family and friends, and to my fiancé Stacey, who have all supported my endeavors herein.

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1.0 Introduction

Especially since the end of the Second World War, women as part of their communities have benefitted from general community social and economic developmental initiatives, yet the focus of development programmes upon women in particular is a more recent occurrence. Only during the past few decades has 'Women in Development' become a common phrase in the international development organization discourse as participating organizations attempt to direct efforts to this segment of the population which constitutes one half of the world's inhabitants. For example, since 1974, the U.S. Agency for International Development has attempted to enhance the role of women in development (Dixon 1980). Likewise, in 1990 the Canadian International Development Agency (CIDA), identified as one of it's six major challenges the "increased participation of women: a more visible role for women as agents and beneficiaries of development" (CIDA 1993).

Women in fishing communities have always been involved in some aspect of the acquisition of fish, and generally quite prominent in the preparation of that fish, either for their families or for available markets. This was the case long before development initiatives by international organizations became commonplace. Despite these initiatives and the shift in focus of more recent decades, some believe that the contribution made by women, whether direct or indirect, paid or unpaid, often receives little recognition (Nadel and Davis 1988).

Development projects of various kinds, including fisheries, cannot guarantee that the benefits, or the consequences, of development will accrue equally to all members or segments of a population. The impacts of development, both positive and negative, depend on any number of factors, not the least among them the sexual division of labour and the cultural and political position of women in the target society (Dixon 1980).

The fishing sector of the world economy has sometimes been mistakenly viewed as mainly a male domain. Development projects have placed much emphasis on fish harvesting and often neglected associated activities which traditionally have been carried out, at least in part, by women. The failure to recognize women's roles in fisheries stands out in the context of development programs in Third World fishing countries, where such neglect has important human consequences. India is especially instructive in this regard. This report will examine women fisherfolk in India, particularly in the state of Kerala, and the impacts which fisheries development have had on their roles within the fisheries sector and their lives in general, and viewed in a global rather than purely isolated context in the discussion. Information is drawn mainly from key reports regarding these development initiatives, and from commentaries that provide background on the general direction of fisheries development in India during the past few decades.

The experiences of the fisherfolk of Kerala during the Indo-Norwegian development project of the 1950s and 1960s, and subsequent to these initiatives,

appear to have been reported and commented on to a much greater extent than any other fisheries project area in India. This is undoubtedly a reflection of the unprecedented magnitude of the project, the long and prominent history of fishing as a way of life in the area, as well as the perceived potential of the resource and the industry in Kerala. Although I have not been able to locate comparable studies of other fisheries projects in India of similar magnitude as the Kerala case, we will examine another less documented study that has focused on some of the same considerations for women in West Bengal, another fishing area of coastal India.

These specific examples will provide a basis for a discussion of the ecological, socioeconomic and political impacts of fisheries development programs, with particular attention to women, their role and needs as beneficiaries of development. This focus will serve to illustrate issues and considerations relevant to fisheries development generally, and facilitate the framing of recommendations for fisheries development programs with special emphasis on women within the target populations.

The sections to follow include a brief discussion of pertinent facts about India, a description of developmental assistance provided to fishing communities in Kerala, its impacts on the women fisherfolk in these communities, and vignettes from the lives of women in two fishing villages in West Bengal. This will be followed by a discussion of the cyclical nature and accompanying ecological, social and economic changes resulting from fisheries development, especially those affecting

women. Finally, a concluding section is followed by a set of recommendations which highlights some important factors that must be considered to ensure that women in target populations benefit as much as possible from development programs.

The choice of research comes from my personal interest in fisheries as well as Third World development issues. As a woman who has worked in both these fields, the impact of fisheries development on this segment of the population is a serious concern. The specific study subject, the women of the Indo-Norwegian Project area in Kerala, India, was chosen for several reasons. Firstly, key reports on this project captured my attention just as I was beginning my research, and secondly, this project was the first bilateral development project in the Third World (Kurien 1993). Thus, I proceeded based on personal interest and the possible historical uniqueness of this development project.

2.0 India

2.1 The Societal-Industrial Context

India is the world's most populous democracy. Among the world's nations, it has the second largest population, which stood at 935.7 million in 1995 (India Network Foundation 1998) and, it surpassed 1 billion in the first year of this new millennium. It is organized into 26 states and six centrally-administered union territories (see Figure 2.1).

On a religious basis, 80% of India's population states an affiliation with Hinduism, while 12% state they are Muslim and another 4% claim affiliation with Christian religions (Lutheran Church-Missouri Synod 1999). The 4% balance includes those who state an affiliation with Sikhism, Buddhism or Jainism, as well as those who did not state or claim affiliation with any religion.

The top export items from the country include handicrafts, engineering goods, ready-made garments, leather goods, chemicals and iron ore, and India is the world's leading producer of tea, groundnuts and raw sugar (Government of India 1998). As well, in the mid-1980s, marine products ranked as the third largest export commodity of the country, with prawns accounting for over 90% of the value of such exports (Gulati 1984). And although the export earnings per tonne of processed marine products decreased approximately $1200 US from 1980 to 1993 (due to market and economic changes experienced both globally and domestically), almost 90% of the 1991 earnings from these products continued to be from the generally

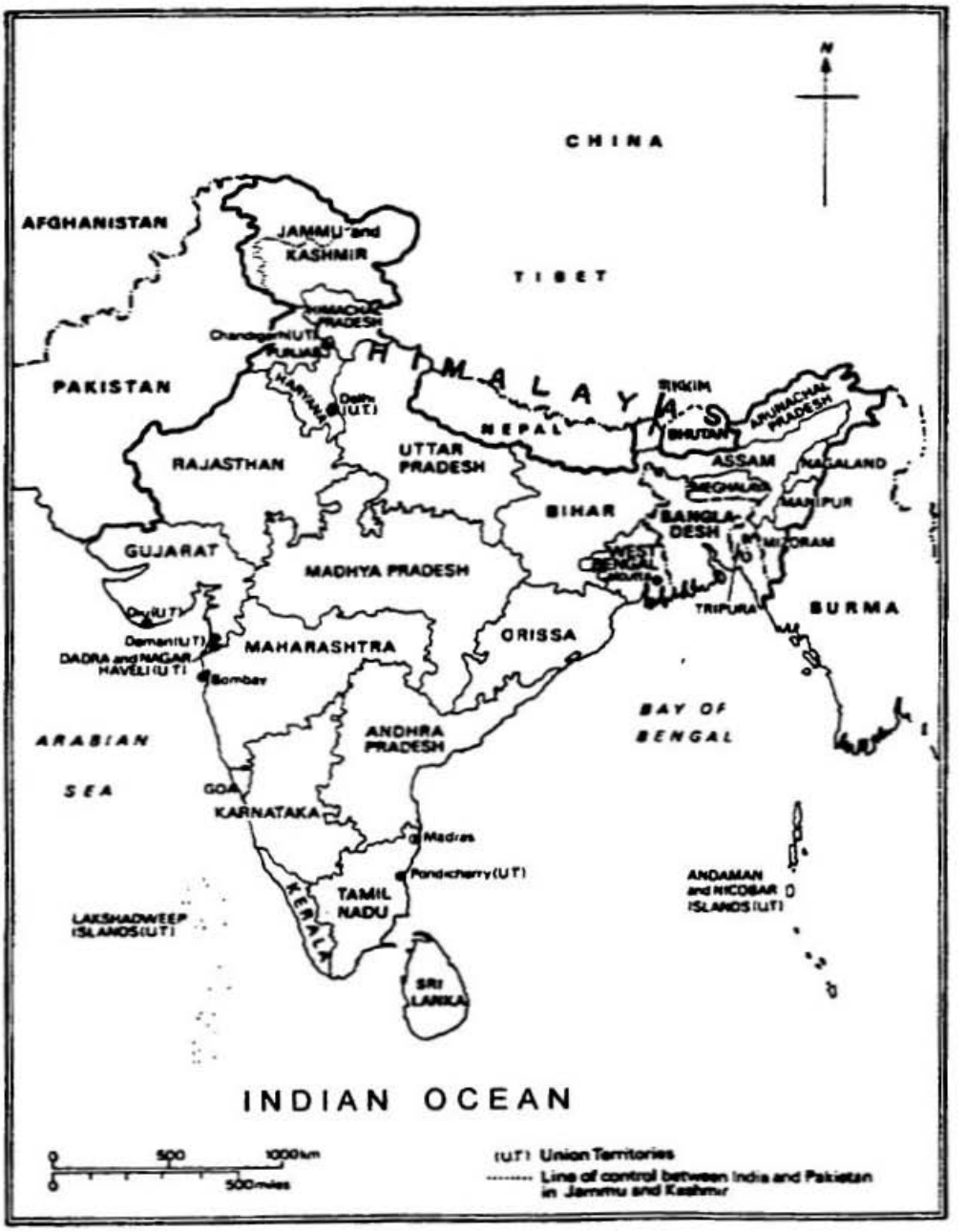

Figure 2.1: The Indian Union in 1993. Source : Stern 1993.

quite lucrative prawns as well as from lobsters and cuttle-fish (Weber 1998, FAO 2000).

