Women's involvement in Fisheries on Socio-economics in a Coastal Fishing Community in Ambalangoda, Southern province of Sri Lanka

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Abstract
The present study was carried out to evaluate the impact of the involvement of women in fisheries on the socio-economics of fisher households in Hirewaththa and Patabandimulla, two fishing villages in Ambalangoda, Southern province of Sri Lanka. Households for the study were selected after a preliminary survey. Households were separated into two categories based on the level of women's participation in fisheries. One hundred households from each category were randomly selected, and the information was collected using a questionnaire survey. The categories were families in which women were involved in fisheries (WIF families) and families in which women were not involved in fisheries (WNIF families). Information was collected on socio-demographics such as civil status, religion, family size, the literacy level of women, school attendance of children, nature of the house, daily activities of women, household income. Other knowledge acquired was on the willingness to participate in fishing activities, whether people were descendants from fishing families and existing barriers and opportunities in fishery activities. The results indicated that there were significant differences between the two groups with regard to family size composition, literacy level, education of the children, monthly income, regular liquor consumption, habits of husbands and loans taken from the banks and repayments ($p < 0.01$). Housing conditions of two categories showed significant differences ($p < 0.05$). No women in the village engaged in pre-harvest activities and the catching of fish. Of the women involved in fisheries, about 44 percent involved themselves in fish processing activities such as gutting, salting, sun drying and *jaddy* preparation, around 70 percent of which involved in gutting fish. About 12 percent were involved in marketing the catch, 26 percent in removing fish from the small meshed gill-nets, and ten percent in collecting fish into transportation baskets. The balances involved in the ancillary support services, five percent of women engaged in providing foods and three percent of women engaged in supply fuel for the boats. The labour of women involved in salting and drying and collecting fish into transportation baskets was found to be exploited through gender discrimination. The present study indicated that, even though the WIF households earn a higher income, living conditions in WNIF households were similar. This may be mainly due to the low literacy rate, large family size composition, and loans taken from the bank among the women involved in fisheries. This suggests it is necessary to carry out social development programs in order to enhance living standards.

1. INTRODUCTION

1.1. Description of the Fishery

Sri Lanka is an island state in the Indian Ocean, south-east of the Indian sub-continent between latitudes 6-10º N and longitudes 80-82º E. The island is approximately 66 000 km^2 with a coastline that's 1 340 km in length. Sri Lanka claims sovereign rights of approximately 22 300 km^2 of Exclusive Economic Zone (EEZ) of the Indian Ocean. There is evidence that shows freshwater fish have been harvested in Sri Lanka since ancient times (Wickramasinghe, 2001).

The Fishery sector provides 60 percent of the total animal protein (Fisheries Industry Outlook, 2016) consumed in Sri Lanka. This sector can be divided into three sectors; marine, brackish water and freshwater fisheries. Marine fisheries in Sri Lanka can be broadly categorized into coastal and offshore fisheries. The coastal fisheries can be further divided into pelagic and demersal fisheries. Coastal

fisheries still account for about 67 percent of the marine fishes caught, but there are some uncertainties regarding further expansion in coastal fishing activity (Wijayaratne, 2001).

As a whole, the fishery sector provides full-time employment for around 120,000 persons and accounts for 1.3 percent of the Gross National Production (GNP). Exports of fish and aquatic products were valued at around 178 million USD in 2016 (Fisheries Industry Outlook, 2016). Marine fisheries contributed over 90 percent of the total national fish production of 456 990 tonnes in 2016, of which 274 160 tonnes were from the coastal fisheries subsector. The offshore and deep-sea fisheries are still in a development stage - production amounted to 182 830 tonnes (in 2016 Fisheries Industry Outlook, 2016).

The coastal fisheries are confined to waters of the relatively narrow continental shelf and its slope area. This is 22 km wide on average and rarely exceeds 40 km. The total area of the continental shelf is about 26 000 km^2, which is approximately 11 percent of the Sri Lankan EEZ (Fisheries Industry Outlook, 2016). Of the variety of gear used, small-mesh gill nets and beach seines are the main methods used for exploitation of small pelagic fish in the island. Gillnets contributed over 80 percent of the landings, while beach seines account for most of the remainder (Maldeniya, 1997).

1.2 Economic contribution and Social implications of the Fishing Activity

The fishery sector provides a livelihood for the majority of people living in the coastal belt and around irrigation tanks and reservoirs. The sector currently provides direct employment to about 650 000 people, comprising 150 000 who are engaged in fishing, 100 000 people in service activities and 400 000 people in fish trade (Fisheries Industry Outlook, 2016). There are at least 1 337 fishing villages in the marine sector, with 1 289 in the inland sector. A total of about 2 626 villages considered their main income to be derived from fisheries. This implies about 132 600 households in marine fishing villages and 11 920 households in inland fishing villages - a total of about 144 520 fishing households for the country as a whole. The marine sector accounts for 85 percent of the employment in the fisheries sector. About 250 000 people are actively engaged in fishing in the marine, inland and aquaculture sectors, and another 100 000 persons are believed to be indirectly employed in fisheries, especially in marketing and other ancillary services (Fisheries Industry Outlook, 2016).

