GUIDELINES ON FISHERIES EXTENSION IN SRI LANKA

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This technical report is one of a series of extension handbooks prepared during the course of the Extension Training for Fisherfolk Project - UNDP/FAO/SRL/87/003

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Foreword

The purpose of this paper is to provide guidelines to the planning and implementation of fisheries extension programmes and activities in Sri Lanka. The main focus is on field-level fisheries extension activities and not so much on the management of fisheries extension at higher levels. Therefore the paper is hoped to be of most practical use for those who are (going to be) involved in fisheries extension activities at the field-level.

Fisheries extension is a concept that is not always very well understood. One reason is that extension in general involves a rather complex process that requires clear objectives, clear programmes and the resources to implement these programmes. Another reason is that the effects of extension are not always clearly visible in a short period of time. Extension often takes the starting point of helping people to help themselves, and this may require time. Furthermore, fisheries extension has its own complicated features, when for example compared to agricultural extension. Fisheries extension can not always be given ‘on the job’ which would mean at sea and fishermen are frequently away from their homes at irregular times. This makes it difficult to gather a group of fishermen. Furthermore, while one agricultural community might have relatively homogenous farming systems, a fishing community in Sri Lanka usually has a very diverse range of ‘fishing systems’ each with its own extension requirements.

Following a government decision made in 1990 to stop government support in aquaculture, this paper is directed, mainly through the examples used, on marine fisheries. However, the contents may have kept validity for the fields of aquaculture and agriculture in general. Although extension approaches and methodologies might be different in agriculture and in fisheries, the principles of extension will remain the same.

During the past decade, government support to the fisheries sector in Sri Lanka, has undergone rapid changes. Also government support in fisheries has not yet evolved in the establishment of a fisheries extension service. With a view to possible future decisions regarding fisheries extension, this paper does not take the present government support in fisheries extension as a starting point. Rather it focuses on what a fisheries extension service could do at the village-level under circumstances that are opportune for Sri Lanka. As much as possible reference will be made to the National Fisheries Development Plan of 1990 – 1994. Here it should be noted that fisheries extension services could also be part of a programme of a non-government organization.

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Inge Jungeling
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MARINE ZONES OF SRI LANKA

(Source: FAO, 1991: Map 1.)
CHAPTER 1. THE FISHERIES SECTOR IN SRI LANKA

The Importance Of The Fisheries Sector

The fisheries sector is important for Sri Lanka for a number of reasons. The National Fisheries Development Plan 1990-1994 mentions the following reasons:

1) fish has a high nutritional value and is an important source of animal protein in the Sri Lankan diet. According to Food Balance Sheet (Department of Census and Statistics), 65% of the animal protein consumed in Sri Lanka in 1988 comprised of fish.

2) the fishing industry provides employment for many people. According to the Fisheries Survey of 1989, 96,000 persons are fully employed in fishing, around 10,000 persons on a part time basis and around 5,000 persons are employed in fisheries related activities;

3) the fishing industry contributed 1.9% to the gross domestic production of Sri Lanka in 1988 (Central Bank 1988); and

4) the export of fish and aquatic products provide the country with export earnings including foreign exchange. In 1988, the total export earnings on fish and aquatic products was Rs. 825 million.

The Need And Consequences Of Raising The Production Of Fish

Although fish is exported, Sri Lanka is at present a nett importer of fish. The demand for fish cannot be met by the amount of fish caught. But the type of fish exported is not the same as the type of fish imported. Sri Lanka mainly exports high value fish such as prawns, lobsters, cuttle fish and shark fins and imports mainly processed fish such as dried fish, canned fish and maldive fish. Especially with a view on the growing population it is important that production of fish for local consumption increases and with a view on the country's need for foreign exchange it is important that imports of fish decrease and that exports of fish increase.

While it is easy said that the production of fish should increase, in practice this might not be so easy to achieve. It is not known how much fish is exactly available in Sri Lanka's coastal and offshore waters, but there are clear indications that some fish resources are depleting. For example, research of the National Aquatic Research Agency(NARA) has shown that shrimp resources have depleted in the Chilaw coastal waters and small pelagic resources (sardine, mackerel, etc.) in the coastal waters of the Western region (Karunasinghe and Fonseka, 1985).

Many reasons might have caused that more fish is harvested than the amount of fish that should be left to maintain the fisheries resource at a sufficient level. An important reason is overfishing. There is especially an over concentration of pelagic gill netting in the Western coastal fishery. Overfishing is caused by the high demand for fish when compared to the fish available in the markets. This results in relatively high prices of fish. However, since the lack of employment opportunities in other sectors is high, for many people fishing remains a relatively earning occupation.

Another reason for a depletion of the fish resources is the use of certain types of fishing gear, such as nets with small mesh sizes, trawl nets, and purse seining and fishing methods such as use of dynamite. For this reason the Government has made certain regulations, which have to be enforced at the field-level by the fisheries field officers.

It is therefore important not only to ensure that fish production increases, but in such a way that increased levels of production can be maintained for our next generations to come. This is called a sustainable use of fish resources. A sustainable use of the fish resources can be obtained by a sound management of the fisheries resources. Fisheries management can focus on existing stocks of fish, but it can also focus on measures to increase the fish population through breeding.
Fish breeding includes **aquaculture** when it concerns fresh or brackish water (for example, the breeding and production of carp and tilapia in irrigation reservoirs and the breeding of shrimp in artificial ponds), as well as **mariculture** when it concerns the sea (for example, the breeding and production of oysters and mussels on banks).

In general, it is a complicated process to support increased fish production within the context of a more sustainable use of fish resources. The options mentioned in the National Fisheries Development Plan 1990-1994, are to promote methods for demersal fishing in the coastal waters through the use of bottom set nets, bottom long lining, squid jiggling, trap fishing and fish aggregating devices, and to promote offshore fishery by multiday boats. An alternative option with a high potential to increase fisheries production is the promotion of aquaculture.

Another important point that should be considered when promoting increased marine fisheries production, is the effect on the scale of the operations and therefore on the employment of people in the fishery sector. Many people are engaged in fishing, but at different scales of operation. The scale of operation is usually classified according to the type of craft. The major types of crafts in Sri Lanka, in 1988, are classified in Table 1.

It should be mentioned that a classification according to craft, excludes the fishing operations that do not involve a fishing boat, such as for example certain types of line fishing.

Larger boats that can carry more fishing equipment are able to fish further offshore than smaller boats without engines or with less powerful engines. Larger boats can also deploy different types of fishing gear. However, the introduction of new fishing equipment that could lead to a higher fish production per boat, such as the larger boats, engines, nylon nets and fishing gear, such as drift nets and ring nets, has shown that larger boats do often not tend to fish further offshore. Instead they often use the same fishing grounds as smaller crafts do. In this increased competition for fishing grounds, larger boats often benefited more at the expense of smaller boats. Consequently, the incomes of fishermen using smaller boats became relatively lower and these fishermen might have to find additional or other employment.

<table>
<thead>
<tr>
<th>Type of Craft</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Non-Mechanized (Oru, Vallam, Theppam, etc)</td>
<td>12,946</td>
</tr>
<tr>
<td>Traditional Motorized Craft (with outboard engines)</td>
<td>3,491</td>
</tr>
<tr>
<td>FRP Boats (with outboard engines)</td>
<td>7,896</td>
</tr>
<tr>
<td>3 1/2 Ton Boats (with inboard engines)</td>
<td>3,289</td>
</tr>
<tr>
<td>Boats over 3 1/2 Tons</td>
<td>184</td>
</tr>
<tr>
<td>Total</td>
<td>27,806</td>
</tr>
</tbody>
</table>

Table 1. **Fishing Craft In Sri Lanka, 1988**
(Source: National Fisheries Development Plan 1990-1994)

It is important that such effects in the effort to increase fish production are recognized. A Government might accept that to a certain extent an increased scale of fishing is inevitable and that this will effect the employment opportunities in the fishing sector. However, this choice appears only acceptable when it is possible that other sectors, such as the industry or services sectors, can absorb
unemployed fisherfolk in a suitable way. At present this option is not considered realistic in Sri Lanka. Some countries in the region, such as for example Malaysia, have adopted a strategy to stabilize or decrease the number of fishermen.

For certain types of fishery in certain areas that have to cope with already declining fish resources or resources that are expected to decline in the future, the objective to improve fish resources management and the objective to create employment in the fisheries sector seems contradictory. For other types of fishery that catches still abundant resources, it might be more sustainable to increase fish production through increase in efficiency of existing fishing craft and gear, rather than through an increase in their numbers. Employment opportunities can be anticipated in successful developments in aquaculture and mariculture.

**Government Objectives And The Need For Fisheries Extension**

Following the above discussion, the government objectives with regard to the fisheries sector can be classified in two categories (Huizinga, 1990):

Firstly, there is a set of objectives that relates to an **increased production of fish** for the purposes of increasing the nutritional status of the people in Sri Lanka, of increasing the fisherfolk’s income, and of increasing the exports of fish. As mentioned in the National Fisheries Development Plan 1990-1994, such production increase should take place in the context of a rational and optimum exploitation of Sri Lanka's fisheries and aquatic resources based on improved management and on the application of appropriate technology. Programmes designed to reach this set of objectives will have an emphasis on production and output.

Secondly, there is a set of objectives that relates to an **increased standard of living of all persons dependent on fisheries and fisheries related activities**. This set of objectives include an increase in the incomes and an increase in employment opportunities. Programmes designed to reach this set of objectives will have an emphasis on human resources development.

As mentioned above, it will not be easy to ensure that all objectives can be reached at the same time. In general, programmes to support these objectives can only be successful when it is geared to the needs and opportunities that fisherfolk has. A fisheries extension service can play an important role in implementing and shaping the programmes in such a way that they can meet the objectives.
CHAPTER 2. WHAT IS EXTENSION?

However important extension can be, it is still a concept that is not always very well understood. Many persons think that it is a vague activity as they believe that its impact cannot be measured. Yet, the impact of extension can (and should) be measured, provided that the programme has clear objectives and sufficient means for implementation.

Other persons have limited interest to understand more about extension because they feel that the impacts of an extension programme are often not clearly visible within a short period of time, especially when it concerns income generating activities, such as fisheries. Yet, they forget that this is exactly the big challenge of extension, since extension often takes the starting point of helping people to help themselves and this may require time.

In this chapter we will first discuss what extension exactly is, followed by what the meaning of fisheries extension is and what it can do.

A Definition Of Extension

There are many definitions of extension. Here a rather detailed definition is used:

Extension is the collective noun for all organized communication efforts by which an individual or agency tries to bring about changes in the knowledge, attitudes, skills and/or behaviour of a client population, in order to reach one or more objectives that have been established within the framework of an overall development policy.

At first, this may seem a complicated definition, but it clearly specifies what the main action is and what the main features of extension are. The main action of extension is the communication effort and the main features are the following:

1. extension is a collective noun;
2. it is an organized effort;
3. it works with a client population; and
4. it serves a development policy.