2.2 The Fishing Industry

India is part of the Asian subcontinent which is bounded by the Himalayas in the north and the Indian Ocean in the south. Until recently this vast body of water was the least exploited of all the world's oceans (Berrill 1997). India has a long coastline of approximately 7600 kilometers and an Exclusive Economic Zone (EEZ) of two million square kilometers (Government of India 1998). Like all maritime nations, India has a long fishing history - firstly and traditionally, for food - and more recently for export.

India is home to the world's largest population of fisherpeople; approximately eight million people work in the fishery (Suzuki 1998). India Fishery Sector data for 1972-1982 indicate that of the total number of 'fishermen', both inland and marine, roughly 30 per cent were women and another 40 per cent were children (Sinha *et al* 1994).

During the early 1980s, marine fisheries accounted for about 63% of the industry's total production, with inland fisheries comprising the remaining 37% (Canada-India Business Council 1984).

2.3 The Caste System and the Status of Women

In order to understand the roles Indian women play in the fishing industry, one must consider how Indian society is socially stratified and the status assigned to women both within society and in their families.

Caste systems exist in many parts of the world, but are most prominent in India. Caste systems are rigid systems of stratification where groups within society are ranked based on heredity. "A caste is a closed group whose members are severely restricted in their choice of occupation and degree of social participation" (Harris and Levey 1975). Social status is determined by the caste of one's birth and rarely can this be transcended. Despite modern efforts to legally abolish it (India's 1949 Constitution made caste discrimination illegal), this system remains prevalent in Hindu India, and it exists in much of Indian society regardless of religion.

The Indian word for caste is *jati*, of which India has thousands. There are four major caste strata (*varna*) into which Hindu society is traditionally divided; specifically, these are: the *Brahmin* (the priestly and learned class), the *Kshatriya* (the warriors and rulers), the *Vaisya* (the farmers and merchants) and the *Sudra* (the peasants and laborers) (Stern 1993). Those who caught, processed or marketed fish were traditionally members of the least prestigious *Sudra* category or *varna*, belonging to the Araya caste. In recent decades, those participating in the fishing industry are not necessarily fishermen by caste but perhaps by profession - having chosen the fishing industry as the economic niche in which to eke out a living or to supplement other income.

The status of women in different castes in Indian society and in their families may vary greatly. For example, a woman who markets fish has a low status within society, even among fishing households, but the earnings generated by any paid work a woman might perform affords her a higher status within her own family unit. In a caste-stratified society such as India, where freedom of movement by tradition is restricted, changes within the economy or a sector of that economy may inadvertently place limits on one's occupational options in the event of displacement or redundancy, particularly for women with high illiteracy rates and few employment possibilities.

Women's status within Indian society places limits on their social and familial flexibility as well; they are generally socialized to take their place as subordinates to men, firstly their fathers and brothers, and then their husbands. For example, at mealtime, men eat first, then children, especially the male children, and finally, women. If food in general, or fish as the major source of protein in coastal areas, is scarce, or if the access to money for buying food is impaired by changes in work participation, then this traditional subordination may at times harm the health of women.

Next the Indo-Norwegian Project (INP) in Kerala from 1952-1972 will be outlined, followed by an examination of the impact of this international development project on the women fisherfolk of the area.

3.0 The Kerala Fisheries Experiences and the Indo-Norwegian Project

3.1 Kerala

Kerala is one of the leading maritime states in India. It is located in the most southern region of the west coast of the country. It has a long coastline of 590 kilometers, an inland network of lakes and rivers that make it ideal for fishing, and it is believed the waters of Kerala are the richest in the country (Gulati 1984). Several hundred fishing villages are scattered along the coastline, one every few kilometers. The population of Kerala increased from 13.54 million in 1951 to 21.34 million in 1971. At the time of Leela Gulati's study of Kerala's women fisherfolk (1984) the fishing population of the state stood at 770,000 people in 159,000 households.

3.2 Importance of Fisheries

Kerala's fisheries are important sources of food and protein, as well as employment opportunities, and, more recently, they have the potential for major exports. Kerala's population as a whole is essentially fish-eating; the level of fish consumption in Kerala is four times the national average (Gulati 1984).

The traditional boats of coastal India prior to the introduction of mechanization in 1956 were the *kattumaram* (catamaran) and the *vallum* (dugout canoes); both are locally-made craft built entirely of wood, without a keel, and oar or wind-propelled (Platteau 1984). The traditional fishing nets are generally locally-

made, fixed and shore seine nets of natural materials like cotton and hemp. This traditional technology will be discussed further below.

3.3 The Focus on Kerala

The fisheries development experiences of Kerala State, which are my primary foci here, have drawn much attention from social science researchers interested in the implications of development programs for women in Indian fisheries. Most prominent among these are: Leela Gulati, an Indian social anthropologist interested in the impacts of the development on women, and John Kurien, an economist with the Centre for Development Studies in Trivandrum, India. Kurien is at the forefront of those who have been studying the socioeconomic dimensions of fisheries development in Kerala during the past several decades.

A major impetus for scholarly interest in Kerala's fisheries experiences comes largely from the Indo-Norwegian Project of 1952-1972. The INP facilitated the 'modernization' of the fishing industry in Kerala State, and it was catalytic in subsequent changes that occurred in the industry which affect the individuals and families dependent upon it for their livelihood.

One of the earliest studies of the fishing villages of Kerala State was published by Arne Klausen, a Norwegian social anthropologist. He was commissioned by the Institute for Social Research in Oslo to undertake a detailed analysis of the area and thus his work in the early 1960s was the first social

anthropological analysis of the villages where the Indo-Norwegian Project had been launched (Klausen 1968). The resulting study is a descriptive account of the villages in the project area with little mention of women fisherfolk specifically.

The history of the origins of the Indo-Norwegian project will be presented next. This section relies heavily on the works of Helge O. Pharo, a University of Oslo historian who has written extensively on this project.

3.4 The Indo-Norwegian Fisheries Project and its Rationale

Since the end of the Second World War, billions of dollars have been spent annually by donor nations and donor-supported international development agencies on assistance to fisheries research, development and harvesting in developing countries (Jackson 1996). Norway is well known for its position as one of the world's leaders in fisheries technology and innovation, as well as for development assistance of all kinds to developing countries throughout the world.

Also since the end of the Second World War, the Norwegian Labour government had proclaimed its faith in international aid as a means of reducing poverty, creating economic growth and thereby alleviating political tensions and conflict ensuing from the Western struggle against communism during the Korean War (Pharo 1985). Politically speaking, increased Norwegian contributions to underdeveloped countries were proposed partially as a means to offset the negative rearmament policies of Norway's parliament at the time; an aid project was

proposed in the spring of 1952 in order to introduce a positive element into Norway's foreign policy.

India, it seems, was the obvious choice for a project. It is a democracy of the Western kind, with a reasonably efficient bureaucracy, English as an official language and, as the country of Gandhi, a symbol of Third World independence (Pharo 1985).

The government of Norway initiated discussions with India regarding the possibility and nature of a development agreement. The Norwegian negotiators were looking for a highly visible project, concentrated in a small area, and which would allow the aid foundation -The India Foundation - to strive towards fulfilling the basic needs of poor people (Pharo 1985). The Norwegians were initially interested in an agriculture project, but this did not interest India. After screening the Indian projects available for development, the planning commission somewhat reluctantly agreed to a fisheries project, the original desire of the Indian government. Thus, the Indo-Norwegian Project began in the fall of 1952. The INP, implemented with the assistance of the United Nations, was the first bilateral development project in the Third World (Kurien 1993).

The Indo-Norwegian Fisheries Project, as it came to be called, was conceived as a village development project. The project began in several villages - Sakthikulangara, Neendakara and Puthenthura - which together form a compact area around a major inlet, the Neendakara Inlet (see Figure 3.1). The traditional