1.3 Role of Women in Fisheries

Women are engaged in a wide variety of activities in fisheries throughout the world. These include pre- and post-harvest activities, as well as actively catching fish. The pre-harvest activities include some skilled and time-consuming jobs that take place onshore, such as net mending and net preparation. In addition, women help in carrying nets and other fishing gear to the shore. When catching fish, most of the time they use small implements, wading and gleaning the shores and lagoons for shellfish and seaweeds. Sometimes they serve as crew members and also own fishing vessels (Saison *et al*., 2002). The post-harvest activities that women are involved in include the processing and marketing of catch. Many women serve as workers in seafood processing plants. Other post-harvest activities that women are involved in include fish sorting, icing, packing, loading fish into transport vehicles, smoking and drying. When marketing the catch, women vendors are capable of maintaining secured buyers and establishing marketing networks.

Women in many countries are involved in aquaculture and inland capture fisheries. Sometimes, women of fisher families work in non-fisheries sectors and earn supplementary income for their families (Sverdrup and Jensen, 2002). Many women engaged in fisheries have organized themselves into various societies and are members of fish worker movements and fishers organizations. Women also contribute to the fisheries sector by developing knowledge on fisheries through research and imparting knowledge through teaching. As such, they help to address the global problem of food security (Saison *et al*., 2002).

While directly involved in fishery-related activities, women continue to take care of the family, whilst maintaining social networks and a community culture. They have not changed the gender-based household division of labour even with the diversification of physical, economic and social environments and circumstances. Due to their economic contribution, they play a vital role at all levels of the fishery chain.

However, women's role in fisheries appears to be largely invisible and unacknowledged. Although women make up the majority of workforce in fish-processing plants, they are mainly involved in low grade, unskilled jobs. They are largely unwelcome in marine capture fisheries also. Usually, women from poor fisher households are involved in fishery-related activities. Women also lack opportunities to hold managerial and decision-making positions on many occasions (Saison *et al*., 2002).

It has been estimated that more than 50 million women are engaged in fisheries throughout the world (Sothirak, 2002). Women are involved in the sorting, gutting and processing of fish in many coastal areas of Sri Lanka. Sometimes, they help their husbands to drag boats ashore. Women in coastal areas of Sri Lanka are involved in beach seining, and some women in those areas own beach seines and boats (Saison *et al*., 2002). Women are also involved in wholesale and retail marketing of fish throughout the island. Sometimes, they supervise the marketing of catch. Although the fishery-related activities that women carry out in Sri Lanka are documented (Saison *et al*., 2002), their contribution to the fisheries sector has not been studied in detail. There is a shortage of literature regarding systematic studies of the contribution of women to fisheries in Sri Lanka.

2. MANAGEMENT OF THE FISHERY AND RIGHTS-BASED APPROACH

2.1 Management of the Fishery

A separate Ministry of Fisheries was established in 1970, which became the primary fishery policy-making body and after 2000 became Ministry of Fisheries and Aquatic Resources Development.

The central government Ministry of Sri Lanka is responsible for fisheries. It formulates and implements the national policy on fisheries and aquatic resources development and other subjects which come under its purview. In general, promotion, development and management of fisheries in Sri Lanka is the responsibility of the Ministry. It also performs regulatory, extension, research, training and welfare functions in support of the fishing industry, through a number of specialist departments and institutions.

The Department of Fisheries and Aquatic Resources governs under the Ministry of Fisheries and Aquatic Resources Development and is responsible for developing and managing living aquatic resources in Sri Lanka. The Fisheries and Aquatic Resources Act, No. 2 of 1996 is the principal legal instrument governing the fishing industry of Sri Lanka. This Act replaced the Fisheries Ordinance of 1940 and all the amendments to it. It provides for the management, regulation, conservation and development of fisheries and aquatic resources in the country.

2.2 Brief History of the Former Right-based Approaches used in the Fishery

In Sri Lanka, women play an important role in fish processing and marketing. They also normally assist their fisher husbands in sorting the fish at the landing sites and in repairing nets, while handling the family budget. In fishery organizations such as Rural Fisheries Organizations, women make up about a fifth of members. The Fisheries and Aquatic Resource Act No. 2 of 1996 and Amendment No. 35 of 2013 provide a basis for involving fishing communities in decision-making processes. Women are represented on the Advisory Board to the Fisheries Minister. The coastal fisheries sector is vulnerable to climate change and disaster risks, including sea-level rise, floods and droughts, which can destroy the properties of fishing communities and also affect the fishery resources. Other risks and constraints in the small-scale coastal fishery include safety at sea issues because of unsafe boats, limited access

to markets, poor infrastructure (including sanitary and drinking water facilities), and a lack of alternative livelihoods and youth employment opportunities.

However, there are also strengths and opportunities: the Ministry of Fisheries and Aquatic Resources has a relatively strong institutional network, with regional fisheries officers covering all coastal districts. One of the Ministry's objectives is to improve the nutritional status and food security of the population, and there is a three-year fisheries development plan focusing on averting malnutrition. Some of the areas in the FAO's Small-Scale Fisheries (SSF) Guidelines are already being addressed, and the Ministry's vision and mission is to increase fish production and fish consumption while improving the socio-economic conditions of fishing communities. The SSF Guidelines will be an important tool for supporting these processes.

In Sri Lanka, the role of Civil Society Organizations in the SSF Guidelines development process was critical, and three dedicated consultations were held: one on marine capture fisheries, one on inland fisheries, and one on women in fisheries. Civil Society Organizations also play a particularly important role in making complex principles like those in the SSF Guidelines accessible to SSF communities.

2.3 Right-based Approach: Allocation and Characteristics

On the south-west coastal line in Sri Lanka, there were 62 fishing villages and a total fishing population of 24 500. The fishing community in Ambalangoda on the south-west coast consists of about 395 households (2 066) persons and has an active fishermen membership of 275 engaged in the coastal fisheries. About 37 fishermen migrate each year from the south coast to the northwest coast during some of the northeast monsoon months. The number of persons employed in activities ancillary to fishing such as marketing, fish curing, boat building, etc. is estimated to be 134. The employment in ancillary activities is shown in Table 1.