Sometimes people have adopted a very wide meaning of extension such as ‘informal adult education’. However, informal education cannot always be called extension, for example, when it is not a collective or an organized effort; or when it is not focusing on a specific client population; or when it does not operate within the framework of an overall development policy. Also, extension can be given to children, for example during a campaign to promote proper brushing of teeth. Yet, the main purpose of extension is to provide information.

Some authors suggest that extension is only focusing on the rural population for the purpose of rural development (e.g., Oakley and Garforth, 1985 and Jacobsen, 1987). Instead, extension can be applied on any type of topic for any type of target group in any type of country. One example is a country-wide health extension programme with the objective to eradicate rabies.

The information that the extension service communicates to its clients is called the extension message. The contents of the extension message are in the ideal situation adjusted to the needs and experiences of the clients. But, if the extension message is fully based on the needs of the government that supports the extension service, extension has become propaganda (Freire, 1973)

Fisheries Extension As One Of The Intervention Instruments

Extension is often mistaken for community development. Community development usually aims to improve the living conditions, both economic and social, of the population or of a certain target group in a community. The activities initiated to improve living conditions can be very diverse, depending on the needs of the client population in a particular community and/or the wishes of the supporting
organisations, if such organisations are involved. The activities may comprise various components such as a health component, an agriculture or livestock component, an environmental component, a fisheries component, an enterprise component, a welfare component (such as the construction of houses and community centres), etc.

To support the development of a component within the community, sometimes outside assistance is deemed necessary. Such support can be in various fields, such as: research, legislation, savings and credit schemes, business advice, marketing support, subsidy schemes, formal education or training, and extension. When applied in a specific programme, these various fields are called intervention instruments.

A successful programme usually incorporates more than one instrument and relies on a carefully thought out mix of intervention instruments. Within this programme, these instruments are developed into sub-programmes that are integrated with the other sub-programmes, such as a research sub-programme or an extension sub-programme.

When we talk about an extension programme, we in fact often refer to an extension sub-programme that is part of a larger programme. For example, a programme that aims to introduce a new type of the outrigger canoe, incorporates a large mix of intervention instruments: a research instrument, to develop an appropriate boat; a training instrument to train carpenters to make the boat, an extension instrument to create awareness about the boat and inform interested persons about the various relevant aspects of the boat, a credit programme to facilitate fisherfolk to buy the boat, etc. etc.

Community Development In Relation To Fisheries Extension And Other Support Services

What becomes clear here is that firstly, fisheries development is only one component of community development, although this may include fisheries and fisheries related activities. A certain overlap between components can easily occur. For example, to improve the hygienic conditions of a fish market, the Municipal Council, the health officer and the fisheries extension agent should be involved.

Secondly, extension is only one of the many support services or intervention instruments that may be required for community or fisheries development, next to other instruments such as for example credit supply. These two boundaries mark the area of competence of the fisheries extension agent.
However, in extension there are various extension methods, and a choice for a certain extension method depends on many factors such as the type of message to be told, the amount of people to be reached, the client population, the resources available to conduct the specific extension programme and the individual initiative of the extension agent. Extension methods may include mass media, such as the fisherfolk radio; group methods, such as group discussions, demonstrations, workshops or excursions; and individual extension whereby the extension agent communicates with one person only (Van der Ban Hawkins, 1988).

The fisheries extension agent can be directly involved in the group or individual extension methods and can provide assistance in developing a mass media programme and in further explaining the message propagated in the mass media programme in the field. The extension methods will be discussed in Chapter 4.

Of course, one can argue that fisheries development will be of little use if other components, such as health are not attended to. That will be true in many cases, but that does not mean that the fisheries extension agent should engage in health activities; that is the area of competence of the health agent. However, the different field level agents can provide valuable assistance in each other's area of competence.

Especially in Sri Lanka, it is not necessary that the fisheries extension agent is directly involved in activities not related to fisheries. Here, when compared to other countries in the region, many government organisations are represented at the village level and/or at the divisional level. Also many non-government organisations or even private organisations are active in Sri Lanka and it might be possible to obtain their services as well. However, to obtain such assistance, at least some coordination of programmes engaged in community development at community level will be required.

Extension Tries To Bring About Changes In Knowledge, Attitudes, Skills And/Or Behaviour

Changes are necessary when fishermen or fisherwomen are convinced that their present situation does not correspond with the desired situation, and/or when an outside organization, such as the Ministry of Fisheries, argues that the present situation should be changed. The fisheries extension agents will have to work with a variety of interests that may sometimes contradict. Fisherfolk within one community may have opposing interests. For example, some fishermen may like to improve their ring net operations while other fishermen who are not using ring net might oppose a more extensive use of ring nets in the area, especially when it occurs in the inshore waters.

Furthermore, the interests of the Ministry of Fisheries and that of the fisherfolk are not always in conformity. For example, the Ministry of Fisheries might have adopted a policy to ban ring nets from the inshore waters, while fishermen find it very convenient and rewarding to use ring nets in the inshore waters.

The fisheries extension will always have to work with this type of contradictions. More than the agricultural extension agents would because fishing usually means tapping from a common, not entirely renewable, source (1) that in itself requires more coordination between fishermen and more regulation from the government. This is probably the biggest challenge that the fisheries extension agents have to meet. The agent should always be aware that changes in one situation might influence the situation of other fishermen and that changes in principle have to be in line with government policies.

Fisherfolk's situations that may require changes, and thus perhaps outside intervention, can be grouped as follows (after Van den Ban and Hawkins, 1988:10):

1. The fish resource is usually a common property resource, but in certain cases persons have obtained access to a part of the sea or lagoon for the purpose of fishing. In Sri Lanka this can concern:
   1. beach seine (madel) territorial use rights;
   2. prawn ponds in inshore waters; and
   3. customary appropriations of certain fishing spots, for example for fish traps.
1. **Fisherfolk lack adequate insight to recognize the problem or to think of a possible solution.**
   In some cases the persons might have obtained incorrect information. Here extension can assist in providing the required information or to help the persons to identify the problem and to find a possible solution. For example, a fisherwoman might not be aware why such a large part of her dried fish is wasted.

2. **Fisherfolk lack the incentive to improve the situation.**
   Often this has very clear reasons that are beyond the control of the persons concerned. For example, one may wonder why fishermen are so little concerned with spoilage of fish during onboard fish handling. Often the reason is that there is little price incentive to spend more time and money on better fish handling, because due to the high demand for fish, the fish can be sold anyway. Also better fish handling would mean higher prices for the fish, and many consumers might not be able to pay a still higher price for fish.

   Another reason might be the relation between the crew members and the boat owner, if the boat owner does not go out fishing himself or herself. If the relation is not very good, the crew members can be little concerned about the condition of the fish they bring ashore. The extension agent should be well aware of the reasons and consequences of certain behaviour and might in that context propose changes. One change might be to ask the Municipal Council to better look after the daily cleaning of the fish market, if this is indeed required. Such a change would hardly affect the price that consumers will have to pay for the fish.

3. **Fisherfolk lack resources to change the situation,** for example capital. Here extension might provide information on how the persons concerned could be able to obtain credit or the required material. But a direct involvement of the extension agent in obtaining or supervising the supply of credit or subsidies has nothing to do with extension.

4. **Fisherfolk lack the power to change the situation.** This is in general an unfeasible extension activity as it is unlikely that provision of information will change this situation. In some cases the extension agent might suggest a person or organization through which the person concerned could better channel his or her interests. Also, the agent can suggest and support the formation of certain interest groups. However, it is important that the extension agent retains as much as possible his or her neutral position, and does not become too much involved in the local-level power circles, although this might not always be easy.

   We can now see that, by its nature, fisheries extension cannot solve all social problems in the fisheries sector. On the other hand, it is impossible that a fisheries extension agent has all the technical knowledge required to address all problems relevant for fisheries extension. Therefore, it is important that the agents know how to obtain such information, either through their Ministry, the research organizations or other organizations. In that case, the extension agent acts as an intermediary between his or her clients and other sources of knowledge. Here it is equally important that the extension agent dares to admit that he or she does not have the appropriate knowledge if such an occasion occurs. How information on various technical fields of fisheries extension can be obtained is described in Chapter 7.

**Extension Addresses The Needs Of A Client Population**

A frequently heard statement among government officers is that “yes, extension is important because we have to educate the fishermen”. Ideas behind this statement are that fisherfolk does not know what is good for themselves, that they do not know the opportunities to improve their situation and they have often taken to such a bad habit (like drinking) that they are not motivated to uplift their situation. Such statement normally does not tell you in what the fisherfolk should actually be educated. And is this education part of the responsibility of the extension service?

In general, the statement often contains a number of prejudices. First, do fishermen and fisherwomen really not know what is good for themselves? How do we know that they do not know, and do we
really know how it is to be a fishermen and what hardship this occupation brings about? Are there among fisherfolk not many persons of whom we know that they know very well how to uplift their situation? Are we thus referring to all fishermen and fisherwomen or only to a certain segment of the fisheries community, namely the most deprived persons? Also, are there no influences beyond the control of the fisherfolk, that have worsened their living conditions? One might think of the influences of programmes that aim to introduce new fishing technologies, or non-fisheries influences such as the increased prices of consumer goods.

To be able to answer such questions, the fisheries extension agent needs to have a good understanding of the fisheries community he or she is working for. And in general, to analyze the best way for providing help, the extension agent should want to learn to understand a fisherman’s or fisherwoman’s situation. In extension, the assistance provided is only useful when it really addresses the needs of the client population. This is the basic tenet of extension and also determines the way communication efforts should ideally be pursued, namely in the listening mode and not in the teaching mode. This is the main difference between formal adult education or training and extension, or as stated by UNDP (undated:2) “Extension education is different from the conventional education institution; it is informal without regular classes, grades, degrees or diplomas.”

Thus while in formal education, the teacher, the school or the national education programmes decide what the students have to learn, in extension the extension message should be tailor-made for specific client groups of fisherfolk or for individuals. But for an extension programme to become tailor-made it is important that fisherfolk or specific groups of fisherfolk are able to voice their demand for a certain topic of information. This is called the demand side of extension. The way the fisheries extension service of the Ministry of Fisheries or other specialized organisations are able to meet this demand is called the supply side of extension (Jiggins and Roling: 1982). The demand side will be further discussed in Chapter 5, and the supply side in Chapter 3.

It is only since recently that fisheries extension organizations in the region, and funding agencies as well, have realized that an efficient extension service requires both the development of the supply side and the demand side, and that specific groups of fisherfolk will have different demands and thus require different support services. For example, in the case of fish processing, the management of a fish processing plant likes to obtain information on new fish products developed by the Institute of Post-harvest Technology in Mattakkuliya, whereas a fisherwoman involved in small-scale fish processing likes to know how she can construct low-cost fish-drying racks. Different extension methodologies may be required to meet the demands of these different client groups.

Extension Objectives And The Overall Development Policy

As far as the Government of Sri Lanka is concerned, the overall development policy for the fisheries sector is outlined in the National Fisheries Development Plan. This is the context in which the fisheries extension service would try to implement its programmes. Yet, each programme developed by the extension service would have its specific objectives. For example, in the context of the government policy to increase safety at sea, the fisheries extension service might develop an extension programme with the objective that at the end of the two year programme, 80% of all fishing boats in Sri Lanka that sail offshore should use a compass.