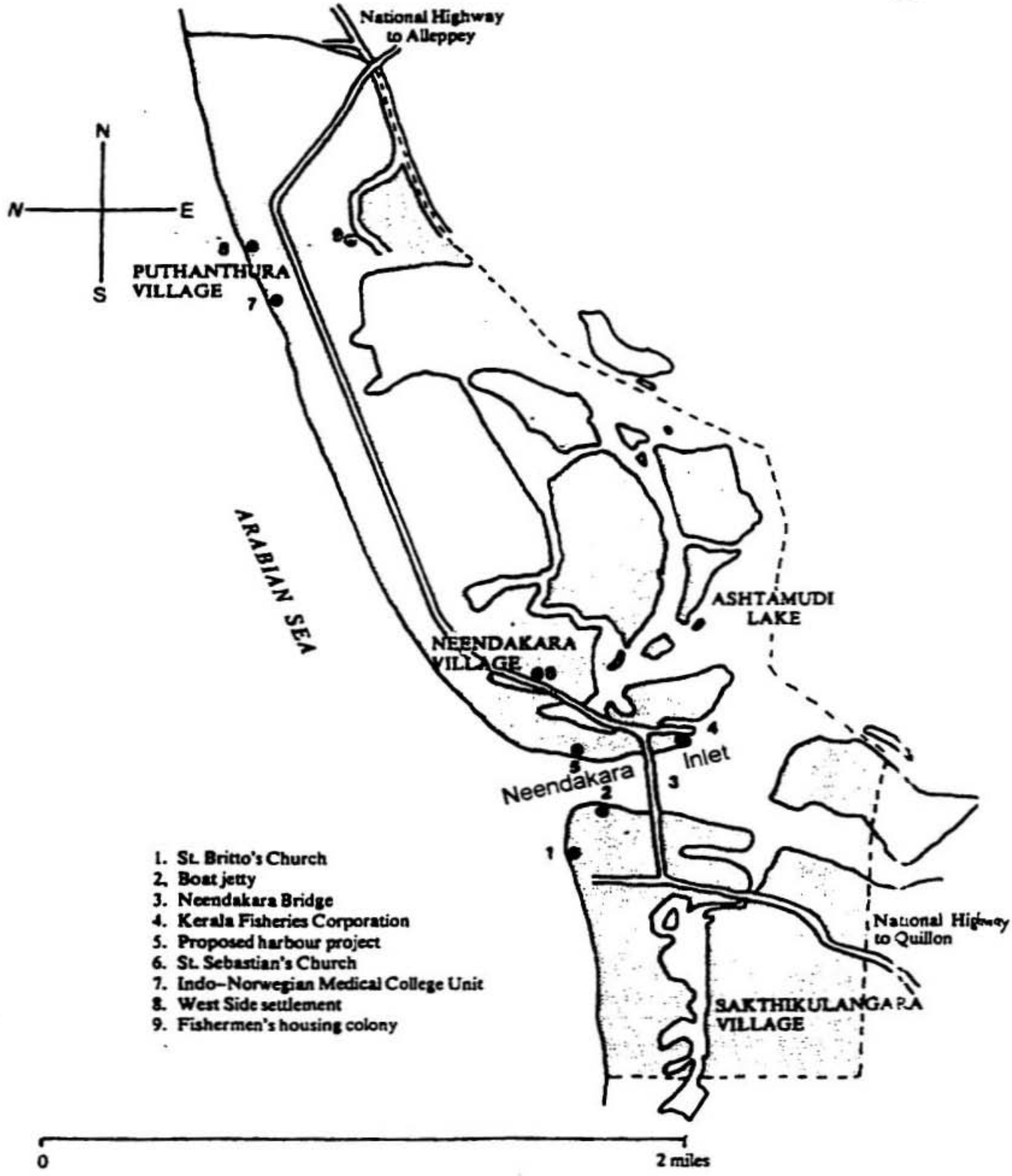

Figure 3.1: The Original Indo-Norwegian Project Area. Source: Gulati 1984.

economic base of the region was firmly in artisanal fisheries, and the contracting parties to the agreement aimed above all at fisheries development by increasing catches through the mechanization of indigenous craft or through the introduction of new mechanized boats (Pharo 1985). The development of fisheries was to take place within the framework of general village improvement, its main focus being the provision of health care facilities and safe drinking water.

The fishing industry of the target villages would be transformed through the introduction of mechanization, as well as the introduction of new fishing gear, modern technology (e.g. insulated vans to transport fish), infrastructure (e.g. ice factories, boatbuilding yard) and cooperative control in processing and distribution. This transformation was left in the hands of the Norwegians who administered the project.

The INP was intended to serve as a prototypical model for other villages and regions within India. It was apparently assumed by the overseeing parties that the project "...would by promoting change in these ... villages contribute to an all-India transformation of the fishing industry" (Pharo 1985). These changes would be the means to an end - the bolstering of an important industrial base within India's economy.

As planned, the mechanization of indigenous craft was attempted first. This endeavor met with difficulty, as the construction of the indigenous craft was not sturdy enough to withstand the vibrations of the motor. The construction of a new

22-ft flat-bottomed boat with inboard engine necessitated the abandonment of beach landing and launching, the traditional methods employed with the indigenous craft. Port-based fisheries from the lake beyond the Neendakara Inlet became the order of the day after about 1955.

There was also pressure from many fronts around this same time for the INP to start exploratory fishing and come up with successful innovations in the industry. In 1955 and 1956 three schooners and four trawlers were brought from Norway to Cochin in Kerala, some 200 miles north of the original three villages, to test their commercial viability. The Indian government had been quite interested in trawling and established a permanent site for the INP Cochin activities. The INP boats did discover large shrimp grounds during their exploratory operations and the industry subsequently witnessed the buildup of a fleet of domestic trawlers, which in the mid-1960s were poised to supply the very lucrative world market for shrimp.

From 1960 the INP's main operations were conducted from the base in the twin cities of Cochin/Ernakulam in Kerala, effectively replacing the base of operations in the original project area. The demand for mechanized boats had been supplied, and the efforts made here now concentrated on marine research, exploratory fishing, advanced fisheries education, seafood development and advanced infrastructure, as well as shrimp trawling and driftnet fishing for quality species.

In 1960 INP activities were extended to Cannamore in Kerala, Mandapam in Tamil Nadu and north to Karwar in Karnataka (Pharo 1985). These new outstations were considered replicas of the successful elements of the original project and aimed at the development of small-scale fisheries along with processing and distribution.

By 1963 the project had departed from the original target villages in Kerala State (Gulati 1985) for several reasons: the geography of the area did not readily permit mechanization of the traditional craft employed in the area and the expense involved in overcoming this obstacle was considerable. Moreover, the expense of a project of this magnitude rendered all-encompassing village development a thing of the past. The government of Kerala then became the overseer of the infrastructure the INP had established in the original project area. The successor to the INP was the Integrated Fisheries Project, an Indian organization (Gerhardsen 1977). This devolution was supported by the Norwegian government.

The Norwegian participation in the Indo-Norwegian Fisheries Project ended in 1972, but it had already facilitated numerous direct and indirect changes in the industry and in the lives of women in the target population. This is the focus of the next section.

4.0 Women Fisherfolk in Kerala

Leela Gulati, a prominent Indian social anthropologist, feels that social change is often best assessed by observing how women are affected by various developments. With many developmental changes come modifications in the amount and kind of work participation by all parties, including women, but it is in areas of health care and education that the impacts of development on women are most readily measured. It is considerations such as these that Gulati focused on during her 1984 study of the original three villages of the INP area; the results of the study were based on case studies, surveys and censuses.

4.1 Impacts in the Health Care/Educational Arena

The construction of health care facilities and the implementation of educational and family planning programs provide necessary services and assistance which allow people in a community to have greater access to meet their basic needs and improve their health and life.

Women generally have a more visible need for health care intervention during pregnancy and childbirth, so an examination of changes in vital statistics in this domain is enlightening. Statistics of importance here include birth rates, morbidity rates (reflecting maternal health and reproduction, and children's health), and maternal and infant mortality rates.

Leela Gulati studied the impact of the Indo-Norwegian Fisheries Project on the health status of the inhabitants of the original three target villages in general, and women in particular, as well as changes in women's work participation. As part of the original INP community development project, financial provisions were made to establish adequate health care facilities and to provide access to safe drinking water, both of which were virtually nonexistent previously.

Several changes in health status were facilitated during and after the life span of the INP which lend themselves well to statistical comparison. Table 4.1 shows changes in health and illness patterns that occurred between 1953, when the project was just beginning, and 1980, eight years after its completion date in 1972.

TABLE 4.1: INP AREA HEALTH INDICATORS FROM 1953-1980

Indicators	1953	1980
Maternal mortality rates (per 1000)	8	0.5
Infant mortality rates (per 1000)	120	<40
Incidence of tuberculosis (%)	7	1
Overall helminthiasis (worm) infection (%)	70	30
Helminthiasis infection in children (%)	88	40
Incidence of scabies (% households affected)	81	<20
Birth rates (%)	45	25

Source: Gulati 1985.

There were clearly vast improvements in infant and maternal mortality rates and birth rates, as well as in morbidity patterns among both children and adults. The particular diseases shown in Table 4.1 have not been eradicated, but the incidence is considerably lower than that found in fishing villages in Kerala State that were not part of the INP (Gulati 1985). Although these changes may not necessarily be completely accreditable to the INP, the fact that a maternity clinic and the associated education accompanying it were established in 1955 in an area that previously had none is undeniable; before 1955 the nearest health care facility was 10 kilometers away across a river with no bridge. These statistics suggest the positive benefits of regular health checks, access to and acceptance of family planning, and the institutionalization of births at the project-funded clinic. These facilities, established as part of the overall community/fisheries development plan, impacted the lives of the people inhabiting these fishing villages in a very positive manner. Changes relating to safer drinking water are not so easy to document.

Another INP initiative was the construction of wells for the provision of safe drinking water to families in the project area. Previously, access to safe drinking water was not only a function of geographic access, commuting and carting safe water over inconvenient distances, but also a function of sociopolitical access/caste factors. Most of the relatively safe wells were found amongst the higher castes, the landowning households with restrictions on the drawing of water, particularly by outsiders (Gulati 1985).

The access to safer drinking water which the INP provided, therefore undoubtedly had impacts both on the health of people within the project's reach, and on the sociopolitical inequities inherent in the caste system. With clean water access afforded to the lower castes, some of the landowners' power was diminished. The household chores traditionally expected of the women of these fishing villages, like women in other underdeveloped rural communities, meant that the acquisition of sufficient, and hopefully safe, water for daily use was a major chore in and of itself. With this obstacle surmounted by the INP, life was undoubtedly made less burdensome for these women.