Table 1. The Employment in Ancillary Activities to Fishing.

Employment in ancillary activities	Activity No. employed
Marketing	75
Boat building	15
Net mending	28
Ice making	17
Fish processing	49
Total	**134**

Before the Tsunami disaster, 44 percent of fishing households did not own any boats or fishing equipment and provided only labour. Forty percent owned fishing craft, while the balance owned fishing gear only. After the disaster, however, most of the Government and Non-Government organizations donated fishing gears and crafts as subsidies. The above percentages have been seen to increase by 60 percent.

The average monthly income of the fishing households is estimated to be around from USD 100-200, with an average monthly expenditure of USD 150. The major part of the income is spent on food and repayment of debts, whereas substantial amounts are spent on alcohol, tobacco, gambling, and kerosene for cooking and lighting. The expenditure on children's education and clothing is minimal. Additional sources of income in this area include toddy tapping, manufacture and sale of handicrafts by the women, and coconut fiber-based cottage industries.

Hirewaththa and Patabandimulla are two fishing villages (6° 23'N; 80° 06'E) in Ambalangoda (Plate 2.1) on the south-west coast of Sri Lanka selected for this study.

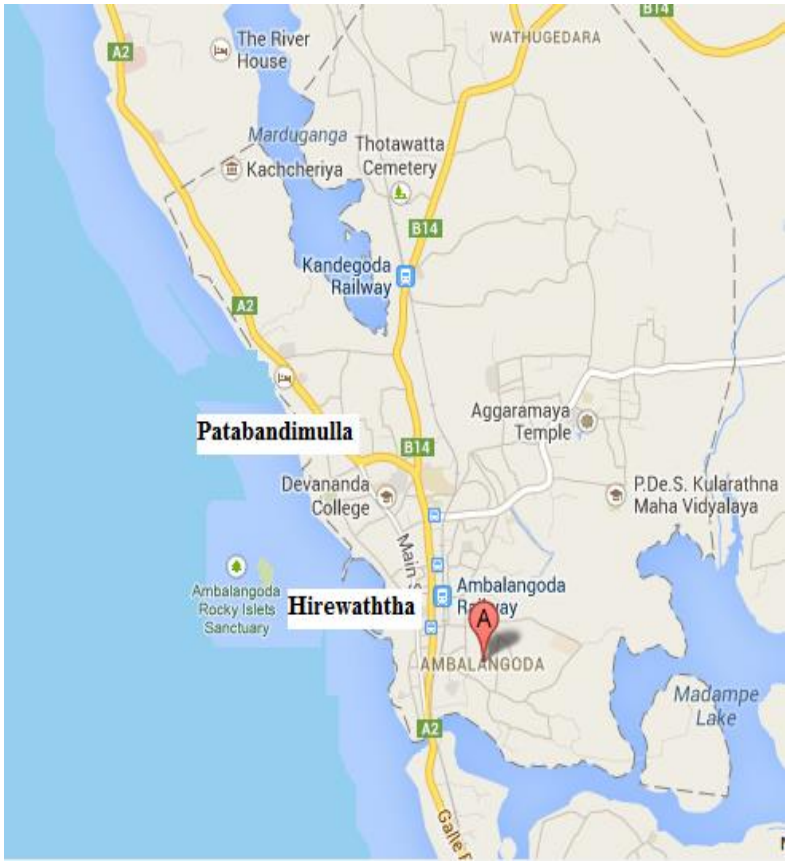

Figure 1. Experimental Location.
Source: Google maps.

3. CONTRIBUTION OF THE RIGHTS-BASED APPROACH TO ACHIEVING SUSTAINABILITY

3.1 Sustainable use of the Resources

The extent of Sri Lanka's EEZ is about 517 000 km^2, around 5.7 percent of which is covered by the continental shelf with an average width of 22 km. The coastal fisheries subsector in this continental shelf area produces about 50 percent of total annual fish production. In the offshore and deep-sea fisheries subsector, multi-day boats are operated, and the major fishing gear types are drift gillnetting and long lining. There has been a recent trend that crew members of some multi-day boats (especially in southern Sri Lanka) operate surrounding nets to catch fish. The major species caught are *Decapterus russelli*, *Elagatis bipinnulata*, *Coryphaena hippurus* and *Abalistes stellatus*.

3.2 Economic Viability of the Fisheries

3.2.1 General Economic Over View of Fishery Village

The income from fishing is also subjected to fluctuations, along with uncertainties of the duration of fishing trips (uncertainty of the boats returning on a particular day). The women are confronted with a high risk of falling into financial crises. A large number of women were engaged in earning income from various activities such as rope making, fish drying, selling prepared food items, sewing and selling garments, etc. Since fishing and non-fishing income are not correlated, women's involvement in earning an income could be seen as an important strategy adopted to smooth consumption when fishing incomes fall short of family consumption needs. The present study also revealed that revolving credit schemes like '*seettu*' and spend on activities would strengthen inter-family ties. Women also resort to intra-family adjustment strategies when they are confronted with income shortfalls.

The monthly income of WIF families was USD 100–150 and the average monthly income was USD 125. The income of the WNIF fisheries was USD 100–150 (Figure 2). This difference was statistically significant ($p < 0.05$). The income of the WIF families was significantly higher than that of the WNIF families to the simple reason that both husband and wife were earning an income. Since the present study was carried out during the southwest monsoon period, the average income levels of both categories may be different from the values of the present study when the entire year is considered.