In agriculture extension programmes usually clear objectives or targets are set, for example in promoting certain crops on a regional basis. This is unfortunately not yet very usual for fisheries extension. The development policies and the objectives for extension will be further discussed in the next Chapter.
CHAPTER 3. PLANNING FISHERIES EXTENSION PROGRAMMES: THE SUPPLY SIDE

The Overall Development Policy And The Emergence Of A Fisheries Extension Service

As mentioned above, a fisheries extension service works within the context of an overall development policy. Such a policy may have objectives that are related to an increased production of fish and/or objectives that are related to increased well-being of the fishing families involved in fishing.

In order to reach these development objectives, the Ministry or any other organization designs a number of programmes. Extension support can be one of the instruments required for a successful programme, and the extension service may design subsequent (sub-) programmes.

In agriculture, extension services are often clearly defined, in the sense that there are separate extension divisions with extension staff at various levels, and the divisions have tasks clearly distinct from other divisions such as research, training, etc. As became clear from a consultation on fisheries extension held in 1990 in which countries bordering the Bay of Bengal participated (BOBP, 1990), not all countries, including Sri Lanka, have at present a separate fisheries extension service.

In Sri Lanka, government fisheries extension activities are presently taken care of by the same units, which also engage in activities such as enforcement of fisheries legislation, supervision of credit and subsidy schemes, implementation of other schemes such as the formation of cooperatives, and the collection of statistical data. Although some of these activities may have an extension component, no separate extension programmes are being developed. Nor are existing fisheries extension activities, such as the fisherfolk radio, integrated in a broader fisheries extension programme. However, in our further discussion on planning and implementation of fisheries extension we will assume that a fisheries extension service exists.

Thus based on the outlined development policy several support programmes may have been identified, including: fisheries research, fisheries legislation, extension, and community mobilization and organization. As mentioned in Chapter 1, the programme may have an emphasis on fish production and output, through management improvements and the application of appropriate technology, while other programmes may emphasize the well-being of the fisherfamilies through human resources development.

The two approaches cannot be entirely separated: emphasis on technology transfer can affect the well-being of one group of fisherfamilies positively, as their income might increase, whereas another group may be negatively affected because of increasing competition and a loss of fishing grounds. On the other hand, human resources development in the field of fisheries and fisheries related activities can very well benefit from the introduction of appropriate fisheries and fisheries related technologies. It is not so much that fisheries technology development and dissemination is a bad thing, as is nowadays believed by many people, but the bad thing is that technologies have been and are being introduced without worrying about the effects on the different groups of fisherfamilies.

Some negative effects will be unavoidable. For example, due to larger scale fish marketing operations, ‘basket women’ who market fish in the village, are being displaced by male vendors who use bicycles. Therefore, it is important that such negative effects are acknowledged and that, if possible, alternative opportunities are sought for the groups that are negatively affected. The role of the fisheries extension agent can be very crucial in identifying such effects and in finding the possible solutions to avoid such effects.
The Limitations Of Intervention And The Area Of Competence Of The Fisheries Extension Service

Policy makers should be concerned with defining the general outline of programmes, but not with deciding the actual contents of the programme. That should be left to the experts concerned, such as the extension officers for the extension programmes. As mentioned above, it is important that policy makers find an appropriate mix of production and output oriented programmes and human resources development programmes. In addition, while identifying programmes, policy makers should consider the following questions:

Will government intervention be effective to reach the objective?
It is very important to realize in how far government intervention, or intervention by the Ministry of Fisheries or any other organization, can really change an undesired situation into a desired situation. Governments usually like to believe that they can. For example, can the government really reduce the gap between producer prices of fish and consumer prices of fish through the purchase of fish by cooperatives? It is a waste of public resources to design a programme that will have limited effects.

Is the programme within the area of competence of the Ministry of Fisheries or the fisheries extension service?
Another consideration that should be taken into account by policy makers is whether a programme identified is indeed within the area of competence of the Ministry of Fisheries and in particular of the fisheries extension service. As mentioned in Chapter 1., fisheries extension services should ideally be involved in fisheries and fisheries related activities only and not in all aspects of community development. However, even the field of fisheries and fisheries related activities is vast and it is simply not possible to provide extension services in subjects that are unknown to the fisheries extension agent, or in topics that cannot be taught within the context of available time and resources, or in topics to which the agent cannot obtain information when required. Yet, the longer the fisheries extension service is functioning, the more prospects there are for building-up expertise in various fisheries and fisheries related subjects.

Which instruments are effective in the proposed intervention?
Usually an extension programme does not stand on its own, but is part of a mix of intervention instruments that make-up a certain programme. Therefore, extension will only be effective in such a programme if the other required instruments (such as research, legislation, savings and credit schemes, etc.) are available as well. Furthermore, it should be clear what function extension has in the mix of extension instruments.

Can another organization implement the programme more effectively or with less costs involved?
Some programmes identified may indeed be in the area of competence of the Ministry, but still then it should be considered whether such a programme can be implemented more effectively by another organization, like a private or a non-government organization. In such a case the Ministry may try to arouse the interest of the appropriate organization in implementing the programme, and in some cases the Ministry might even consider to contract the organization involved to implement the programme. For example, the extension service can obtain the services of an organization specialized in small-scale fish processing, to conduct field workshops or to develop pamphlets.

However, the interests of the extension service and private companies can sometimes contradict. Still, in certain cases it might be possible to match these interests. For example, the main interest of an engine company is to sell as many engines as possible. In principle, if fishermen maintain their engines badly, there will be a higher turnover of engines and the companies sell more. But there are different companies that sell engines and the fishermen will in due time prefer those companies that provide services in maintenance and repair of their engines. Therefore, the companies will have to provide those services at least to some extent. The extension service can assist or support the engine companies to develop and make available manuals on the operation and maintenance of the different types of engines in the appropriate languages.
Are resources available to implement a programme?

It is impossible to implement a programme when the required resources are not available. Although policy makers should not be concerned with details such as the exact resources required to implement an extension programme, the programme should broadly fit within the resources that would be available to implement the programme. Alternatively, resources should be allocated that are necessary to generate the required resources, such as for example in-service training to develop certain skills among the fisheries extension agents. It is impossible that the extension agents conduct field training in navigation when they are not trained in this subject. It could be decided in such case, that other experts are contracted to conduct field training in navigation, for example experts from the navy.

In general, resources required for fisheries extension can comprise of:

1. the required cadre of extension staff: extension agents (2), subject matter specialists, district officers, extension specialists at head quarters;
2. the facilities available to that cadre;
3. required budgetary arrangements;
4. sufficient skills and knowledge levels of staff and/or appropriate in-service training programmes; and
5. appropriate management of the extension activities (including management of the staff).

Compared to other (sub-) programmes such as research, savings and credit and subsidies, the cost of extension (sub-) programmes is relatively low.

The Client Orientation Of Fisheries Extension: WHO

When the policy makers have broadly specified the programmes and the programme objectives that should be developed to achieve the national fisheries objectives and have also specified the budget allocations available for the purpose of fisheries extension, the fisheries extension experts can go ahead planning and implementing the fisheries extension programmes.

Here again we assume that the Ministry of Fisheries indeed has a fisheries extension service with extension experts who have the responsibility to plan and implement the fisheries extension programmes.

In planning the extension programme, the first question of concern should be who could we best reach to improve the situation, or WHO should be the target group. For example, in promoting methods for demersal fishing in the coastal waters, the target group could be all fishermen who are presently involved in pelagic fishing in the coastal waters.

The identification of the target group should be done very carefully, because extension programmes can be much more effective when it is very clear for whom the programme is designed. We should realize that there are many “different” fishermen and fisherwomen and that extension programmes can be suitable for one “type” of fisherman or fisherwoman and not for the other.

(2) Here again we should realize that in principle an extension service can also function without field level extension agents. An extension service can fully rely on mass media programmes and on a single head office. This is common for extension in legal matters and to a certain extent in health.
The programmes should generally focus on those persons who are responsible for decision making regarding the topics relevant in the extension programme. Whereas fishermen are often involved in the actual fishing operations, it is not always these fishermen who take important decisions. Instead, important decisions can be made by boat and net owners who are not going out fishing, or decisions can be made by the family as a whole rather than by the fishermen alone.

Also, in fisheries extension programmes, other target groups than fisherfolk can be involved. Examples are:

1. consumers of fish, if a programme aims to change the demand of a certain type of fish;
2. fish traders, if improvements in the marketing system are envisaged; and
3. engine mechanics, if the objective of a programme is to support maintenance and repairs of engines.

The Problem Analysis: WHY

If the target group is defined for a certain programme, the next concern is to define the exact aims of the programme. Here comes the question WHY fisherfolk is presently not acting the way that is desired. This question is called the problem analysis of the extension programme.

Changing An Undesired Situation

For example, why do fishermen prefer to practice pelagic fishing in the coastal waters instead of demersal fishing? The answer that fishermen do not know about the techniques of demersal fishing is not sufficient, there must be more reasons. May be demersal fishing is less rewarding than drift-gill netting, or maybe it is less convenient during the rough season, or maybe it is difficult to obtain the required equipment, or maybe the consumer does not favour rock fish or other demersal fish. Only when there is a rather clear picture on why a desired situation is not reached, it is possible to define what an extension programme can do to change this situation.
In Table 2, a layout and an example for a problem analysis is given. The example concerns an extension programme with the objective to reduce post-harvest losses in fish production. Such a layout is not only useful for extension specialists in the Ministry, but also for fisheries extension agents who have identified a certain problem in their area and like to analyze what could be done to solve the problem. This will be further discussed in chapter 5. Annex 1 gives an ‘empty’ layout for a problem analysis, this can be used in the office or in the field.

As mentioned in the previous chapter, extension can assist in changing the knowledge, attitudes, skills and/or behaviour of their clients, but not if the problems are related to lack of resources, lack of power or sometimes lack of incentives. If there are reasons behind an undesired situation that are beyond the knowledge, attitudes, skills and/or behaviour of the selected target group, another programme could be planned that focuses on a target group that is in the position to change the specific circumstances. For example, if it is clear that demersal fishing is hampered by a lack of consumer demand for demersal fish, the extension service can consider to start a programme to promote the consumption of demersal fish, such as squid. In that case the target group of the programme becomes the consumers of fish rather than the fishermen. Thus, the question of WHO should be the target group also becomes relevant during the problem analysis.

The extension experts in the Ministry will often have insufficient practical knowledge in identifying the reasons why an undesired situation exists. Therefore it is very important at this stage that the extension experts consult the fisheries extension agents, who know the field situation, and if possible, fisheries research agencies, if research is done in the relevant topic. But it is also very important that the extension experts get a picture of the real situation, and talk with potential clients and have a look into their working and living conditions.

To that end the extension experts can make field trips to certain locations to conduct a short appraisal study for example, half a days duration per study. Visits to the district fisheries office on office days for the fisheries extension agents can be made to discuss the situation in the field. As much as possible such field trips should be made.