4.2 Changes in Sex Ratio

In addressing the issue of developmental impact on the lives of the target population of the INP area, Leela Gulati (1985) raises the issue of sex ratio, i.e. the number of females (or males) per 1000 males (or females). Gulati indicates that for the country as a whole, sex ratio has traditionally been 'unfavorable' to the women of India. That is, their numbers have traditionally been less than that of their male counterparts. However, in the State of Kerala the numbers of women have exceeded those for men, except in fishing households, which are among the poorest in the state and country. Although Gulati does not discuss the reasons contributing to higher proportions of men, where they exist, I offer as possibilities: traditionally high maternal mortality rates in the absence of health care facilities

and, the traditional subordination of Indian women and its effect on nutrition (discussed in Section 2.3).

Table 4.2 presents sex ratios for the three villages within the INP area, as well as for the state of Kerala and India as a whole. Gulati obtained the values presented for the three villages from surveys conducted by the INP and the Kerala State Department of Fisheries, while those for Kerala State and India were compiled by the Indian government during census years 1951, 1961 and 1981. Data from years corresponding with the village data were not available for either state or country.

TABLE 4.2: SEX RATIOS (# WOMEN per 1000 MEN) IN PROJECT VILLAGES, IN KERALA STATE AND IN INDIA

Village	1953	1959	1963	1978
Sakthikulangara	878	873	868	961
Neendakara	892 }	888	900	938
Puthenthura	858 }			

	1951	1961	1981
Kerala State	1028	1022	1034
India	946	941	935

Source: Gulati 1985.

The traditional comparative sex ratio pattern stated above for India, Kerala State and fishing households within the state, appears also to be the case for the time frame presented in Table 4.2; that is, sex ratios for Kerala State demonstrate a preponderance of females, while the opposite has been the case for Indian men generally as well as men in Kerala's fishing households. Also, although general trends for Kerala State or India cannot be concluded from the data as given, the sex ratios for the country as a whole have had increasingly higher proportions of men throughout much of the 20th century, while those for the State of Kerala have been experiencing an imbalance such that there have been increasingly higher proportions of women (Gulati 1985; see Appendix A). For the fishing village of Sakthikulangara, the sex ratio actually demonstrates a slight decline from its 1953 value before it improves considerably in 1978; although fluctuations in a set of data are commonplace, it is unfortunate that Gulati offers no explanation for the initial declining trend seen here. In any case, the sex ratio for Sakthikulangara and the combined ratio for the villages of Neendakara and Puthanthura, in 1978, were already higher than the sex ratio for India as a whole in 1981. Could this change be due to a decline in male survival rates during this same period? Perhaps, but I have no information to indicate whether this actually was the case.

The sex ratio of a given group may be indicative of many things, depending on the group, but there is at least one researcher who is of the opinion that a "...preponderance of males over females in a poor population is an indication of the

disproportionate way in which the burden of poverty falls on women..." (Agarval 1986). Wicky Meynen (1989) suggests that because fishing is an extremely risky occupation and exclusively a man's job this indicator applied to a fishery dependent population can be particularly revealing. That is, with fishing comes the inevitable loss of life (men) and if the actual numbers of these men were in decline yet their relative numbers as reflected in the sex ratio were still greater than those for women, this seems indicative of greater burdens falling on these women.

Leela Gulati does not discuss whether the changes in the ratios presented here have been analyzed for statistical significance, but we might nonetheless suggest that the changes indicate that the burden of poverty has been somewhat alleviated for women in Kerala fishing households, and in this instance, might be deemed significant by the village dwellers themselves. We cannot conclude that any benefits accruing to the women of the fishing villages in the project area are the exclusive result of the INP's efforts because there have been increasing proportions of women reflected in the sex ratios for Kerala State as a whole, much of which was not recipient to development efforts made by the INP. The entire state, including the fishing villages, may very well have experienced other influential forces, but the rather substantial sex ratio changes particularly experienced by the three project villages are interesting, and perhaps suggestive of favourable INP influences, given the time frame.

4.3 Women's Work Participation

Women in traditional fishing households in India have primarily attended to household chores. Those from the poorest of households would attempt to supplement the household income by participating in paid work either outside the home if permitted or from home base (working for merchants on a per unit basis). The work options to which these women could turn have traditionally been fisheries related activities, such as fish vending, fish drying, net making, coir defibering and shell collection (Gulati 1985). Coir is the fiber of coconut-husk and is used in making matting and, of prime importance to the fishing industry, in the making of ropes.

The type of work performed by women in India, and even their public acknowledgment of such, is very much related to the status attached to various castes, activities or positions. Many of the above mentioned activities performed as paid labour, as opposed to familial obligations, are arduous tasks with meager economic return. Work outside the home is generally not desirable or permissible for all Indian women. Involvement in, and admitted attachment to such undertakings do not contribute to high esteem. They carry a loss of status, even among fisherfolk of the Araya caste who generally hold a low position in the caste system.

According to one 1953 INP - commissioned survey of the fishing households in the project area, less than four per cent of the women were engaged in income

earning activities, generally self-employment in fisheries related activities; these women apparently were either widows or destitute (Bog 1954). Gulati's case studies reveal that by 1978 however, women's paid work participation had increased significantly; almost 24 per cent were then engaged in income earning activities. These statistics suggest the increased attraction of paid work and that women are changing their roles in the traditional economy (an economy which is itself changing - the traditional barter system is being replaced by a merchant/cash-based system).

The increase in participation (at least in these villages) may be attributed to several activities which had existed before the INP, but blossomed in the light of modernization of the fishing industry and the economy:

(1) women being paid on a unit basis by merchants for net making or mending which previously was an at-home obligatory necessity essential to subsistence (not directly income earning). This allowed women to remain at home and meet their families' needs while using some of their time to earn money which every family needed in this changing economy. However, as industrial fishing continued to expand, women working at home could not keep up with the demand for nets and their income from this source declined as merchants and enterprise owners looked to factories and labour outside the home for their provision.

(2) with the introduction of mechanization (boats, gear, refrigeration, etc.) and the development of a prawn fishery as accomplishments of the INP, the

opportunity arose for women to become gainfully employed in peeling prawns for wages. As well, some women became small-scale entrepreneurs engaged in prawn trading and/or processing, both locally and in distant markets and towns. Before the INP, commuting or migrating to other villages to earn income from paid positions was simply very rarely done by women (Saradamoni 1995). Prawns had always been landed in small amounts and utilized as a type of manure for coconut palms. "The introduction of trawlers into Kerala coincided with the rise in demand for prawns in the international market"; by the late 1960s and early 1970s, prawns had become the 'pink gold' of marine exports from India (Kurien 1993). The community and fisheries development program of the INP were catalytic in the creation of these new opportunities for women to earn income. Ironically, it is mechanization and industrialization of fisheries that eventually increases uncertainty of stock sustainability, without which the generation of income and the availability of fish protein may be jeopardized. Such consequences will be explored in the discussion following the next section.

One of the assumptions that seems implicit in the original design and implementation of the INP was that women had very little, if any, direct role to play in technological improvements made in fish harvesting and preservation. Therefore, they would not be direct recipients of any monetary gains consequent to these changes. It could be argued that the orchestrators of the INP not only neglected the role of women in the fishing households and industry in the area, but failed to

consult with fisherfolk in general as to what their needs or preferences might be (Pharo 1985). The INP is a typical example of top-down planning. In fact, although women involved were never directly engaged in fishing, they always participated in a number of closely related activities, whether or not they were income earning activities outside the realm of unpaid household chores (Gulati 1985). In traditional fishing households around the globe, the tasks of net mending and fish preservation are crucial to the generation of income for the average household. One doesn't have to look any further than Newfoundland's history to see the essential role women have played in the fishery, particularly in preservation/processing, since its permanent settlement began centuries ago (Williams 1996).

Religious affiliation also influences the kind of work undertaken by Indian women. The individual fishing villages of Kerala are almost exclusively either Latin Catholic or Hindu. Both were present in the Indo-Norwegian Project area (see Figure 3.1). Of the fishing households in Puthanthura, 94.4% were Hindus, while among the fishing households of Neendakara and Sakthikulangara, 85.5% and 90.0% respectively, were Latin Catholics (Gulati 1984). In 1978, 30.2% of the female workers in the Hindu village, Puthanthura, were involved in home-based net making, whereas only 1.1% and 0.5% of the female workers in the Latin Catholic villages, Neendakara and Sakthikulangara, were employed in this activity (Gulati 1985; see Appendix B). Apparently, those of the Hindu religion are more inclined toward traditional activities which women can undertake yet remain at home, while

those of the Latin Catholic faith seem to be afforded more freedom and choice. In the event of this particular employment opportunity (home-based net making) disappearing or diminishing as mentioned above, there is a greater impact on the Hindu population of the area.

One might also consider the opportunity cost of labour for these women. Opportunity cost refers to the value that resources, used in a particular way, would have had if used in their best possible alternative way. The resource in this instance is labour. Thus, the consideration is what could have been achieved by these women if their labour had been used for another purpose.

As stated earlier, Hindu fishermen often do not permit their wives to participate in work activities outside the home, and fisherwomen do not look with favour on women who earn incomes as fish vendors or small business owners. These women go to the local wharf and marketplace regularly and must compete and associate with men who are not members of their immediate family; they are considered most vulgar by staunch Hindus. The female fish vendors and business owners are generally Latin Catholic villagers who feel less influenced by the restrictions of Hinduism, they generally earn more money and have more social and economic freedom. Some might say that the Hindu women have not achieved as much with their labour resource as the Latin Catholic women. As the alternatives are few as well as less lucrative, the village women of the Latin Catholic faith have utilized their opportunity cost of labour quite well. Because of such differences in

religious identification, the villages of the project area present some obstacles to consistent results and comparison (Klausen 1968).