3.2.2. Fisheries Activities of the Fishing Families

The women in this area were not involved in pre-harvest activities such as net mending and net preparation as well as catching fish. However, they were engaged in many post-harvest activities, including removing fish from small meshed gill-nets, collecting fish into baskets, fish processing and fish marketing (Figure 2).

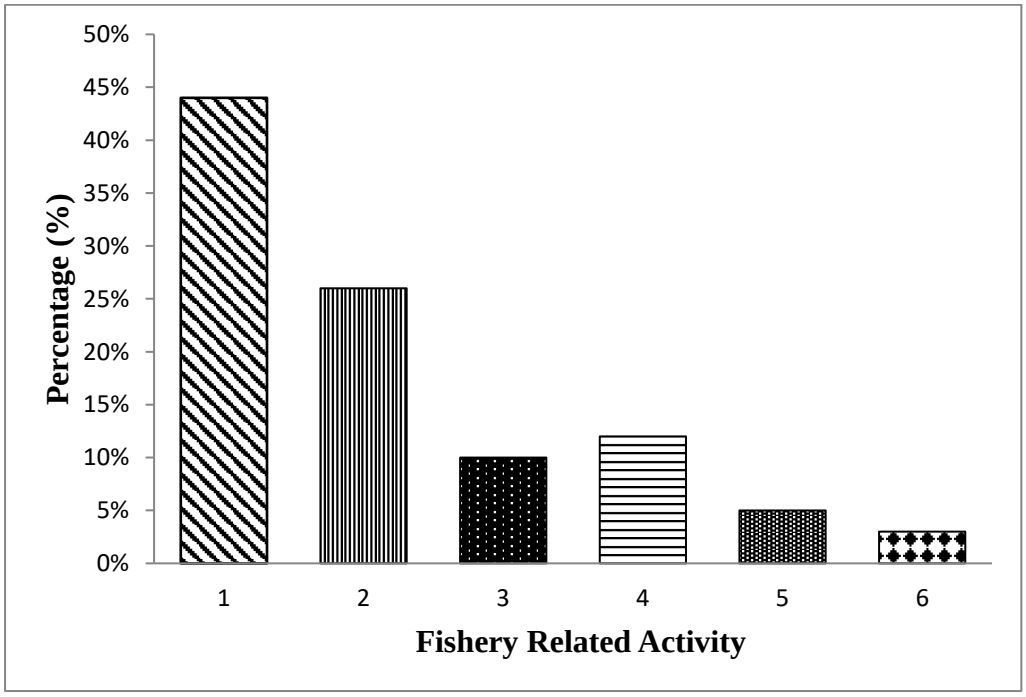

Figure 2. Percentages of Women involved in Different Types of Fishery related.
Activities 1. Fish processing 2. Removing fish from the nets 3. Collect fish into the baskets 4. Trading raw fish 5. Provide foods for boats 6. Supply fuel to the boats.

Forty-four percent of the women involved in fisheries were engaged in fish processing activities such as degutting, salting, sun drying and *jaddy* preparation, of which about 70 percent were involved in gutting fish. They work from about 7.00 a.m. to 1.00 p.m. and degut about three baskets of small pelagics, mainly *Amblygaster sirm* (Indian mackerel). These baskets, which were made up of cane, are parabolic in shape. With a diameter of about 1.2 m at the mouth and a depth of about 0.3 m in the middle, each basket holds around 400 fish. The women involved in degutting were paid USD 1 for one basketful of fish, and thus, they earned about USD 3 per day. Women involved in salting and drying fish worked from about 7.00 a.m. to 7.00 p.m., and each of them was paid USD 2.30 as the daily wage. Twelve percent of the women were engaged in marketing the catch at the market place close to the landing site. Of these 15 percent sold, large fish such as tuna were sold, whilst the others sold small fish such as mullets, carangids, clupeids etc. They purchased fish from the auction place at about 5.30 a.m. and marketing was over by around 9.00 a.m. Each of the women who sold large fish earned a profit of about 10 USD per day, while each of those who sold small fish earned a daily profit of about USD 5. Twenty-six percent of women engaged in removing fish from small meshed gill nets operating mainly for clupeids. The main species removed were *A. sirm* and *Sardinella* spp. They worked from about 5.30 a.m. to about 7.30 a.m., and each of them was paid USD 3/ day. Ten percent of women

were engaged in collecting fish into cane baskets to be carried to the auction place. They worked from about 5.30 a.m. to 7.30 a.m. and each of them was paid USD 1/ day if the catch was poor and USD 2 if the catch was good.

The women had a little involvement in the ancillary support services such as providing food and supplying fuel to the boats. Five percent of women were engaged in providing food for the fishermen, boat owners and women involved in fisheries-related activities. They started this service near to the auction place. The government had donated two stalls under the *Divi Naguma* Program for two women. They opened their stall from about 5.00 a.m. to 12.00 noon, and each earned a daily profit of about USD 4.3. About three percent of women were engaged in supplying fuel such as kerosene oil and diesel for the boats. They opened their stalls near to the boat landing places throughout the day and used part of their homes for the stall; each of them earned a daily profit of about USD 5.

Women in the Hirewaththa and Patabandimulla fishing villages, where the present study was carried out, were not involved in catching finfish or shellfish. In many coastal regions of Sri Lanka, women are engaged in pre-harvest activities such as net mending (Saison *et al*., 2002). However, in the fishing community studied, women were not engaged in such activities. Women's roles in fisheries in the Hirewaththa and Patabandimulla villages are predominantly in the fish processing and marketing sector, with little participation for ancillary support services. It has been reported the majority of the workforce in the fish processing sector in the world consists of women (Williams, 2001).