Setting The Extension Aims Of A Programme

When the reasons for an undesired situation are clear and the target group is redefined (if necessary), the exact aims of the programme can be set. Such aims should not be vague, but very specific, including the timespan and outcome of the programme. For example, the aim of the programme to promote demersal fishing is that in 1993, 50% of all fishermen who are presently using drift-gill nets in coastal waters should have changed to the use of either bottom set nets or bottom long lining. Note that this is just an example.

A major advantage of making the aim of a programme very specific is that you can measure its effectiveness after the programme has ended. By the end of 1993, one can evaluate if indeed 50% of all fishermen who are presently using drift-gill nets in coastal waters have changed to bottom set nets or bottom long lining. Such information is very important for the Ministry’s fisheries policies and for the fisheries extension service in particular.
### EXTENSION PROGRAMME OBJECTIVE:

**To reduce post-harvest losses in fish production**

<table>
<thead>
<tr>
<th>(a) Key Problems</th>
<th>(b) Technical Causes of 'a'</th>
<th>(c) Groups Responsible for 'b'</th>
<th>(d) Current Behaviour of 'c' Which Results in 'b'</th>
<th>(e) Knowledge, Attitudes and Skills Required to Correct 'd'</th>
<th>(f) Other Factors to Correct 'd'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish spoilage</td>
<td>temperature</td>
<td>fishermen dealing in short periods (ie. fishing between 4-10 hours)</td>
<td>poor handling and preservation methods</td>
<td>FOR FISHERMEN</td>
<td>- availability of clean water at landing sites and markets</td>
</tr>
<tr>
<td></td>
<td>bacteria</td>
<td>fishermen dealing in long periods (ie. fishing up to 6-7 days)</td>
<td>poor design of fishing vessels</td>
<td>1. proper chilling and storage conditions on board</td>
<td>- proper drainage at both sites</td>
</tr>
<tr>
<td></td>
<td>enzymic action</td>
<td>wholesale traders</td>
<td>unhygienic condition of...</td>
<td>2. de-gutting and cleaning of fish at sea and on land before stowage</td>
<td>- facilities for disposal of spoilt fish and gardage</td>
</tr>
<tr>
<td></td>
<td>physical damage</td>
<td>retail market traders</td>
<td>... fishermen</td>
<td>3. correct handling and preservation...</td>
<td>- suitable materials for transportation and packaging (eg fish boxes and ice)</td>
</tr>
<tr>
<td></td>
<td>rancidity (in fatty fish)</td>
<td></td>
<td>... boats</td>
<td>... at sea</td>
<td></td>
</tr>
</tbody>
</table>

#### FOR FISHERMEN

4. correct methods for...

... transportation

... freezing

... storage

#### FOR TRADERS

5. environmental conditions at

... landing sites

... market places

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Table 2. Problem analysis of an extension programme that aims to reduce post-harvest losses in fish production.

(Source: DTCP/UNDP Course in production of publications, 1990.)
As mentioned previously, national fisheries objectives can emphasize fish production and output as well as the well-being of the fisherfamilies. Programmes resulting from production and output type of objectives are often easier defined and have often a clearer government interest than objectives related to the general well-being of fisherfamilies. Our example of the demersal fishing in the coastal waters comes under the production and output type of objectives, and here the interest of the government (to promote a sustainable use of fish resources) is even more clear than the interest fishermen might have in conducting this programme. The short-term interest might not be clear to all fishermen, for example for those who use prohibited fishing gear, but a better conservation of the fish resources will, in the long-term, benefit all fishermen.

Hence, with regard to programmes with the objective to improve the well-being of fisherfamilies, a more elaborate assessment of the target group and the programme aims are required, with more involvement of the target group in planning and implementation of the programme. Here especially the needs of the target group should be the basis for planning the programme. For example, to improve the living conditions of fisherwomen it can be suggested to assist fisherwomen in their income generating activities. The Ministry of fisheries can assist as far as those activities relate to the fishing industry, such as fish processing and net mending and repair. However, before any programme in a certain area can be designed, it should be clear whether or not fisherwomen in that area are interested to start or to improve their fish processing or net mending activities. This can be done by means of a needs assessment. If the women are not interested, there is no use in starting such programme. Here the interests of the government are not the starting point, but the interests of the target group only.

Choosing The Right Extension Method(s): HOW

When decisions are made about the target group and the extension programme aims, the question comes HOW we can best reach the target group and the extension programme aims. This is a matter of planning the communication efforts or to find the most suitable extension methods. There are several extension methods, such as mass media, group methods and individual methods. The extension methods will be further discussed in the next chapter. However, in planning for extension methods it is important to identify which methods can be applied and to compare the different possibilities with respect to their effectiveness and efficiency. For that purpose, a number of questions can be asked:

1. **In which aspect(s) of learning does the programme try to contribute (knowledge, skills, attitudes and/or behaviour)?**

Not all extension methods are equally suited to change these different aspects of learning. Radio, for example, can hardly be used to teach people a skill, such as how to repair a net for example. Group methods are probably most effective for that.

2. **For which extension methods are the resources already available or is it within the possibilities to generate the resources within the required timespan?**

For example, it is impossible to conduct individual extension on a national scale if there is no cadre of fisheries extension agents. One extension method that is at present available in Sri Lanka is the fisherfolk radio service. This could be used for various extension programmes. In some cases it might be within the possibilities to generate the resources so that a certain extension method can be applied. For example, to use the group extension method in a programme to improve onboard fish handling it is important that the fisheries extension agents have the technical knowledge to guide the group sessions. Such technical knowledge can be provided through in-service training. Hence it would be required that the Ministry has an in-service training programme for fisheries extension agents.

3. **Which of the possible methods has the most comparative advantage from quality control and cost control points of view?**

Although one method might be highly effective, this might be unrealistic in view of the often very restricted government budget. Also one has to make a choice between implementing more
programmes less effectively or less programmes more effectively. An optimum balance of quantity and quality will have to be sought.

4. **Is the most suitable extension method of any use for the target group?**

Some target groups cannot be reached by a certain extension method. For example, it will be difficult to organize a one-week workshop for fishermen during the fishing season. Or it will be difficult to reach fisherwomen by radio if they seldom listen to the radio. However, Sri Lanka has in this respect one comparative advantage, which is the high literacy rate. This makes it easier to use written extension material, such as pamphlets and mass media methods such as newspaper articles.

5. **Which combination of extension methods is most effective to implement the programme?**

A choice for one extension method does not exclude the other method. On the contrary, mass media methods can be very well supported by group and individual methods. It is rather strange if an extension programme is launched through the radio and the fisheries extension agents are not able to further explain the extension message when questions in the field arise.

Often, in books and articles about extension, much emphasis is put on the extension methods and on the advantages of one method over the other. This sometimes gives a static picture about when to use which methods for which purposes. Rather, more important is the dynamic between development objectives, extension aims and extension methods. Conditions in countries change rapidly, as well as the conditions in the fishing industry. This requires continuous adaptation of the development objectives and the resulting extension aims. With adapted extension aims and with changes in the package of extension methods available (such as for example that people have more access to mass media), the strength of the extension service is to be able to successfully adapt the extension methods used to reach the envisaged extension aims.

**Timing The Extension Programme: WHEN**

If a deliberate choice about the extension methods is made, the question comes **WHEN** the programme should be implemented. As mentioned earlier, the programmes are tailor-made to the needs of the government and/or the specified target group. It is not effective to start a programme when the target group has no time to participate in the extension activities. For example, it is of little use to start a one-week workshop on the operation of outboard engines for fishermen during office hours in the fishing season. You will be sure that the participants will not be fishermen, since hardly any fishermen can afford to forgo a one-week income.

Rather the workshop could be held at a timing that is convenient for the fishermen, which might however be less convenient for the extension agent (for example during the evenings). However, one person, in this case the extension agent, can impossibly impose his or her time preferences to the client group for whom the programme is designed.

**Extension Requires Resources And Has A Cost**

As mentioned above, it is impossible to implement a certain extension programme when the resources to do so are not available. Or in some cases the resources might be available, but are not allocated to the fisheries extension service. The extension service should be well aware of this and should plan their programmes according to what they are able to do. A frequently heard statement is that it is not possible to implement a certain programme because the resources are not available. This is also a matter of planning. It is impossible to expect that an extension agent visits fisherfolk in a large area regularly when proper transport facilities are not made available. The activities of the extension agent should be planned according to the resources available.

On the other hand, many people think that once the resources are available, any programme will be successful. This is often not true. If extension agents have obtained transport facilities, this does not
mean that they will suddenly start visiting many fishermen or fisherwomen in their areas regularly. This requires careful planning, implementation and management of the extension programme.

It is important that there is a line of authority between the fisheries extension service and the fisheries extension agents. Otherwise, it is impossible to implement and guide extension programmes. Therefore, ideally the extension service should come under the same directorate as the division that manages the fisheries extension agent.

In-service training can be an important service required for the operation of an extension service, especially when the extension programmes rely heavily on the activities of fisheries extension agents. Through regular in-service training the fisheries extension agents and their superiors can update their technical knowledge and communication skills and such training often provides a chance for exchange of views. This requires that the Ministry has indeed an in-service training programme. It is preferable that training and extension come under different authorities, because the training service will provide services for extension as well as for other divisions, such as for example for enforcement of legislation and coast conservation.

Each extension programme will have a cost. The costs are covered by the government budget that is generated by the Sri Lankan tax payer. In Sri Lanka it has not been a practice that fisherfolk pay for the extension services provided. Instead, for some field extension workshops (or field training courses) it has even occurred that the participants were paid a small allowance. The argument was that otherwise the participant would not come, partly because the participant would be too poor to do so. If all the participants are really very poor, this may be a valid argument.

But often there are other reasons why people would not come to the workshop without receiving a daily allowance. The most important reason is that the participants who attend the workshop are often not involved in the planning of the workshop, so that the organizers do not consider the wishes, needs and experiences of their clients. As a result, the workshop is not well planned.

Often workshops are scheduled at times that are convenient for the officers, namely from 9.00 a.m. to 4.00 p.m. Yet, these times are usually not suitable for people who earn their income and/or have to attend to household duties.

Sometimes the topic of the workshop is not exactly in the interest of the participants, only of some interest and that is compensated by the allowance received. Or the topic might be of interest, but the issues discussed are already known to the participants.

The officers on the other hand might not be overly motivated to do a thorough job, with the assurance that the participants will receive some allowance anyway. In principle, extension is more likely to address the real needs of a client group if the clients shoulder some of the costs involved (Antholt, 1990: 12). This might not be preferable if the target group constitutes the real poor, but if this is not the case, at least a contribution in time can be expected from participants who are really interested to obtain extension in a certain topic.

### Monitoring and Evaluation of Extension Programmes

Monitoring of an extension programme means assessing during the implementation of the programme whether the programme is effective and efficient in reaching the extension aims. Monitoring is part of the overall management of the extension programme. Effective monitoring can result in making adaptations to the aims and the extension methods, if this is within the scope of the programme.