The importance of fish vending, not only as a source of income to these women and their families, but as a source of information, can't be overstated. When fish is landed at the community or government wharves, the vendors are waiting with their head-load baskets to receive the bounty and transport it to market. As such, they are front and center to many changes that might be occurring in resource abundance or diversity, as well as changes occurring in the structure of the market and the industry. Upon returning to their communities they are the bearers of any news pertaining to the industry and its markets. As will be discussed briefly below, this was indeed the case in the aftermath of the expanding industrial fishery and the influx of foreign investment and vessels (see Figure 4.1, female fisherfolk selling their wares at the market).

Regardless of the type of work in which women fisherfolk participate, an inevitable reality seems to encompass all small-scale inshore fisheries. That reality is one of seasonality. In temperate climates like Newfoundland's, it is a function of winter storms and ice; in India and other tropical locales, it is a function of summer storms, particularly monsoons, which necessitates the cessation of fishing activity, particularly for small or traditional craft. The mechanization of traditional craft and the development of small-scale fisheries may not overcome Mother Nature, but the INP project and the technological changes it brought led to changes in the type of

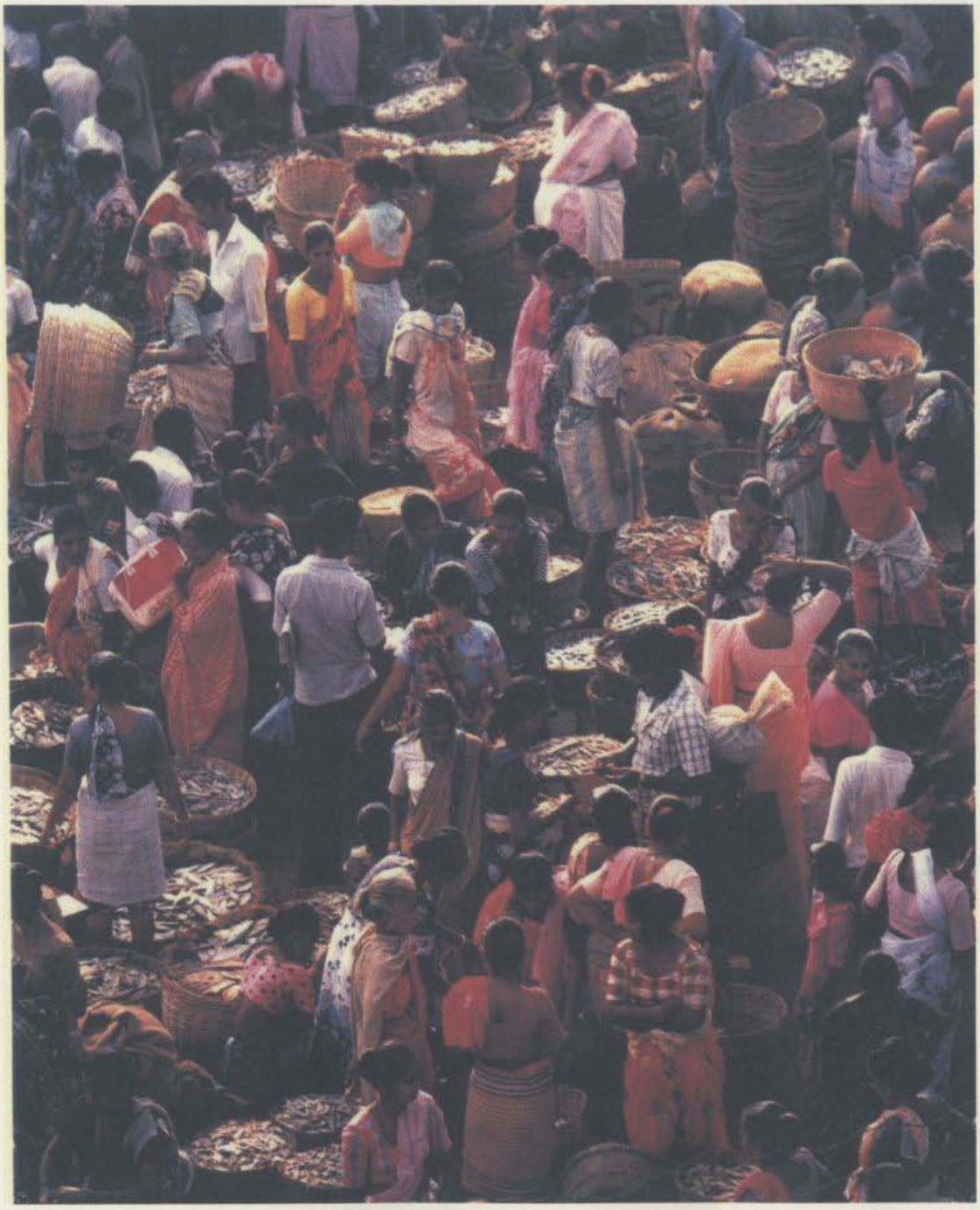

Figure 4.1: Women fish vendors in an Indian market. Source: Toussaint-Samat *et al* 1991.

work activities of women as well as the availability and remunerative benefits of paid work.

The changes in the type of work participation available in Kerala, and especially increases in opportunities for paid positions outside the home, have in turn brought other changes for the women of fishing households. Leela Gulati's studies of the project and its effects on women in the Kerala fishing villages reveal that several of her respondents indicated that not only were they working outside the home, as discussed above,"...but also meeting, dealing and competing with men other than those from their own households, making independent financial decisions and handling comparatively large sums of money" (Gulati 1985). These activities are essential for the efficient operation of their businesses, but possess much greater significance. These changes are symbolically revolutionary in gender terms for the women of Kerala's fishing communities. They reflect a major shift in both gender role and power, socially and economically.

The development of the fishing industry in Kerala following the completion of the Indo-Norwegian Project will be considered in the discussion following the next section. Next, we will consider another study of the impacts of fisheries development, this time, impacts on work participation by women fisherfolk before and after 1982 in two villages in West Bengal on the northeast coast of India. Although available documentation is not of the same magnitude and scope as Gulati's work in Kerala, it offers useful comparative aspects of the experiences of these other women.

5.0 Fisheries Development Experiences of Women Fisherfolk in West Bengal

The changes affecting women fisherfolk and the fishing industry of Kerala are not unique to that particular state. Patterns of change were experienced elsewhere in India, patterns that may bear similarities as well as differences. A state in the northeast of India, West Bengal, (see Figure 2.1) offers another example, albeit at a later date.

West Bengal is one of the more densely populated states in India, although its short coastline, about 64 km, represents only one per cent of India's coastline (Bay of Bengal Programme 1990). Pramanik (1994) examined the impact of technological changes in the fishing industry on the work participation of fisherwomen in two West Bengal fishing villages, Hara and Sultanpur. Hara is inhabited by native fisherfolk, while much of Sultanpur is inhabited by immigrant fishermen from Bangladesh; all the fisherfolk are Hindus.

The state is better known for its considerable inland fisheries production, but the mechanization of fishing craft in its maritime districts was first attempted in the late 1950s and only increased in tempo from the late 1970s when financing schemes through cooperatives were introduced (Bay of Bengal Programme 1990).

Unlike the women fisherfolk of Kerala, who did not directly participate in fishing itself, some women in these West Bengal villages (in Hara) were involved in fishing - using hand-held nets in rivers and estuaries, the catch consisted mainly of shrimp. Despite differences between Kerala and West Bengal in some of the

demographics, work activities, and groups of women, there were changes in the division of labour in each case.

Tables 5.1 illustrates the occupational distribution of women in the fishing industry in Hara and Sultanpur before and after 1982, the year mechanized vessels and net making were introduced to the area.

TABLE 5.1: FISHERIES WORK PARTICIPATION BY WOMEN

Economic Activities	Hara, # Women Employed Before 1982	Hara, # Women Employed After 1982	Sultanpur, # Women Employed Before 1982	Sultanpur, # Women Employed After 1982
Net Making	63	3	80	5
Fishing	38	8	-	-
Net Mending	-	3	-	9
Marketing	9	3	-	-
Prawn Peeling	4	-	3	-

Source: Pramanik 1994.

The chief income-generating activity for the women of both Hara and Sultanpur before 1982 was net making. Following the introduction of mechanized boats to the industry in 1982, the women of these two villages were almost completely displaced from this activity because machine-made nets became the order of the day. Net making was almost a cottage industry before mechanization,

but the introduction of trawlers meant that women making nets by hand from home could not supply the industry with the additional number it required at the price it was willing to pay and as quickly as it required them. The displacement of both traditional nets and women from this source of income is similar to events seen in Kerala during the expansion of industrial fisheries (although the fisheries development facilitated by the INP did initially bolster this income-generating activity). A few women have resorted to net mending, typically a male-only activity, to supplement the family income. On a cultural note, the net making skills of these villages may be at risk of being lost if children are no longer given the opportunity to observe this task being performed by their elders. The same could perhaps be said of the accumulated ecological knowledge of traditional fishers in this era of modern fisheries electronics and technology.