In the studied community, it was also found that nearly 50 percent of women were engaged in fish processing activities that involve low grade, unskilled jobs such as gutting, salting and sun-drying as reported by EC (2003) for many European countries.

3.3 Social Challenges

Results of the statistical analysis of socio-demographic conditions of WIF fishing families and of WNIF families are summarized in Table 2. There was no significant relationship between the civil status and the women involvement in fisheries ($p > 0.05$) (Figure 3).

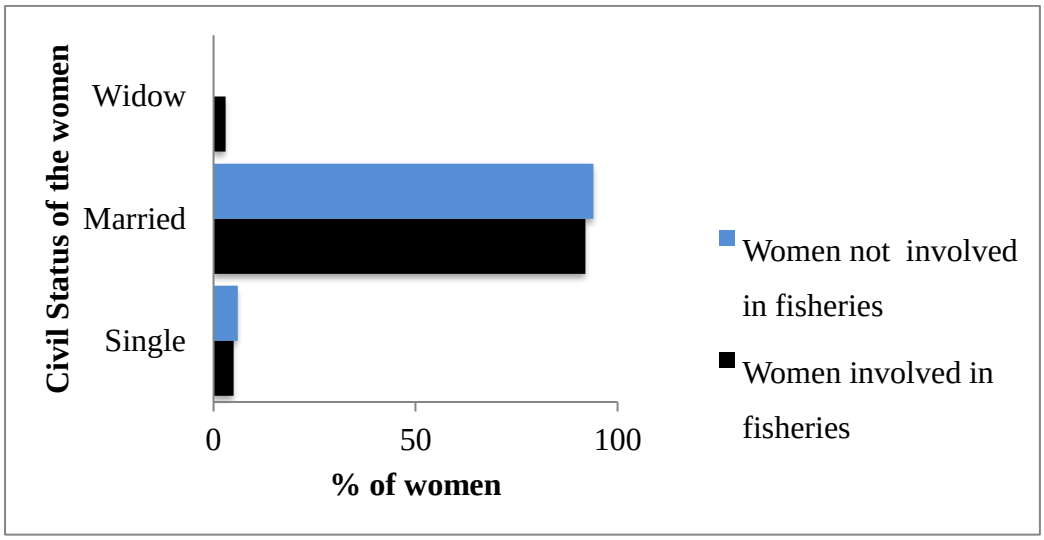

Figure 3. Civil Status of women involved in fisheries and women not involved in fisheries.

Table 2. Demographic Characteristics of the Two Study Groups.

Characteristic	Women involved in fisheries (n = 100)	Women not involved in fisheries (n = 100)	Significance Level
Civil status			
Single	05	06	Not sig.
Married	92	94	
Widow	03	00	
Religious Affiliation			
Roman Catholic	98	100	Not sig.
Hindu	02	00	
Family size			
Composition 4 or <4	23	82	P < 0.01
Composition >4	77	18	
Literacy			
Able to write and/or Read	32	98	P < 0.01
Not able to write and/or read	68	02	
Education of the Children			
Having School going children	42	68	P < 0.01
Not having School going Children	18	00	
Housing			
Living in a rented house	29	02	P < 0.05
Living in an own house	71	98	
Income (Monthly)			
US$. 50 -100	28	67	P < 0.01
US$. 100 -150	72	33	
Family (the woman)			
Descendant of a fishing family	90	98	Not Sig.
Not a descendant	10	02	

Age of the women in the study population ranged between 19 to 55 years while the younger age group, 21-25, was dominant. Civil status of the women involved in fisheries indicated that 92 percent of the women were married, five percent were single, and three percent were widows. In the group in which women were not involved in fisheries, 94 percent were married, and 6 percent were single. There were no widows in this group. Thirty-five percent of women got married before they reached 18 years of age in both categories and 5.2 percent of women in the age group of 15-19 had entered matrimony.

There was a significant relationship between family size and the women's engagement in fisheries ($p<0.01$) (Figure 4).

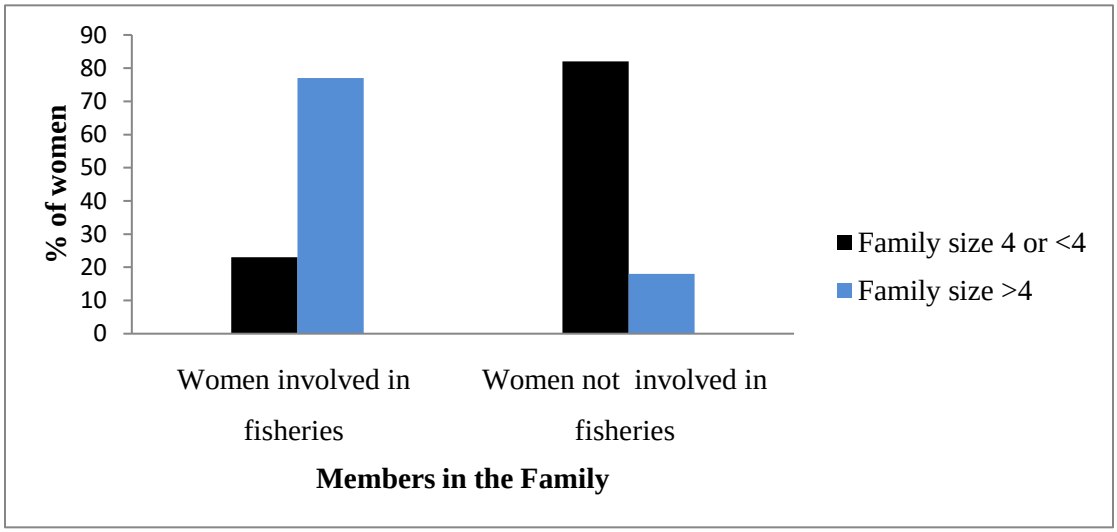

Figure 4. Family size of the study population.