Monitoring of the programme is very important for assisting the extension agent in conducting his or her duties, and to find out whether the needs of the client population and/or the government are really adequately addressed.
Monitoring should be conducted regularly and should therefore be as simple as possible. Monitoring methods are: regular (for example monthly) discussions with extension agents and their supervisors at the district offices about the progress of the programme and the problems encountered; reviewing the reports of the extension agents, informal discussions with the client groups, and frequent field visits by supervisors in general.

While monitoring is a continuous exercise, evaluation of a programme is normally only done once, at the end of the programme. A programme evaluation aims to assess whether the extension aims have been met. Evaluation of extension programmes appears to be an activity that is not often done. Extension services are usually more valued for the number of programmes implemented and the number of clients reached, than for the real effectiveness of the programmes. As a result, it is often not even in the interest of the extension service to evaluate their own effectiveness.

Furthermore, often extension programmes are implemented without a clear analysis of the problems that are supposed to be addressed and without clearly stated extension objectives. This makes it difficult to evaluate an extension programme. For example, if a programme is launched to promote safety at sea without specifying what type of safety is to be improved and how many fishermen should have adopted safety measures within what period of time, there will be no measures to find out whether the programme was effective or not.

Yet, for an extension service to become more effective and more efficient, it is very important that the service comes to know which extension methods have been successful and for which reasons and which extension methods were not effective and for which reasons. This requires that the extension service is allowed to admit that certain programmes were not very successful.

It is very important that evaluation is planned for, even before a programme is launched, because evaluation will involve a cost that should be incorporated in the programme budget and also, after a programme is implemented there is often little initiative to plan for an evaluation exercise.

The evaluation should be as cost effective as possible. Often evaluations comprise of large surveys, which involve more costs and time than expected and the end result, a thick report, might be too comprehensive even to be read by the people involved. In some cases it might be sufficient to have group discussions with the clients, or small surveys in selected areas. Usually an evaluation is conducted by an outsider or outside organization to the extension service. This is to guarantee a certain degree of objectiveness. The choice for an evaluation method should be carefully made, depending on the scope of the programme, the extension objectives and the extension methods used.

**Extension and Research**

In agricultural extension there is often a clear linkage between agricultural research and extension. Agricultural production has greatly benefited from the results of research. Extension has played a role in disseminating the research results, although many research results appeared to have reached the farmers without the intermediate of an extension agent (Antholt, 1990).

In fisheries the linkage between research and extension is less clear and probably therefore less well established. The fisheries population is often even more heterogenous than the farming population, which makes it difficult to adapt research to a specific target group. Furthermore, as mentioned earlier fishermen and fisherwomen are pooling from a common resource and national fisheries research institutes are often mainly concerned with fundamental research on that resource, such as the availability of certain fish species or the effects of pollution on the fish resources. National fisheries research institutes on the other hand, often do not obtain demands from the field for certain practical research topics, because of the non-existing or poorly functioning fisheries extension service.

As a result of the adaptive on-farm research in agriculture and the linkage with extension, the concept of **farming systems research** has evolved. Farming systems research tries to understand the different integrated aspects of farming in different types of farms. In fisheries, no synonymous concept such as
fishing systems research has been developed. The linkages between extension, research and fisherfolk for an ideal situation are visualized in Figure 1.

Figure 1 Conducting fisheries extension: linkages between extension, research and the client groups
(Source: Swanson, Roling and Jiggins, 1984)

The bridge between research and extension can be provided through the services of so-called Subject Matter Specialists. This post is common in agricultural extension organizations where Subject Matter Specialists operate from divisional, district and headquarters levels. These officers are experts in certain, often technical fields, and at the divisional levels they give support to the field extension agent. In the ideal situation, they receive regular training to upkeep their knowledge and skills and they maintain contacts with the relevant research institutions. In fisheries such fields could be for example, inboard and outboard engines, seamanship, and fish processing.

Institutionally, the linkage of research, extension and the client groups can be made through a fisheries extension working committee. This committee would represent the three components and usually operates from the national and perhaps also from the district or provincial levels, depending on the plan and implementation structure within the government set-up. In Indonesia such decision making formally takes place at the national as well as at the district levels.

Despite the constrained linkages between fisheries research and fisheries extension, there is a wealth of information on the fisheries sector generated by numerous institutes all over the world. Such information can be very applicable to various countries because the conditions of fishing and other fisheries related activities are not as area-specific as the conditions for farming. This does not mean that the linkage between national fisheries research and fisheries extension is not essential. On the contrary, the fisheries extension service should do all to promote lines of communication and exchange of information and should try to get the extension agents involved in relevant research activities such as “on-boat” field trials.

Fisheries extension agents are often involved in the collection of statistical data for the Ministry. Such statistical data can be relevant for the policy makers to set the national fisheries objectives and for extension experts to plan extension programmes. However, this research has no practical value for extension because it does not involve clients nor the extension agent in analyzing the problems and prospects that occur in the field.
CHAPTER 4. THE EXTENSION METHODS

MASS MEDIA

Mass media methods, or mass communication techniques, such as newspapers, magazines, radio, television, and printed material, are used to reach large numbers of people quickly. Newspapers, radio and television can be the least expensive media to reach many people (Van den Ban and Hawkins, 1988). Also mass media can alert a large number of people to a sudden emergency, such as for example, a radio that broadcasts an expected storm at sea.

Media are important for making people aware of innovations and for stimulating their interest. But media have little influence when it actually comes to a change in the behaviour. At that stage, the judgement of known or trusted people is of more value. Therefore, it is very important that the fisheries extension agent understands the details of the extension messages that are propagated in the mass media, so that he or she can further explain the message to the client groups.

To meet the set extension aims, mass communication techniques can be used in combination with group or individual extension methods or with other mass communication techniques, or they can be used singly. The most common mass communication techniques, grouped into printed media or audio-visual media, are discussed below.

PRINTED MEDIA

Newspapers

Newspapers vary in the type of people that read the paper and in the type of news that is printed. It is thus very important to find out whether the client groups in a certain area do read a paper and if so which papers are read. Within a single community various papers may be read and even within the household, fisherwomen may prefer to read other papers than men do. However, it is very important that the language and the style used in the newspaper article is understandable to the client group, since the news is written for them.

A main feature of the newspaper is that the article has to carry news. Although various newspapers have a different taste for news and a different style of presenting news, newspapers are generally not interested to include articles on common day to day issues. Often, the more sensational the news the better, and negative issues often appear to have more news value than positive messages.

However, there are still many possibilities for the national extension experts or the extension agent individually to use newspapers as extension methods (Behrens and Evans, 1984), namely:

1. Announcements of events such as a fisheries credit programme, an extension meeting, a fisheries survey, or a field extension workshop. The articles can be brief, but should include the person or organization to be contacted for further information or for subscription, the starting date and time, the location, and an explanation of the event.

2. Follow-up of events to report the readers about the results of programmes, meetings or study-tours. These articles should give general information on the event (date, purpose, location, etc.) and should detail the outcomes of the event. The outcomes can be reported in various ways: excerpts of speeches made, listing of the decisions made and comparing the different views of the participants on the event.

3. Information articles can be written on any topic or message that is part of the extension programme, including statistics on fish prices, research findings, experiences of innovative fisherfolk. For example, the article can elaborate on the advantages and disadvantages of a new type of outboard engine. Information articles do not have to be written in a scientific style only, it can incorporate human as well as entertaining aspects and styles.
Posters Or Wall Newspapers
Posters or wall newspapers can be used for the same purposes as newspapers: to provide information on events or other topics. However, posters or wall papers can leave more room for drawings, pictures or more text. Posters are often used in Sri Lanka by various organizations to make announcements or to express views.

Most often posters or wall newspapers are printed by a central office and distributed through mail or hand delivered through the people attached to the organization. Depending on the purpose of the paper, mailings can be made, for example to village leaders, school teachers, religious leaders etc.

Notice Board Or Chalk Board News
Notice board or chalk board news can be used in the absence of wall newspapers or when the information is for the local audience only. The extension agent can design a written message for a centrally located (public) notice board or chalk board.

Books
Many books have been written on fisheries and fisheries related topics. However, few of these books are of relevance for fisherfolk and if so, hardly any of these books is written or translated into Sinhala or Tamil.

For extension purposes, it is important to acknowledge that books are expensive, and that the clients have to be able to read in general and the language used in the book specifically. A careful client and problem analysis is required to decide on the most important contents of the book.

If the fisheries extension service is engaged in the production of books on fisheries and fisheries related topics for client fisherfolk, it should be decided what price has to be paid for the book. However, relevant the book is, many people might not be able to afford to buy it. The extension service, on the other hand, will not have the financial resources to distribute books to all or part of the 96,000 persons employed in the fisheries sector (National Fisheries Development Plan 1990-1994).

Therefore, the fisheries extension service should thoroughly consider for what price a book should be sold and whether a subsidized rate is necessary, and how the book should be distributed. In any case, it is worth considering whether an information pamphlet or folder would not be more effective when comparing cost and quality.

Although many people are literate in Sri Lanka, this does not mean that they actually like to read books. Also writing and reading capabilities can diminish when people do not use them often. Perhaps a specific client group prefers to read short information stories with many illustrations, such as cartoons for example. In such case the production of information pamphlets or folders should be considered as well.

Magazines And Newsletters
In a number of countries magazines play an important role as an agricultural extension method. Here farmers and farmwomen are genuinely interested in the information published in the magazine and pay for a large part or all the costs involved to produce the magazine. The quality of the information offered in these magazines is high, and results from an effective linkage between farmers, extension service and research organizations. Even agricultural extension agents often obtain a large part of their information from these magazines.

In fisheries, such magazines are hardly available. Fisheries extension services are often yet unable to generate regularly high quality information of interest to their client groups. And if so, the diverse interests that exist among fisherfolk, will make it difficult to sell a magazine to a large enough client group.

While magazines are usually sold to anybody interested, newsletters often contains information for certain organized groups of people. For example, local or national level farmer's clubs may issue newsletters.
Newsletters are often more low-cost than magazines and can therefore reach more people. As a national extension method, the newsletter is not often used, since it would require too many copies to reach all or part of the persons employed in the fisheries sector and it is thus too costly. Therefore, government departments prefer to produce folders or pamphlets on specific topics that can be mailed to persons who have informed the government department that they would like to receive such a folder.

**Folders And Pamphlets**

Folders and pamphlets can be used in many ways in extension programmes. They have the advantages of being low cost, need a short preparation time and take limited time to get the message across. However, especially because it only gives a brief explanation on a certain topic, the topic should be very relevant and clear.

It is of little use to produce pamphlets on topics that are well known by fisherfolk or to produce pamphlets in such a way that it gives too little information on how to do the activity propagated. Perhaps, the assessment of the needs on information on a certain topic among certain client groups will be the most time consuming part of the production of a sound pamphlet. This should be conducted before the pamphlet is produced. Also, the pamphlet should be written in a language that is understandable to the client group. Therefore, it is very much recommended to conduct an extensive field testing of the draft pamphlet among the various client groups.