Table 5.1 shows that no women from Sultanpur were involved in either fishing or marketing at any time before or after 1982. The fisherwomen of Sultanpur consider fishing and marketing by women to be inferior activities deserving of low status. These immigrant women prefer home-based income-earning activities. Net making had been ideal for them. In Hara, the number of women taking part in fishing before and after 1982 went from thirty-eight down to eight due to dwindling catches. Fisherfolk believe that trawling with fine-mesh nets leads to destruction of varieties of fish and spawning grounds, and that this is one of the causes of declining catches in the river (Pramanik 1994).

An interesting point here is that prawn peeling had been a pre-mechanization activity of women in both Hara and Sultanpur (this, a result of riverine catches by other local women), whereas in Kerala it did not become an activity until after mechanization. Although the disappearance of this activity is not explained by Pramanik, the larger amounts of prawn landed by trawlers are likely handled by large-scale, centralized industrial processing infrastructure, presumably not located in these two small fishing villages.

In this particular study the total number of women in the two villages engaged in various income-generating fisheries activities dropped from 197 before mechanization to 31 afterwards. As a result, a small number of women in Hara started paddy-husking or paper packet making businesses as alternative sources for subsistence, but, generally, there are few alternatives to which women can and will avail in this area. These businesses represent changes occurring in the societal/community life of this village; they involve activities not related to fishing, activities from which the village fisherfolk had formerly refrained. The fisherwomen of Sultanpur adhere to this norm.

The loss of employment not only means a reduction of total family income, but a loss of social freedom. The status resulting from being unemployed is variable; there is a loss of status within the family because the woman's monetary contribution has been eliminated, while Indian society generally imparts higher status to those women who stay at home and are not involved in paid labour. So

alternative income generating activities are not resorted to by most of these women because of societal expectations, and also because of a lack of employment alternatives for women in general.

Much of the information provided by Pramanik (1994) on fisherwives work participation was collected as part of a larger study by Pramanik published in 1993. The larger study resembles the social anthropological analysis of the Indo-Norwegian Project area conducted by Klausen in the 1960s, and, it held few answers to questions raised by the work participation article. Despite unanswered questions, the numbers presented regarding women displaced by mechanization is rather telling. And the example illustrates that the introduced changes to fishing technology and the accompanying potential to facilitate changes in work activity and the division of labour experienced in Kerala during the life of the INP were not unique or isolated occurrences in the world of fisheries development.

The next section is a discussion of some of the generic fundamentals of, and basic influences on, fisheries development, much of it earmarked by specific examples, particularly from the experiences of the fisherfolk in the Indian State of Kerala. It is intended to address, in both Indian and global contexts, some of the events and concerns in the fisheries development arena since the era of the INP and West Bengal initiatives outlined above.

6.0 Discussion: The Larger Context of Fisheries Development Change

The following discussion will explore the wider context of fisheries developmental change, delving into the many relationships impacted by development programs both within India and globally. The biological, economic and social changes accompanying the evolution of industrial fisheries have a profound impact on the lives and work participation of women in fishing households and villages. It is difficult to argue single cause-and-effect relationships in a discussion of the developments involved in programs or initiatives such as these, but the various facets of these developments are intricately linked.

6.1 The Fisheries Cycle

Fishing, whether for subsistence and/or commerce, has been among the most difficult ways to make a living. Resources and the marine environment are always subject to uncertainty. Both traditional and modern technology and catching methods face natural fluctuations in resource availability. Modern technology, however, has added another dimension to these fluctuations where the low points in the cycles can be unlike any naturally occurring lows.

Capture fisheries, especially industrial fisheries, have long followed a common pattern widely known as, and appropriately termed, 'boom and bust'. This pattern of development and decline is characterized by a sequence of stages or states; discovery, exploitation, depletion and collapse (Berrill 1997). The first stage

is the discovery of a new stock of fish. Exploitation (stage 2) begins at a relatively low level, but eventually increases as fish harvesters increase effort. This is often encouraged by direct or indirect public subsidies in infrastructure development.

The third stage is depletion or decline; fishing effort is not sufficiently controlled and exceeds the level compatible with stock biomass sustainability. The combination of overcapitalization of the industry, and especially the open access nature of most of the world's fisheries, seem to ensure the continuation of such excessive effort despite stock decline. The result is the fourth stage, stock collapse.

The boom and bust pattern of fisheries development has occurred in many twentieth century fisheries. Long before the collapse of the Northern Cod stocks in Newfoundland waters, this devastating pattern had driven many fisheries and their communities to crisis around the globe. Some prominent examples include the California Sardine fishery in the early 1950s, and the Peruvian Anchoveta fishery in the 1970s. Cyclical patterns of this nature have occurred during the past several centuries, and quite often in this century as both the global population and the demand for fish have escalated. Natural changes and human exploitation have together dealt some hard blows to global fish stocks, and in turn, have reduced the potential economic and social benefits available to the people most dependent on them, including the fisherfolk of coastal India.

6.2 The Evolution of an Industry

Prior to the 'modernization' of India's fishing industry, those who fished were village artisans who employed traditional gear and techniques to capture fish for both household consumption and as a market commodity. The boats employed to fish the coastal and inland waters were built by the fisherfolk themselves. The harvesters also employed home-made gear, including both lines and nets of various types, in their enterprises.

The vessels now used to harvest fish from the waters of the Indian Ocean fall into two categories: indigenous (or unmechanized) and mechanized. Unmechanized craft are of three kinds: (1) catamaran, (2) dugout canoe, and (3) plank-built. Catamarans may consist of little more than several logs tied together with rope. Dugout canoes are made from logs cut in local or upriver areas, and then floated to coastal villages for construction. Plank-built boats resemble the traditional dories of the small-scale harvesters of temperate coastal waters like eastern Canada.

The sea on the east coast of India is very rough, while that on the west coast is calm except during the West Coast monsoon when fishing is virtually suspended. Traditional harvesters in the west had primarily employed catamarans, while dugout canoes and plank-built boats had most often been used in the east; the operating range of these traditional crafts is generally confined to the inshore waters of 10 to

15 km (Mathur 1977). More distant waters remained beyond the range of the traditional technology until the advent of mechanization.

The "low-tech" traditional fishery was a labour-intensive endeavor which, as such, could not be executed during certain types of weather or during certain times of the year, for example, the monsoon months of June, July and August. On the positive side, however, this limitation upon fishing effort coincided with the spawning time of most of the species of value (Kurien 1995). The combination of traditional fishing methods and limits due to weather and the natural cycles of the resource, in effect, made possible the conservation of the fish stocks the fisherfolk's enterprises and communities depended upon. Further, if the traditional fishing industry was biologically sustainable, it also provided ample supplies of affordable protein to the poor inhabitants adjacent to these fishing grounds.

'Modernization' of the fishery brought many innovations to this traditional industry, among them, were outboard motors, new boat designs, 'western' nets, freezing technology, and also, trawlers. The technology introduced to Kerala initially, and then to adjacent states, during the life of the Indo-Norwegian Project has already been discussed. Similarly, when trawlers were introduced to the coastal villages of West Bengal in 1982, the results resembled some of those which followed from the development initiatives of the Norwegians in Kerala.

As detailed earlier regarding both these cases, the evolution of the industry affected changes in the gender division of labour and the work participation of

women in the fishery. An evolving industry such as this also inevitably brings marine biological and economic changes. The resources of the area will be discussed in the next section.

Like many coastal countries, India adopted a 200 mile Exclusive Economic Zone (EEZ) in 1977, attempting to bar any unauthorized foreign fishing interests from the waters therein. Fishing effort from 1977 until the early 1990s was primarily by domestic craft, with the small-scale traditional harvesters and the trawling sector of the industry generally at odds with one another. The bone of contention voiced by the traditional harvesters, as has also been the case with their brethren in eastern Canada, is the encroachment by trawlers on their fishing grounds and the fish found there, and consequently, their livelihood. However, as we will see shortly, by the early 1990s, domestic and international economic problems and changes in fisheries policy worked to unite these opposing forces to fight a common enemy - foreign trawlers.

6.3 Resources

The FAO has divided the world's oceans into what they refer to as Major Fishing Areas for Statistical Purposes. The Indian Ocean has three major fishing areas according to this division: Western, Eastern and Antarctic. FAO data indicate that catches for the entire Indian Ocean have increased from 2.5 million tonnes in 1970 to 6.3 million tonnes in 1991 (Stamatopoulos 1993). This is an aggregate

statistic; catches of individual species and groups of species are assessed according to linear trends and categorized as either rising, stable or declining. If one considers the Western Indian Ocean, for example, 100% of flounder, halibut and sole species had rising catch trends in 1990, while 71.2% of cod, hake and haddock species had declining catch trends (Stamatopoulos 1993). As well, Kurien (1995) states that "catches of sardines and mackerel, once the mainstay of the fisheries, plummeted from 250,000 tonnes in 1968 to 87,000 tonnes in 1990". It is also the cheap sources of protein such as these that poor consumers depend on.