Seventy-seven percent of the WIF families and 18 percent of the WNIF families had family sizes of more than 4 members. Eighty-two percent of the WNIF families and 23 percent of the WIF families consisted of 4 or <4 member families.

Religious affiliation of the families studied indicated that 99 percent of the families were Roman Catholics (Table 2); the other one percent were Hindus. They had migrated from Batticoloa due to migrating fishing activities. There was no significant relationship between religion and the women involvement in fisheries ($p>0.05$). 94 percent of the women of the studied community were descendants of fisher families (Table 2). There was no significant relationship between women involvement in fisheries and the fact that they were descendants of fishing families ($p > 0.05$).

It was evident that the ability to write and/or read among women, and their involvement in fisheries, has a close relationship. The number of women who can write and/or read was significantly higher among those not involved in fisheries than those involved in fisheries ($p < 0.01$) (Table 2).

Most of the fishery-related activities in which women were involved require unskilled labour and – even without an ability to read and/or write – they can be employed. There was found to be a literacy rate among women not involved in fisheries; this may be the reason for the high rate of attending school of their children.

There was a significant relationship between women involvement in fisheries and children attending school ($p < 0.01$), too. In both categories, the number of families in which children were going to schools was higher than the number of families in which children were not going to schools. Among the WNIF families, there was not a single-family with children of school-going age who were not attending schools (Table 2). Forty-two percent of children were attending school in the WIF families. Thirteen percent of the children of the studied community belonged to 1-5 years age category, 18 percent of the children were 6-11 years age category, and 11 percent of the children were in the 12-18 years age category. Sixty-eight percent of children were attending school in the WNIF group. Twenty-nine percent of the children of the studied community were in the 1-5 years age category, 17 percent of the children were between 6 and 11, and 22 percent of the children were 12-18 years age category. Forty percent of children in WIF families and 32 percent of children in WNIF families had left school at the age of 16, going on to marry and enter jobs.

However, it appears that, although the percentage of illiterate women among those who were involved in fisheries was high, most of them try to educate their children. Therefore, the percentage of families with children who were not going to school was low in this category too.

According to available socio-demographic data, there was a significant relationship between the proprietorship of a house and the women involvement in fisheries ($p < 0.05$). In both categories, the number of families living in their own houses was higher than those living in rented houses. Ninety-eight percent and 71 percent of the families in which women were not involved in fisheries and women involved in fisheries where living in their own houses respectively. Twenty-nine percent of the families live in the rented houses where women were involved in fisheries because these families were affected by the Tsunami. Even though the government has provided them with new houses, they were situated further away from the coast. Therefore, they have sold these houses and are living in rented houses in close proximity to the beach.

4. MAIN CHALLENGES AND WAY FORWARD

4.1 Challenges for the Fishery

4.1.1 Housing Conditions

Based on the physical nature, the houses of the fisher community could be divided into two groups, i.e., the houses with cemented floors and asbestos or galvanized sheet roofs, and the houses with cemented floors and tiled roofs, with the latter part covered by thatched coconut fronds. In both categories, the number of families living in houses with cemented floors and asbestos or galvanized sheet roofs was higher than those living in houses with cemented floors and tiled roofs covered with thatched coconut fronds. Most of the families affected by the Tsunami have received asbestos or galvanized sheets as subsidies, in order to construct their roofs. Forty-four percent of the women involved in fisheries and 96 percent of the women not involved, were living in houses with cemented floors and asbestos or galvanized sheet roofs. Four percent of the families in which the women were not involved in fisheries, and 16 percent of the families in which women were involved in fisheries, lived in houses with cemented floors and tiled roofs, with the latter part covered with thatched coconut fronds (Figure 5).

All households in the fishing community had access to pipe-borne water. However, 78 percent of households in which women were not involved in fisheries had their own water supply, whereas 88 percent of the other category shared a common pipe by the roadside (Figure 5). A statistically significant relationship was observed between the availability of electricity in the household and women's

involvement in fisheries. About 96 percent of the households where women were not involved in fisheries had electricity, while only 58 percent of the households of the other category had this facility (Figure 5). The relationship with TV, Radio and telephones, as well as computers available in the houses and the women involvement in fisheries or not, were analyzed. Of the households where women were not involved in fisheries, about 100 percent had TV, Radio and telephones, and 10 percent had computers. Of the households where women were not involved in fisheries, about 41 percent had TV, Radio and telephones, and two percent had computers (Figure 5).