Folders and pamphlets are often more effective when appropriate illustrations are included. For some purposes it can even be decided that the illustrations dominate the pamphlet, such is the case with **cartoons**.

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**A Cartoon Used As A Fisheries Extension Method In India**

(Source: BOBP 1991 reduced size)

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**AUDIO-VISUAL MEDIA**

**Radio**

The Radio can be a very important extension method, especially when used in combination with other, individual or group, extension methods. In Sri Lanka a large number of fisherfamilies have a radio or listen to the radio. The following usages of the radio in fisheries can be very valuable:
1. Messages that have a value on the day of the broadcast, such as weather forecasts, fish prices, and emergencies;

2. Messages that try to arouse the clients' interests in certain new topics, such as the use of improved fishing gear or improved methods of fish processing;

3. Events, such as the implementation of a credit programme or field extension workshops;

4. Further information available and the ways to obtain that information. For example, the radio can announce that the fisheries extension service has produced folders on efficient use of gill nets or on the operation and maintenance of outboard engines, and that the way to obtain the folders is to write to a certain person in the service; and

5. “question and answer” programmes on various fisheries and fisheries related topics, as a forum to communicate local problems and solutions.

While radio can arouse the interest in a certain topic, the radio can often not actually change the behaviour of a person. At that stage, the opinion or advice of a trusted person is necessary. Furthermore, the radio has limited capacity to give detailed and complex information, because people will easily forget what is said shortly before and cannot see what has been described. As a method for propagating improved technologies, radio is only effective when used with other appropriate extension methods.

Radio broadcasts for its client groups, and to legitimize the costs involved for broadcasting a fisheries radio programme, the programme should be made as interesting to fisherfamilies as possible. In the first place this involves that the programme should be broadcasted at times that fishermen or fisherwomen listen to the radio. Furthermore, broadcasters have to win their listeners' confidence by basing their programmes on local experiences and problems and by using the language the fisherfamilies can understand (Van den Ban and Hawkins, 1988:142). Therefore, it is very important that the radio team spends adequate time in the fishing villages.
The fisheries extension agent can also play a very important role in voicing the problems faced by fisherfolk or interesting experiences in the area to the radio broadcasters. The radio broadcasters can, based upon the information received by an extension agent, decide to visit a fisheries extension agent's area and make a programme on the interesting experiences found. Through the fisheries extension agents, the radio team can also obtain information on how interesting the programmes are to the listeners.

On the other hand, it is very important that the fisheries extension agents are informed about the extension messages that are discussed in the radio programmes. As mentioned above, a good extension message will especially become effective when the extension agent can further explain the details to the clients when such questions arise. It is the duty of the fisheries extension service to ensure that communication between the fisheries radio team and the fisheries extension agents is optimal.

Since 1989, the Ministry of Fisheries is operating a daily short fisheries radio programme in Sinhala medium.

Recording For The Sri Lanka Fisherfolk Radio

(Picture by P. G. Perera)

Television

Broadcast television can offer very interesting possibilities for extension programmes. (Broadcast television does not include video, which is an audio-visual extension aid and not a mass media extension method). However, unlike the radio, in Sri Lanka, a limited number of fisherfamilies can afford a television at present. Also, to produce a television programme is very costly, for example when compared to a radio programme of the same duration. As such, it is not a very suitable method for regular fisheries extension in Sri Lanka.

However, a very short programme, for example of about five minutes, broadcasted regularly over a certain period of time, can have great impact. Especially when the programme is well designed and has an educational as well as an entertaining component.
In general, in a television programme extension messages can be demonstrated. The fish processing expert can demonstrate how to make maldive fish and the fishing gear expert can demonstrate how to rig a gill net. All types of visual aids, such as chalkboards, maps, graphs and charts can be used to increase the learning effectiveness.

Another very interesting opportunity for fisheries extension that can be provided through broadcast television is to make people more aware about the necessity to protect the marine flora and fauna as well as the coast of Sri Lanka. To that end, interesting documentaries on the marine environment can be broadcasted.

**Theatre**

Another mass media method that is not often used in fisheries extension is theatre. Many people like the entertainment of theatre and plays, and this can very well be combined with an extension message. In fact, many plays in general have, whether explicitly or not, an educational message.

**Village Theatre As An Extension Method**

Theatre can especially be valuable in arousing people’s interest and awareness in improving their own situation and their immediate environment. Theatre can be an extension method for a programme that aims to create awareness about depletion of fish resources and the common efforts required to solve that problem. It is not a very appropriate method for demonstrating technical innovations.

Theatre can either be developed on the initiative of the fisheries extension service or the fisheries extension agent can take or support the initiative to produce a village theatre performance made up about local experiences and problems.

Theatre can take any form, with more or less people and with more or less material involved. In some African countries, national extension services have solved the problem of manpower, by designing puppet plays as a method in extension and community development programmes. Only one person was needed to operate the puppets (Bradfield, 1966:94). An example of a set-up of a puppet play is that: “Some puppets take the part of the family which listens to advice and is successful while others take the part of those who do not take advice and who voice typical local criticisms.” (ibid).

**INDIVIDUAL EXTENSION METHODS**

Individual extension is practised when the fisheries extension agent conducts extension on a one-to-one basis with client fisherfolk (Kang and Song, 1984). We have included the following categories of
individual methods in fisheries extension: formal clients visits, informal contacts, office calls and monitoring and evaluation of other extension methods. However, we have to bear in mind that these methods can only be called extension if it is part of an organised effort and if it has objectives that are established within the framework of an overall development policy, such as outlined in the National Fisheries Development Plan. Therefore, not all informal exchange of information between the extension agent and his or her clients can be called extension.

**Formal Client Visits**

Formal individual extension, when the extension agent has to visit a certain number of clients during a certain period of time to meet the extension aims of a certain extension programme, is not common for the fisheries sector. This has a number of reasons.

Firstly, fishermen often operate in groups; only certain fishing methods like hand lining, cast netting, squid jigging and set bag fishing can be practised by one person. If the fisheries extension agents interact with more than one client at a time, the extension method is a group method. Group extension methods are discussed in the next section.

Secondly, individual extension ideally happens at the client’s place of work. In fisheries this would mean the sea. For some types of fishing units this can be a rather unpractical meeting place, for example when the fishermen use the kattumaram (theppam or vallam) or the outrigger canoe (oru). The fisheries extension agent often does not have the skills (or courage) to join a fishing trip on a theppam or oru and these boats are often too small to accommodate an extra person on board. Still, because more than half of the fishermen in Sri Lanka use these types of craft (see Table 1 on page 3), the fisheries extension agent should try to know as much as possible about the operation of these crafts in his or her area. Otherwise it is impossible to understand the opportunities and problems experienced by these fishermen.

As far as the larger boats are concerned, it is more easy for the fisheries extension agent to join on one or more day trips. Especially because the agent would on such trips interact with a group of people, this can be a very efficient extension method. However, this would mean that the extension agent has indeed useful advice to offer to the fishermen. Otherwise, such a fishing trip becomes more of a learning experience for the fisheries extension agent than for his or her clients, which in itself serves a very useful purpose.

**“On-boat” Fisheries Extension**

To some extent, the constrained possibilities of conducting extension at sea can be compensated by extension programmes that use video to show fishing operations at sea.
Individual clients who are engaged in onshore fisheries related activities might be more easy to reach. Although some may live dispersed, such as prawn cultivators, or others are very mobile, such as traders.

The third reason why individual extension methods are not (yet) very common in fisheries extension is that there is often not a practical fisheries extension programme to promote recommended fishing practices. Such programmes are more common for aquaculture than for sea fisheries, because it is easier to control the fish resources in aquaculture environments such as ponds and reservoirs.

However, in view of the growing need to manage the common fisheries resources, it is likely that practical programmes will be developed. For example, with regard to the use of a minimum mesh size and to the principle of fishing seasons. Such programmes call for a strong linkage between fisheries research, fisheries legislation, and fisheries extension. And, equally important, it calls for a sound in-service training and information programme for the fisheries extension agents, if they are going to be involved in fisheries management programmes.

Thus related to this lack of recommended fishing practices is that the fisheries extension agent has a limited technical knowledge about fishing practices and also has little professional motivation to understand more about the practical experiences and problems of fishermen in his or her area. Consequently, the extension agent has little extension advice to offer to individual fishermen or groups of fishermen about fishing practices. This often also applies to fisheries related activities, such as fish handling and fish processing.

Although there may not be a concrete extension programme to promote recommended fishing practices or fisheries related activities among certain specific client groups, there are still may areas in which the fisheries extension agent could conduct individual extension. Above all, the extension agents do have knowledge and skills at least about certain aspects of the fishing industry.

Informal Contacts
At any time, fisherfolk may like to benefit from the knowledge and skills of the extension agent, and this can happen in an informal way. This means that during an informal discussion or observation at the beach, in the market or any other place, the agent is asked or notices about certain problems. He or she can make a suggestion for improvement or shows how the aspects could be improved. This could relate to many fisheries related aspects, such as a better maintenance of the outboard engine, or a better handling of fish. In fact, there are so many fisheries related aspects that the extension agent can hardly know enough about all. During these informal contacts the extension agent can learn a lot about the experiences and problems of his or her clients.

Office Calls
Individual extension is also conducted when a fisherman or a fisherwoman comes to meet the fisheries extension agent in his or her office or at home for advice. The more confidence fisherfolk has in the extension agent the more likely they are to visit him or her. The extension agent should encourage his or her clients to come for visits, if that is required, and can inform them where the office is located and what are the most convenient visiting hours. The extension agent should make this visit purposeful by trying to understand the reasons for the advice as much as possible and by exchanging the adequate information.
Informal Fisheries Extension

The fisheries extension agent can make arrangements to the office (however small the office might be) to make the visitors at ease and to make them understand the activities of the office (Oakley and Garforth, 1985:73). The following arrangements are suggested:

1. make access to the office adequate with a small signboard;
2. display a notice-board with useful and up-to-date information or any other extension literature such as pamphlets and circulars; and
3. have chairs or benches available for the visitors when they have to wait.

Monitoring And Evaluation Of Other Extension Methods

Furthermore, individual extension can be conducted to monitor or evaluate the effectiveness of other extension methods, such as mass media or group methods. For example, if an information meeting is conducted about safety measures at sea, the extension agent could visit individual fishermen to find out whether safety measures are indeed applied or whether the information meeting was effective in reaching the set extension aims. Another example, is to evaluate the effectiveness of an extension workshop on the maintenance of outboard engines. The agent could visit former participants to see whether their engine is better maintained and whether the course was effective in reaching the set extension aims.

In general, the individual extension method is time consuming, but: "...its importance cannot be stressed enough, because it is through working individually with the clientele that the extension worker learns about the people of the area, how they think, what their needs are, and how they carry on their work. Equally important is the opportunity individual contact provides for the local citizen to get to know the extension worker so the personal bond between the extension worker and the community can be established." (Kang and Song, 1984:130).
GROUP EXTENSION METHODS

Through group methods the extension agent can reach more people than through individual extension. Group methods can only be effective if the problems and opportunities discussed are of interest to all or most of the group members. Also, group discussions enable the extension agent to obtain a more thorough picture of the situation discussed as more people will express their views. However, in any group there will be different people. There are always more influential persons present, either because of their economic, social or political status, and these persons might dominate the discussion easily. To obtain a balanced view about a situation, it is important that as many views as possible are heard and taken into account. This requires considerable communication skills of the extension agent, who has to be open to all possible views, must motivate people to express their views and must respect all views as much as possible.