Even in a situation where the trend is towards increased catches, the target stock may be in decline as advancing technology and skill combine with stock knowledge to bring greater catches per unit effort; as a result, an aggregate stock is fished to the point where it is no longer sustainable and becomes commercially 'extinct'. Generally, the 'reaping' becomes 'raping', orchestrated by domestic and foreign industrialized fleets, leaving the small-scale fisherfolk with declining catches. The technology employed for these industrial fisheries is usually 'western' in origin, and is unsuitable for fishing tropical stocks. Trawl nets are, in theory, size selective, not species selective, although it could perhaps be argued that they are indeed neither size nor species selective. Because tropical waters teem with smaller numbers of a great diversity of species compared to temperate waters, this technology, when transferred, has the potential to wipe out a greater number of tropical species with the same level of effort. The potential for damage on many

fronts is evident if we consider the catches achieved by some of these vessels and their technology; for example, in the early 1990s a foreign vessel arriving in the port of Cochin in Kerala carried on board a cargo of 2000 tonnes of fish, a catch equivalent to the amount caught in one year by 1000 hook-and-line fishermen in the region (Kurien 1995).

The Indian fisherfolk who sell fish on a small scale transport them either by bicycle, typically the case for the men employed in this sector of the fishery, or by 'head-load', as is typically the case for their female counterparts. 'Head-load' vendors transport their 'load' of product to market in baskets balanced atop their heads. In the 1990s, as had always been the case, Indian women 'head- load' fish vendors were the industry's 'town criers' - the residents to announce newsworthy information. These coastal women saw their wares diminishing both in average size and in number, and were the first to bring the news of the declining resource trends back to their villages. The impetus for combating resource and industry destruction, first by domestic trawlers, and then by foreign interests, gradually emerged at the grassroots with the organized power of many voices including those of the female fisherfolk.

Another aspect to resource availability is whether the fish that is being landed is beyond the reach of the fisherfolk or traditional consumers either geographically or economically. The capital-intensive nature of industrial fisheries, and the desire and need to maximize earnings can lead to a shift to big buyers

supplying urban markets where prices are higher (Bailey *et al* 1986). This type of shift leaves small local buyers such as the women head-load vendors with less fish to sell and, in turn, less income. It also leaves remote inland consumers with less fish because of their distance from the urban markets. And it leaves many from various locales in a position to ill-afford the increased prices; prices which have increased such that the cheapest source of protein in India at the beginning of the modernization process has become the most expensive (Weber 1998). The per capita availability of fish in Kerala actually increased from 14.8 kg/person per year in the early 1960s to 19.0 kg/person per year in the early 1970s (Kurien 1987), but as the industry expanded and became more capital-intensive and export-oriented, the per capita availability during the 1980s decreased to 9.4 kg/person per year (Meynen 1989). These and other socioeconomic considerations in the Indian and global (fisheries) development contexts will be discussed next.

6.4 The Agents of International Development and Socioeconomics

6.4.1 The Agents of International Development

There are a variety of organizations, groups and agencies around the world that strive to provide technological, humanitarian and/or financial assistance to lesser developed countries (LDCs). These agents of international development include, among others, non-governmental organizations (NGOs), development banks (i.e. Asian Development Bank), cooperative agencies such as the Canadian

International Development Agency (CIDA) or the Japanese International Cooperation Agency (JICA) and, of course, organizations such as the Food and Agriculture Organization (FAO). In the area of financial and monetary assistance, it is the World Bank and the International Monetary Fund (IMF) that are perhaps the best known.

The origins of both the World Bank and the IMF can be traced back to the United Nations Monetary and Financial Conference held in Bretton Woods, New Hampshire in July 1944. The World Bank Group is a family of institutions of which the International Development Association (IDA), the International Bank for Reconstruction and Development (IBRD), and the International Finance Corporation (IFC) are most well-known (de Vries 1987). All three lend money to member countries to promote economic development. The main source of the Bank's finances are bonds sold in markets around the world, backed up by capital committed by the governments of the member countries.

The External Relations Department of the IMF stated in 1998 that the International Monetary Fund is "...a cooperative institution that 182 countries have voluntarily joined because they see the advantage of consulting with one another in this forum to maintain a stable system of buying and selling their currencies so that payments in foreign money can take place between countries smoothly and without delay" (Driscoll 1998). The IMF's mandate, as laid out in its Articles of Agreement, is to promote international monetary cooperation and balanced growth

of international trade, as well as a stable system of exchange rates (Diehl 1997). Each member country contributes a quota of money (the amount is determined according to the needs of the IMF and the economic prosperity of the member) to a pool that the IMF can draw from to lend to members in financial difficulty.

Although it is likely that few would be opposed to the idea that a fundamental requirement for international prosperity might be an orderly monetary system that will encourage trade, create jobs, expand economic activity, and raise living standards throughout the world, there are those who believe the existence of an orderly monetary system may not be the panacea to sufficiently raise the standards of living for the world's poorest inhabitants, many of them women. As evidence of women's economic position, or more accurately, their lack of representation in the world's economic hierarchy, Simmons (1992) reports that globally, "women currently receive 10 per cent of the world's income and own one per cent of the world's wealth...".

The agents of international development have been the recipients of both praise and criticism. Recently, at the annual meetings of the International Monetary Fund and the World Bank in Prague, demonstrators opposed globalization and capitalism, and protesters demanded the breakup of the two lending institutions because they say they have failed the poor. Along a similar vein, Myers (1987) has questioned the political morality of the IMF. Despite the images of angry protest seen in the media, the president of the World Bank, James Wolfensohn, told

delegates that he believed that many of the demonstrators are asking legitimate questions, and conceded that "...the IMF and World Bank had a lot to learn about improving their efforts to combat poverty..." (Ward 2000). In defense of the two giant lending institutions, surely there are others who have failed the poor.

Balance of payments difficulties, the resolution of such being the focus of the IMF's efforts, requires adjustments to fiscal handling and policy by the government seeking assistance. The IMF assesses the government's program for adequacy in achieving payments adjustments and negotiates for changes, and in this, are careful not to be perceived as infringing on the sovereignty of the country.

6.4.2 The IMF and India

The enthusiasm of the Indian government for joint ventures and multinational investment blossomed in the climate of economic liberalization and globalization of the early/mid 1990s, resulting from structural adjustment conditions imposed upon the government by the International Monetary Fund and the World Bank in return for loans to bail out the ailing economy (Kurien 1995).

During the 1980s, India had gradually accumulated a foreign debt of $74 billion, partly through a previous round of IMF loans, and by mid-1991, the economy was in difficulty (Chossudovsky 1992). The IMF designed an Economic Aid program to help India address its balance of payments difficulties, reduce the fiscal deficit, and relieve inflation pressures, all in an attempt to make its economy more

attractive to outside investors. The structural adjustment conditions imposed on the Indian government in return for the IMF's bail-out assistance included:

- cutting spending to social programs and infrastructure
- eliminating state subsidies and price support programs, including food and fertilizer subsidies
- devaluing the currency to make exports cheaper and imports more expensive
- liberalizing trade to allow for freer entry of foreign imports and capital
- major reforms of banks and financial institutions, in particular the reduction of subsidized loans in rural areas
- altering the tax structure, including abolishing the wealth tax and reducing the capital gains tax (Chossudovsky 1992).

6.4.3 Structural Adjustment Consequences

The greatest area of flexibility in the design of adjustment programs is in the choice of where to direct cuts to public expenditure (Williamson 1987); Williamson argues that "the macroeconomic impact will be much the same whether a reduction in public expenditure is achieved by cutting food subsidies or military spending, but the distributional impact is quite different". It is generally easier, logistically speaking, for a government to cut subsidies to food rather than nuclear power plants, for example. Not surprisingly, the brunt of the costs of such economic measures will be borne by the less privileged of the population, increasing the

marginalization of those in society who can least afford to be further burdened. "The vast majority of rural dwellers in the developing world live at or near the margins of existence" (Bailey *et al* 1986). Among these are the fisherfolk and the most marginalized people worldwide, women.

Key elements of structural adjustment plans to contend with balance of payments difficulties have often been the promotion of exports as well as the generation of foreign exchange. The fishing industry provides an opportunity for both of these objectives to be addressed. As this relates to India, export potential was abundant for the Western Indian Ocean and the Eastern Indian Ocean, the only regions of the world's 15 major fishing regions still (collectively) experiencing increasing catches (Kurien 1995). There also was, and is, a large fishing fleet mostly from industrialized countries where they have fished themselves into redundancy, that needed to continue to justify itself economically despite its reputation for fish stock destruction. The issuing of fishing licenses for foreign vessels to fish inside India's EEZ was an opportunity relished by the foreign fishing fleets' owners, and it provided the Indian government with an opportunity to add to their books the much needed gains from fish exports and the resultant foreign exchange.

The Indian government, in its quest to expand foreign involvement in its economy, made provisions that would facilitate the generation of profits for these foreign investors involved in the fishery, an industry that has often been

characterized as break-even at best. Among the government provisions made to attract investment was the provision of subsidized fuel to foreign/joint venture vessels such that the price was far below the price paid by traditional fishermen (Kurien 1995). The rural poor were being economically and ecologically disadvantaged by their government's attempt to attract foreign investment and exchange that in all likelihood will see the bulk of the benefits accrue to wealthy foreigners who have set their sights on the maximum economic yield they can achieve and not on the sustainability of a resource that has been essential to millions of India's coastal and rural people for centuries.

6.4.4 Income/Expense Disparity

Some might suggest that, ideally, fisheries and economic development should benefit all segments of the (target) population. If monetary gains are achieved from any development of this kind, the relative economic benefits gained by families as well as the economic costs of involvement should be assessed in order to determine their real value. "Economic well-being depends in part on the relation between income and those expenses required to maintain an adequate standard of living" (Dixon 1980); the burden of providing this adequate standard of living is especially felt by women when household expenses swell. The example of fuel subsidies for that sector of the industry which is least in need, while the expenses of the traditional small-scale harvester increase, is a case in point. This

kind of expense reduces household income and, as a result, the quality of life of those affected.