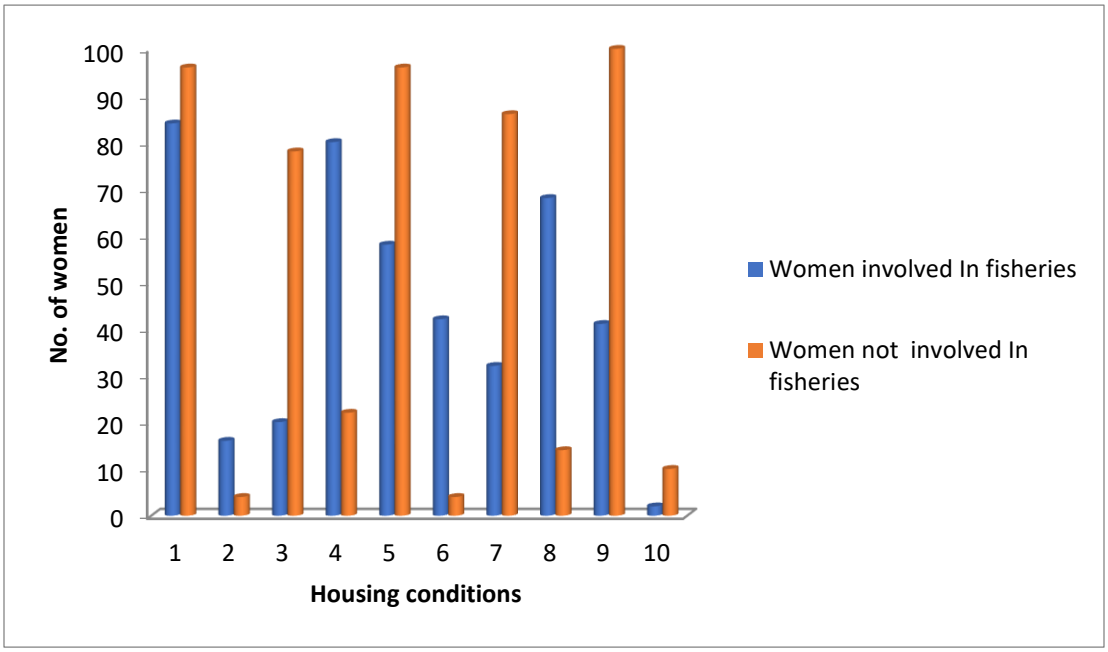

Figure 5. Housing Conditions of the Two Study Groups.

1. Houses with cemented floors and Galvanized/ Asbestoses sheets 2. Houses with cemented floors or tile roof and later part thatched roof 3. Houses with separate pipeline 4. Share the common tap 5. Houses with electricity 6. Houses without electricity 7. Used LP gas or kerosene for cooking 8. Used fire-wood for cooking 9. Availability of TV/Radio/telephone 10. Availability of Computers

The sources of energy used for cooking in the studied community were LP gas, kerosene and fire-wood. Of the WIF households, about 68 percent used fire-wood and the rest used kerosene for cooking; none of them used LP gas. Of the WNIF households, about 12 percent used LP gas, and about 74 percent used kerosene for cooking. About 14 percent of women not involved in fisheries used fire-wood. A relationship was noted between the source of energy used for cooking and women's involvement in fisheries (Figure 5). Most of the fishers in the study, regardless of the involvement of women in fisheries, live in houses of fairly good condition. As such, there is no significant relationship between the nature of the house and women involvement in fisheries. However, a majority of WIF households were without electricity, used fire-wood for cooking, and shared a common tap by the roadside.

Meanwhile, the majority of WNIF households had electricity, used LP gas or kerosene for cooking, and had their own pipeline. Therefore, the families where women were involved in fisheries, although earning a higher income, appear to live in a more traditional way. WNIF families, on the other hand, although

receiving inferior income, appear to live in a more sophisticated manner. This may be due to the high literacy rate among the women who were not involved in fisheries.

4.1.2. Alcohol use in the Family

Husbands of all women in the studied community consumed liquor. However, in 76 percent of the WIF families, husbands were regular consumers of liquor, while the rest were occasional consumers. However, in WNIF families, only 16 percent of husbands were regular consumers, with 84 percent being occasional consumers (Table 3). As such, there was a relationship between the involvement of women in fisheries and consumption of liquor by husbands. All the women interviewed denied that they consume liquor.

Table 3. Alcohol use in the Family.

Alcohol use	Women involved in fisheries (%)	Women not involved in fisheries (%)	Significance Level
Husband was a regular consumer of liquor	76	16	P < 0.01.
Husband was an occasional consumer of liquor	24	84	

It appears that liquor consumption by husbands is low when women are not involved in fisheries. The reasons for this may be the low income and high literacy rate among women of these households.

4.1.3 Loan had taken from the Banks

There was a significant relationship between the women who have taken bank loans and the women involved in fisheries ($p < 0.01$) (Table 4). Seventy-nine percent the women involved in fisheries and 32 percent of the women not involved in fisheries had taken loans from the banks ranging from USD 50 to 200. Both categories have not paid back their loans. Twenty-one percent of the WIF group and 34 percent of WNIF group had not taken loans.

Table 4. Loans from the Banks.

	Women involved in fisheries (%)	Women not involved in fisheries (%)	Significance Level
Taken loan from the bank			
Yes	79	32	P < 0.01
No	21	68	

4.1.4 Low Income and Gender Discrimination of the Fishery related Activity

The income of women engaged in degutting was more or less equivalent to the daily wage of a male casual labourer. A male casual labourer working for 8 hours per day was paid only USD 6.6 during the period of this study. Therefore, it cannot be considered that the labour of women involved in gutting fish is exploited with gender discrimination. After 1.00 p.m., these women go back to their homes and spend the rest of the day with the family, attending to day to day activities of the household. However, women labour of those involved in salting and sun-drying appears to be exploited by employers with gender discrimination. In addition, they did not have much time to spend with their children and attend the day-to-day activities of the household.