The following categories of group methods can be applied in fisheries extension:

Demonstrations
Demonstrations are traditionally the corner-stones of agricultural extension, whereby recommended farming practices are shown and discussed with groups of farmers. In fisheries this method is less used, at least not so much on a systematic basis, but perhaps more on an ad hoc basis. There are usually no national programmes that propagate recommended fishing practices. However, demonstrations can, for example, be used to propagate improved methods for fish drying; methods for proper maintenance of engines, use of safety measures at sea; and management of prawn ponds.

A demonstration will not take more than one or half a day. As such the demonstration, depending on the subject, is sometimes too short to teach fisherfolk a skill. In such cases, the demonstration may enhance the clients knowledge about a certain subject and as a result may change their behaviour. More complicated skills can be obtained through workshops, a method which will be discussed later. The demonstration is usually conducted in the area where the client group lives.

Demonstration On Operation And Maintenance Of An Outboard Engine

A demonstration can be conducted by anybody who has something useful to demonstrate and is knowledgeable to do so. In some cases the extension agent herself or himself may conduct the
demonstration, but it is very well possible that the extension agent invites somebody else to conduct the demonstration. This can be an officer from the Ministry of Fisheries and Aquatic Resources, other fisherfolk or a person from the private sector. These persons may have more technical knowledge about the subject than the extension agent has. In such case the extension agent can be very instrumental in organizing the demonstration and in ensuring that the demonstration addresses the needs of the client groups and that the clients have indeed the opportunity to actively participate in the demonstration.

In organizing a demonstration a number of important aspects should be considered:

1. The participants of the demonstration should become involved with the topic and actively think about the advantages and disadvantages of following the recommendation. Only then the demonstration might become successful. Again it depends on the communication skills and creativity of the extension agent to get the participant as much involved as possible.

2. The practice recommended should be of use to the participants. It is of little value to demonstrate improved methods of fish drying if the methods already used are more appropriate. The extension agent, through his or her knowledge of the area, can decide whether a certain recommended practice is of practical value or not.

3. The demonstration should be as close to the real situation as possible. Preferably at sea when it concerns a subject related to fishing at sea. And preferably using real material, rather than using only audio-visual aids to show how the material can be used. For example in case of engine maintenance, real engines should be used and in case of fish processing real fish should be used.

4. The recommended practice should be as appropriate to the area as possible. One way to ensure this is to use required material from the area. For example, in a demonstration of proper maintenance of outboard engines, the type of outboard engine(s) mostly used in that area should be used in the demonstration as well. The most practical way is to borrow the engine(s) from fishermen: this is very time and cost effective. With a little bit of creativity one can find that it will not always cost much to conduct an effective and efficient demonstration.

5. If possible, the demonstration should focus on results and not only on the process necessary to reach the result. For participants it is very convincing to see the actual results of a recommended practice. For example, a fish drying rack, in a demonstration of making these racks. Sometimes it might not be possible to have the results ready in one day, for example in a demonstration of maldive fish making. In such cases the organizers can bring the end products in advance.

Excursions
During an excursion, a group travels to another location to observe and discuss fishing practices or demonstrations that are not done locally. The same important aspects that were discussed under the demonstrations are valid for the excursion. One important difference is that the demonstration comes to the client and the client goes on excursion. Hence an additional cost will be involved. It might be very well possible that the extension agent does not have a budget that covers the costs of an excursion. In that case, the clients will have to bear the costs themselves in one way or the other. This might especially be a problem for poor people. Here again it will depend on the creativity of the extension agent and the clients to find a solution to this problem, if any problem arises. For example, clients may agree to save regularly small amounts of money to cover the costs or the excursion may be combined with a cultural outing.

Especially because of the cost aspect involved, it is important that the excursion is well planned. The extension agent should involve the clients as much as possible in the planning and preparation of the excursion.

Ideas for excursions can be exchanged among the fisheries extension agents. For example, when one agent has a very interesting experience in his or her area, this can be discussed during the office
meetings when all fisheries extension agents of one district come together. Other agents can discuss this experience with his or her clients and possibly suggest an excursion.

**Information Meeting**

While the demonstration and the excursion often involve tangible objects such as for example outboard engines, prawn ponds or fish drying racks, the information meeting is a verbal presentation only. During information meetings, programmes or topics can be explained that are of interest to fisherfolk, or that are of interest to the government or that are of interest to both. Such programmes or topics may include: a new credit scheme; coast conservation; fish resources management; navigation rules at sea for fishing boats; new legislation procedures launched by the Ministry; and the legal status of various types of fishing.

The information meeting can be held in various ways. One or more lecturers can be invited or the extension agent may conduct the meeting alone. It is important that during the information meeting the participants get the opportunity to ask questions and to discuss the various aspects of the information provided. Discussions can be held plenary, but it can be very effective to have group discussions, depending on the extent of feedback expected from the participants.

Not all information discussed in the information meeting can be kept in the listeners minds. Therefore, written documentation may be required in addition, for distribution among the participants, such as for example pamphlets.

**Informal Meetings**

Although much is written about formal group methods, in practice much of the extension information is exchanged in informal meetings or informal discussions. Anytime the extension agent meets fisherfolk on the way to somewhere and information is exchanged about fisheries or fisheries related topics, an informal meeting is held. An extension agent known to the village will meet many people on the way. However, here it is important that the extension agent does not always meet the same people or becomes identified with one specific group of people in the village. This is one of the most difficult aspects of extension work. As much as possible the extension agent should retain his or her independent position in the village.
Informal meetings can be very instrumental when extension agents, other extension experts or research officers like to obtain feedback on certain subjects from fisherfolk. During an organized meeting the participants might not be as representative as during an informal gathering on the beach. Also people are more likely to discuss subjects more openly in an open environment, such as for example on the beach or while at work in the fish market. For the fisheries radio team, informal meetings are the main method for collection of information.

Field Workshops
During demonstrations and information meetings it is not possible to learn certain skills that are not very simple, therefore a field workshop can be organized. The field workshop is practical, and is organized at the location where the client group lives and at times that are suitable for the client group. The field workshop is thus not a training: it does not give certificates to the participants at the end of the workshop.

The duration of the workshop depends on the skills that have to be acquired. For example, experience has taught that it does not take a very long time for a person who does not know how to mend nets to obtain this skill, perhaps 40 hours only. However, a person who does not know how to operate and maintain outboard engines will need a long time to learn the ins and outs of the outboard engine: a duration probably beyond the scope of the workshop. However, in 10 hours it might be very well possible to learn some of the basic aspects of outboard engine operation and maintenance. To acquire the skills to repair an engine a much longer training will be required.

For some skills, additional written information will be a must. This might not be necessary for a workshop on net mending, but for a workshop on navigation this will be very valuable.

The workshop can be conducted by any knowledgeable person who has a feeling or experience with teaching people certain practical skills. For some skills, like net mending, a fisherman or fisherwoman who is experienced in that skill can be a very good workshop teacher when assisted by the extension agent. For other skills, such as navigation, more advanced knowledge might be required. In such cases either the extension agent has sufficient knowledge to conduct he workshop or else the assistance of an expert has to be obtained. If an expert conducts (part of) the workshop, it is the duty of the extension agent to inform the expert about workshop participants.

The most important aspect of the workshop is that it suits the needs of the client group: the topic should be of such an interest to the client group that they are willing to donate time to participate in the workshop. Therefore it is most preferable that the workshop is organized on request of the clients. However, it cannot be expected that fishermen and fisherwomen are able to forgo one or more weeks of income to participate in the workshop. Therefore the workshop has to be held at times that are convenient to the clients. Fishermen will definitely have more time to participate in the off-season. Fisherwomen on the other hand will have to attend to their income-generating activities as well as to household activities. For them the late afternoon or the evening is often most suitable. Yet, most important is that these issues are thoroughly discussed with the client group.

One difficult aspect will be the selection of the workshop participants. The best option is that the clients themselves select the people who will most benefit from the workshop. The extension agent can assist in this process, by ensuring that the equity aspects are well looked after. This issue will be further discussed in the next chapter on working with the client group.

The workshops will, in general, be the most expensive extension method, especially when expensive material is required. It cannot always be expected that the clients can meet all the costs. If such is not the case, the workshop can only be held when the extension agent is able to draw from a budget to cover the costs for workshop teacher and the material. Since the workshop is held at a time that is convenient to the client group and it is ensured that the subject is of real interest to client group, it is not very logical to pay daily allowances to the participants. Instead, the more the participants contribute themselves to the workshop, such as for example tea or some material, the more incentives there are for the participants, the instructor and the extension agent to make the workshop a success.
VISUAL AND AUDIO-VISUAL EXTENSION AIDS

Visual and audio-visual extension aids, such as slide-projectors, blackboards, flip charts, video, etc., cannot be called extension methods, but are tools that help to make the group or individual extension method chosen more effective. Visual and audio-visual aids do not replace the personal contacts between the extension agent and his or her clients. Audio-visual extension methods can be used on their own, but, as discussed above, most of these mass media extension methods, such as radio, are more effective when used in combination with group or individual extension methods.

As stated by Bradfield (1966:72): "People learn through all their senses: that is to say, what they see, what they hear, what they smell, what they taste and what they feel. When more than one sense is used, learning is increased. Research in the United States indicated that people remember 10 percent of what they hear, 50 percent of what they see, 90 percent of what they see, hear and do in a combined learning situation." (3). Hence, the use of audio-visual extension aids can greatly enhance the effectiveness of an extension activity.

**Visual Extension Aids** can be grouped into the following aids:

1. Real objects
2. Samples and specimens
3. Models
4. Photographs
5. Posters
6. Flip Charts and Wall Charts
7. Chalkboards and Magiboards
8. Magnetic Boards and Flannel Boards
9. Overhead Projectors
10. Slide and film projectors

**Audio-visual Extension Aids** can be grouped into the following aids:

1. Slide Shows
2. Film Shows
3. Video

Because there are many fisheries extension agents in the country, and because the budgets for extension work are limited, extension agents will normally have to work with rather simple visual aids. Just like for many other aspects of extension work, in inventing effective and low cost visual aids, creativity is an important attribute. Expensive visual and audio-visual aids, such as video, do not make ineffective extension work more effective, rather the extension work will have to prove that it is worth using expensive aids, when that is indeed required.

Especially when extension is conducted at the field level, real objects are abundantly available. A workshop on outboard engine operation and maintenance gets more meaning when the participants can see and discuss an engine that is badly maintained and an engine that is well maintained. The extension agent can borrow these engines from fishermen in his or her area. Fish can be used as real objects in extension on fish handling and fish processing.