Another consideration in this realm is the concept of debt-trap. The earnings from the short yet lucrative prawn season are used by fishermen to repay the loans they have accumulated throughout the year. If the income from prawn catches were to decrease, as was the case following considerable reductions in global demand in 1989 and 1991 (Weber 1998), this may necessitate the accumulation of further debt in order to maintain the ownership of, and ability to operate, equipment employed in the industry without threatening the household budget.

The inability of people to afford the essentials of life (e.g. food) in the face of 'advancement' and 'development' indicates that there are disparities and inequities inherent in the system attempting to promote these achievements. The Pramanik (1993) study of coastal villages in West Bengal conducted during the 1980s indicates that on a monthly basis, approximately 70-77% of household income is expended on food alone. And in the early 1990s, in the aftermath of the IMF's Economic Aid program, there was a price increase in excess of 50% for rice and wheat between July 1991 and December 1992; rice and wheat are staples essential to the diet of rural Indians and this price increase exacerbated the starvation experienced in the same time period, the likes of which had not been seen since the great famines in Bengal in the early 1940s (Chossudovsky 1992).

The actions taken by the fisherfolk of India in response to resource and socioeconomic changes which have disadvantaged them will be discussed next.

6.5 Fighting the Common Enemy

During the 1960s and 1970s, the traditional small-scale fisherfolk of coastal India began to see the decline of the fish resources upon which they had relied for centuries. This decline was orchestrated primarily by foreign and domestic trawlers targeting prawn export markets, part of the development approach taken by the Indian government of the day to generate foreign exchange.

Protests against the trawlers were organized through the establishment of artisanal fishworkers' unions, and in 1978, the National Fishworkers' Forum (NFF) was constituted when industry leaders from major marine fish-producing states, including Kerala, came together to discuss the need for collective action (Le Sann 1998). Throughout the 1980s, the protests and demonstrations against trawling continued, with a great deal of support coming from the female fishworkers of the industry. Throughout India, a combination of fasts, road blocks and massive processions were employed to get public attention and action from the government; at the forefront of these processions were the women of the fishing communities (Kurien 1993). In fact, their spirited involvement was crucial to the orchestration of these protests. Their participation helped to achieve a total ban on trawling during monsoon seasons (the crucial time for spawning) beginning in 1989.

It was in the mid-1990s, however, that the many domestic and sometimes opposing forces came together to fight for their resources and their livelihoods, to stop the invasion of foreign trawlers in their waters. Although foreign trawlers had fished the Indian Ocean outside India's EEZ (since 1977), the Government of India in 1994 "announced its intention to open up its 200-mile EEZ to foreign fishing vessels through deep-sea joint ventures"; the licenses issued to foreign companies (generally with Indian partners in name only) were 100 per cent export-oriented, meaning that all fish caught would be exported, contributing almost nothing to the local economy or to local food supplies (Le Sann 1998). As well, these joint venture vessels were not likely to employ many Indian fishworkers (Kurien 1995), once again contributing little to the Indian economy.

Artisanal harvesters, fish vendors, processors, and even, domestic trawler operators throughout the country joined forces for the common good. These fishworkers saw "their resources" being sold out to foreign interests by the Indian government. The fishworkers organized protests to draw attention to this new situation and hopefully get action from the government. Among these was a three day labour strike in November 1994. Witnessing the resolve of the fishworkers and the support they had mobilized from various individuals and groups, the government in January 1995, decided to freeze new licenses and to review its joint venture policy (Madeley 1995). In 1996 the fishworkers again mounted a nation-wide

protest - they held a hunger strike for eight days. This time the government rescinded licenses issued to multinational joint ventures.

Among the most marginalized in Indian society, the fisherfolk, and particularly the women of the fishing communities, have born the brunt of short-sighted actions taken by the national government. They strive, as an organized national voice, to protect their livelihood and ensure their survival. For these artisanal fisherfolk, the future of the fish in the sea is directly linked to life on land.

7.0 Conclusions

Fisheries development programs advanced by developed nations in developing countries, especially during the latter part of this century, have often been guilty of displacing traditional or small-scale fishers and technology, leaving in their wake communities and sectors of the industry whose sustainability are placed in jeopardy. It has been common for the very technology which has facilitated the decline of stocks in Western fisheries, and their associated economic and social consequences, to be transferred to developing countries which have been recipients of donor-assisted development.

Any development of this kind will bring benefits and negative consequences to its recipients. Although the specific impacts on a population will vary from place to place, there are many parallels among groups whether they are in the developed or the developing world. A country's fisheries development experience may very well have universal familiarity.

Although the Indo-Norwegian Project brought much needed health services and safe drinking water to the inhabitants of the project area, it may also have been the most influential catalyst in the development of a fishing industry which has not, in the long run, benefitted these artisanal fisherfolk and others like them along India's coast to the same extent . It is in this light that I stress the importance of seeking to sustainably develop this resource, a naturally renewable resource which has, in many instances around the globe, proven itself fragile when placed under

considerable pressure. A stressed ecosystem translates into stress for those that rely on that system for their livelihood.

8.0 Recommendations

The impacts of fisheries and economic development programs are multi-faceted. This report has described the roles and needs of Indian women in the fishing industry, particularly in Kerala, and has discussed some of the impacts of fisheries development programs on their work participation and lives as well as on the industry in general. These examples offer lessons that might help ensure that development programs benefit target populations, rather than harm them. The following recommendations are made on the basis of the Indian examples and discussion presented as well as more general literature on development and fisheries:

(1) baseline demographic and social anthropological assessments of the target population should be carried out before proceeding with any development program. Existing census information cannot be assumed to provide the most important or current data. As complete a knowledge base as possible will benefit the target population and the administrators of any program.

(2) all development projects, fisheries or otherwise, should consider social infrastructure issues (e.g. social stratification, and the status of women and men in their particular culture), if they are to address the needs and desires of women.

(3) the gender division of labour and the work participation of women should be determined and incorporated into the planning and implementation phases of development programs such that women are not inadvertenily neglected or displaced by 'development'; for example, fisheries development should not be assumed as mainly, if not exclusively, male domains and issues.

(4) even where women are not directly involved in the fishing industry, projects should consider how they are affected by technological changes in the work of their men.

(5) although it is generally seen as desirable to advance the standing of women in society, development programs should consider the expectations of women in a particular target population and the cultural restrictions placed on their participation. Not doing so may result in non-participation or non-acceptance by the target group.

(6) remembering that there is often great variation among any group of people, the prospects for success or failure of a development program will be more easily assessed if the target population is homogeneous. In the event that a heterogeneous area rather than a homogeneous population is the target, administrators should make every effort to provide suitable aid and options tailored to all groups within that heterogeneous area.

(7) fisheries development programs will likely benefit as many fishing village inhabitants as possible if orchestrated in the context of village or community development, where the inclusion of basic necessities such as health care and education have the potential to benefit a greater number of inhabitants .

(8) top-down or trickle-down development planning should be avoided. Intended recipients of any developmental assistance should first, and foremost, be asked if they would be receptive to aid of some type, and secondly, how they feel they can best be helped. Ask them what they want and need. Don't tell them what they should want and need.

(9) regional or community assistance should be specific to the needs of an area. Generic plans for fisheries and economic development may not contain goals which best address the needs or interests of all segments of a target area or country, or the politically inactive and/or unempowered in the population.

(10) whether the task is the orchestration of development initiatives or the formulation of policy, all parties will benefit more sustainably if incompatible or competing objectives or goals are replaced by those which are complementary.

Finally,

(11) care should be taken to respect the value, and ensure the survival, of traditional skills and knowledge of artisanal fisherfolk.

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APPENDIX A

TABLE 4.3: SEX RATIOS IN KERALA AND INDIA, 1901 TO 1981

Year	Number of women per 1000 men	
	Kerala	India
1901	1004	972
1911	1008	964
1921	1011	956
1931	1022	950
1941	1027	945
1951	1028	946
1961	1022	941
1971	1016	930
1981	1034	935

Source: Gulati 1984.

APPENDIX B

TABLE 4.4: PERCENTAGE DISTRIBUTION OF WORK PARTICIPATION BY FISHERWOMEN FROM THREE VILLAGES, 1978.

Type of Activity	Latin Catholic Villages		Hindu Village
	Sakthikulangara	Neendakara	Puthenthura
A. Home- based work	**1.1**	**2.6**	**31.1**
i. Net making	0.5	1.1	30.2
ii. Coir rope making	0.3	-	0.9
iii. Prawn peeling at home	0.3	1.5	-
B. Work outside home	**11.9**	**14.4**	**12.9**
i. Fish vending	2.2	1.3	0.3
ii. Prawn business	5.6	6.1	0.4
iii. Peeling for wages	3.4	3.9	10.6
iv. Regular employment	-	0.9	-
v. Other activities	0.5	2.2	1.6
Workers	**13**	**17**	**44**
Non-Workers	**87**	**83**	**56**
Total	100	100	100
Actual Population of Women in Fishing Households	**1541**	**1266**	**1166**

Source: Gulati 1985.