The work of women involved in removing fish from gill nets also appears to be not exploited by employers through gender discrimination. However, the labour of those involved in gathering fish into transportation baskets appears to be exploited with gender discrimination when the catch is poor. This may be the reason that a low number of women are engaged in activities such as salting, drying and gathering fish into transportation baskets.

In many countries throughout the world, women are involved in marketing the catch. Compared with other fishery-related activities, marketing the catch appears to be the most lucrative activity, as the women engaged in marketing earn the highest income for the time they spend. Most of these women were over 50 years of age and supported extended families. Husbands of some of these women were not employed, and the entire family depended on the income earned by them. Many widows were also engaged in fish marketing. Therefore, it appears that economic demands have diversified their roles, although they have not changed the gender-based, household division of labour. Such complex demands in women's labour due to changing economies and social environments have been experienced in many countries.

4.2 Improving Fisheries Sustainability in the Future

The problems faced by the women who were involved in fisheries in these two areas are multi-faceted with various manifestations. There were also specific problems such as: lack of financial assistance and insurance schemes for fisheries families from the government; illiteracy; poor sanitation conditions and lack of infrastructural amenities like medical attention, pipe-born water, electricity etc.; lack of fisheries extension services; lack of credit and capital facilities, and lack of Government presence during unexpected disasters. In addition to these, the major constraints faced by the women are non-involvement in the decision-making process, some cultural practices, and an absence of organized markets.

In conclusion, the present study indicates that the WIF households earn a higher income than WNIF households do. However, even with the higher income, it appears that the living conditions of WIF families were not better than those of the other category. This may be mainly due to low literacy rate, large family size and the higher number of loans taken from the bank among the women involved in fisheries. Therefore, it is necessary to carry out programmes on social development, financial handling and communication skills, development programmes to educate them and to enhance their living standards. Adult education, post-harvesting and marketing programmes – conducted with the help of universities, NGOs and governmental organizations – would be very useful in this regard.

REFERENCES

EC, 2003. Women in fisheries: an unnoticed role. Fishing in Europe 17: European Commission. Available from: http//ec.europa.eu/fisheries (Accessed on 20th April 2009).

Elliott, F. 2002. Livelihoods, Diversification and Agrarian Change. In: Rural Livelihoods and

National Aquatic Resources Agency. 2016. Fisheries Industry Outlook. Colombo, Sri Lanka.

Okali, L. and Holvet, D.K. 2007. *Role of rural women in the development of fisheries in Panay: Focus on the socio-cultural and economic variables*. University of the Philippines in the Visaya, Iliolo City

Maldeniya, R. 1997. Summary review of demersal fishery characteristics in the western and southern coastal areas. *Report for NARA/MacAlister Elliott. Sri Lanka harbour and other charges Project TA No. 1975- SRL. Wijayaratne UNU-Fisheries Training Programme.*

Raghavan, G. 1961. Gendered livelihoods and development in a coastal community in the Visayas region of the Philippines. Department of Geography, Dalhousie University, Canada.

Siason, I.M.; Kotler, P.; Roberto, N. M. and Leisner, T. 2001. Women in fisheries in the Philippines. In *International Symposium on Women in Asian Fisheries*. Malaysia: ICLARM World Fish Center.

Siriweera, W. I. 2002. *History of Sri Lanka: from earliest times up to the sixteenth century.* Colombo: Dayawansa Jayakody and Company.

Siriwardena, U.S. 2001. New approaches to capture fisheries statistics in Sri Lanka. In: New approaches for the improvement of capture fishery statistics in the Mekong Thailand, pp116 RAP publication2003/01.

Sothirak, A. 1981. The economic theory of social institutions. Cambridge: Cambridge. University Press.

Sotto, F.B., Laron, C.L.M., Murray, F. J., and Heeger, T. 2001. Women's participation in sapyaw (haul seine) fishery on the eastern coast of Barangay Sillon, Bantayan Island, Cebu, Philippines.

Ten Year Development Policy Framework 2007- 2016. 2006. Department of Fisheries and Aquatic Resources. Census of Marine Fisheries in Sri Lanka West, South and East Districts, UNDP/FAO/SRL/91/022, Marine Fisheries Management Project, Colombo, Sri Lanka.

The State of World Fisheries and Aquaculture 2012. 2011. Annual Fisheries Statistics. Department of Fisheries Malaysia, Kuala Lumpur. 193pp.

Villacorta, G. 2008. Gendered livelihoods and development in a coastal community in the Visayas region of the Philippines. Department of Geography, Dalhousie University, Canada.

Viravongsag, L. V. 2004. Microcredit and women in fishing communities: A case study from the Philippines.

Weerathunga, S. and Snyder H. K. 2009. New fish resources of reservoirs in Sri Lanka: Feasibility of a subsidiary gill net fishery for minor cyprinds. Fisheries research 6:17 – 34.

Wickremasinghe, R. M. 2001. Pearls and metal for money, Sunday Observer [21.11.2001].

Wijeyaratne M. J. S. 2001. Coastal fisheries in Sri Lanka: Some Recommendations for future management. Ministry of Fisheries and Aquatic Resource Development. Sri Lanka.

Wijethunga, S. K. 2000. Socio-economic Profile of Coastal Fishers in Sri Lanka. *Voice of Women*, Vol. 6 (5), pp. 18-22.

Willams, S. B. (2001). Fish as a Prime Mover in the Economic Life of Women in a Fishing Community. In: Eide A., Vassdal P. (eds.): Proceedings of the 9th International Conference of the International Institute of Fisheries Economics and Trade. Tromso, Norway.