Furthermore, the extension agent can use chalk boards to further explain the extension message. For writing and drawing on chalk boards, wall charts, flip charts or magiboards, it is important they every participant can read what is written or drawn. When the extension agent feels unsure about making a drawing on a chalk board, he or she can prepare wall or flip charts in advance, for example by cutting out illustrations from other literature. Those who like to draw can make their own

(3) It should be noted that abilities to use the different senses can be very culture specific. Therefore, the percentages of remembering through hearing or seeing or a combination of both can vary from culture to culture.
illustrations. A number of wall or flip charts used in a sequence can make a flip book. For example to show the steps involved in a recommended method for making maldive fish.

A Flip Book On The Preparation Of Maldive Fish

For the use of more expensive visual and audio-visual aids it cannot be expected that the extension agent can organize those as well. Hence, if an extension programme indeed requires such extension aids, they could be made available to the extension agent on request. For example, the district fisheries office could keep an appropriate collection of posters, photographs or slides on relevant topics and could borrow a slide projector on request.

Video or film, when used in an extension programme, cannot just be borrowed to the extension agent. This equipment usually requires somebody to operate it and it has to be transported carefully. A solution found to this problem was the operation of special vehicles equipped with audio-visual material. Experience has shown that these "mobile units" can only operate successfully when incorporated in an effective extension service and when the use of the audio-visual equipment was well planned in the context of an extension programme.
CHAPTER 5 WORKING WITH CLIENTS: THE DEMAND SIDE

Working with Clients

In chapter 4, we discussed the various extension methods that can be applied in fisheries extension. Normally a national fisheries extension service plans and manages fisheries extension programmes that are implemented nation-wide or in certain specific areas. The involvement of the fisheries extension agent will vary according to the scope of the programme and the extension methods used. For mass media methods such as radio or the production of pamphlets, their involvement will be relatively low. whereas for individual extension methods this will be high.

Apart from programmes planned by the extension service, initiatives for fisheries extension can be taken by fisherfolk or by the fisheries extension agent. These initiatives are then, initially, to be implemented on the local scale only. Often it depends on the personal commitment and initiatives of the fisheries extension agent to organize extension services that result from such local initiatives, for example field extension workshops or excursions.

As discussed in chapters 1 and 2, extension programmes planned at national level will not always appear in the immediate or short term benefits of some client groups. Fishermen use a common fish resource and the management of this resource requires legislation. For example, a fisheries law that forbids the use of gill nets beneath a certain mesh size aims to protect fingerlings from being caught.

Legislation is one of the intervention instruments that can be used in a fisheries development programme. Fisheries extension programmes can go hand in hand with fisheries legislation, for example when related to trawling or ring net fishing. Certain trawl or ring net fishermen will not like such a programme because it may make their fishing more expensive (when the licence fee for these nets is increased) or it may make their fishing impossible (when a complete ban is in force). However, in the long run preservation of the fish resource will be in the benefit of these fishermen or their children as well.

It is a complicated aspect of fisheries extension that it has to be conducted in the context of the fisheries legislation and regulations. But it is also a challenge for the fisheries extension service to explain the purpose of sound regulations and to provide information on alternative (fishing) activities.

Whether the initiatives for an extension activity come from the national level, or from the clients or from the fisheries extension agent, the agent will work with his or her clients. Even national extension programmes will only be successful when the extension agent is able to tailor make the extension message to the situations, to the levels of knowledge and skills, as well as to the attitudes and behaviour of the various clients.

For example, it is of little use to provide basic skills on the operation and maintenance of outboard engines to fishermen who already have those skills. Furthermore, negative attitudes of clients towards certain programmes can be the result of many reasons. The clients may have inadequate information to judge the benefits of the programme or may have had bad experiences with similar programmes in the past. Hence, the fisheries extension agent will have to work closely with his or her clients. This chapter will discuss how the fisheries extension agent should go about with working with the clients.

The Principle Of Client's Self-Reliance In Decision Making

The fisheries extension agent basically offers a service to individual clients or to specific target groups. A very important principle of offering fisheries extension services is that it should help the clients to remain or to become self-reliant decision makers in improving their fisheries economic activities. In Sri Lanka it has been a tradition to offer government services to people in such a way that people have become dependent on these services. For certain sectors, such as health and education, it is
normal that people become dependent on the basic facilities offered by the government. But when it concerns economic enterprises, and each fishing unit is an economic enterprise, such dependency will have disadvantages in the long run (4).

Each enterprise requires constant investments (however small), as well as decision making on how these investments should be made in the most economical way. By issuing subsidized fishing equipment or by outsiders (such as the fisheries extension agent) making decisions for fisherfolk on how to proceed with the enterprise, the dependency of fisherfolk on the government increases. As a result, the client may become reluctant to think about future investments or decision making since it is expected that the government will, at least partly, take care of that. This can be detrimental to the enterprise, especially because government services may not arrive in time. Also the provision of these services is a relatively costly public expenditure. However, in recent years the government has become aware of these disadvantages and now supports the principle of self-reliance of fisherfolk.

For the individual fisheries extension agent, to make decisions for a client gives a sense of authority, because it makes the agent directly responsible for the benefits attributed to these decisions. Yet, the extension agent should take a modest position, and the responsibility for decision making should remain as much as possible with the client. The following example will illustrate this.

A fisheries extension agent has given advice to a client on how to make higher quality maldive fish than she was making before. The client indeed succeeds in making this higher quality processed fish. But in the village there is no direct market for it because of the higher price. The fisheries extension agent by chance knows a shopkeeper in a nearby town whom he gets interested to buy the maldive fish from his client. The agent negotiates the price, the quantity and other procedures with the shopkeeper, because his client has no experience with such dealings. From time to time the agent helps to mediate between his client and the shopkeeper, especially when problems arise.

After one year, the fisheries extension agent is selected by the national extension service to participate in a three month in-service training in Colombo. During this period, his client and the shopkeeper again have problems in their trade relationship. The client is unsatisfied with the price she obtains for her maldive fish and the shopkeeper maintains that he is only willing to buy from her if she can guarantee a regular supply. The client several times appealed for the assistance of the fisheries extension agent, but he has no time to come to the village due to the heavy training programme, which also includes multi-day fishing trips. After a few months the relationship between the client and the shopkeeper has further deteriorated to the extent that the shopkeeper decided to buy maldive fish from another supplier. The fish processor had to stop her business because she did not know of any other sales outlets and if she had known she felt that she would not have been able to negotiate a price that would have allowed her to make a profit.

Although the efforts of the fisheries extension agent were laudable in itself, some important aspects were not well taken into account. What we can learn from this experience is that the fisheries extension agent is often only a relatively short period in one duty station. Six years in one area may seem long, but when compared to the lifetime of a fishing enterprise, which can go on from generation to generation, or the lifetime of a fish processing enterprise, this is only a short period of time. Hence the clients should at any time be able to proceed without the assistance of the fisheries extension agent.

What the extension agent should have done in above example, is to teach his client how she could independently market her fish. This would include, how to find a market, how to negotiate with traders, and in general how to improve the management of her business, for example to ensure a regular supply or how to keep stocks. It is very logical that the fisheries extension agent does not

(4) In the previous chapter we have excused (very) low income groups from getting subsidies, but this arises more from a welfare point of view than that it aims to build up viable fishing enterprises.
know all about these various business oriented aspects. If that is so, he could have called on the assistance of experts, who may even have been available in the village or in the nearby town, such as the shopkeeper himself.

Assessing The Real Needs And The Problem Analysis

As discussed in chapter 4, the more clients themselves are willing to contribute to the extension service, the more effective the extension service will be and the more cost effective it is. However, for a fisheries extension agent to make the extension service as effective as possible and to motivate the clients to generate as much of their own resources as required, the agent should very well know what the real client’s needs are.

The fisheries extension agent can assist his or her clients to formulate their own needs precisely. The agent may often receive requests for certain training, since people feel that may be a way to start income-generating activities or to improve their income. But what do these client actually expect? It has happened that field training courses in net mending and repair, were organized for female participants in a certain area and when the course was finished, the participants asked the organizers what they were supposed to do next with their newly acquired skills. In such case the extension agent may have given the wrong expectations, but certainly the real needs of the participants were not adequately assessed and discussed. Clearly their needs were to find employment or to start income-generating activities and this is thus a need that goes beyond the need for skill training only.

By principle, the fisheries extension agent is unable to find employment for his or her clients. He or she can only provide extension services in such a way that the clients can make optimum use of their own capabilities and resources so that they themselves may be able to find employment or to improve existing income-generating activities. Therefore, it is very important that the extension agent discusses these capabilities, resources, and the possible ways to improve the situation with the clients. Together with the clients, the fisheries extension agent will have to conduct a problem analysis. To be able to assist the clients, the agent will first have to learn from the clients and to find out what their problems and consequent real needs are. It is impossible to help clients without discussing their situation.

In finding possible solutions to the clients’ problems and needs, the extension agent should always question whether extension is indeed a part of the solution. In chapter 2. we have stated that: “Extension tries to bring about changes in knowledge, attitudes, skills and/or behaviour”, and accordingly we have already discussed what extension can do and what it cannot do. Extension cannot provide resources or employment, but it can give information to clients on how to mobilize one’s own resources and, when required, how to obtain outside resources such as credit.

For example, the fisheries extension agent cannot provide credit for a client to replace an inboard engine, but, if appropriate, he or she can advise the client on solutions to solve this problem: firstly, on how to better operate and maintain the engine - to prolong its life time -, secondly, on how to generate regular savings in such a way that the engine can be replaced from the client’s own resources, and third, on how to contact banks to obtain a bank loan to replace the engine. The appropriate solutions will have to be discussed with the client, in accordance with his capabilities and resources.

The fisheries extension agent will not always work on request of individual or groups of clients. Especially in the context of a national fisheries extension programme, certain targets or extension aims will have to be reached, for example related to an increased use of safety measures at sea or an increase in demersal fishing in the inshore waters. If individual or group extension methods are used for such a programme, the fisheries extension agent will have to search actively for the would be clients of the programme. Even in this case, it is very important that the extension services are provided in such a way that it suits the needs of the clients as much as possible. Otherwise, the clients will just ignore the advice and may loose faith in the service provided by the Ministry of Fisheries and Aquatic Resources. Unless of course, the clients will have to follow the advice due to the fisheries legislation that goes with it.
If it appears that a programme is not well designed, because it does not suit the needs and capabilities of the clients or target groups, the fisheries extension agents should be in a position to discuss this with their superiors and colleagues. This could be discussed at the regular fisheries district meetings. And if these problems are recognized on a wider scale, the national fisheries extension service should make the appropriate adjustments if possible.

**Working With Client Groups And Village-Level Organizations**

Just like with individual extension, group extension can be initiated on request of clients or by the fisheries extension agent (whether in the context of a national extension programme or not.) Requests from clients can come in various ways. In some cases an individual or a few persons who know each other can come with the request, or in other cases the request can come from a village-level organization. In Sri Lanka there is a wide variety of village-level organizations, and people are generally very well known to the concept of such an organization. The organization or society can be related to the government, such as the Gramodaya Mandalayas, it can be related to the Ministry of Fisheries and Aquatic Resources, such as the fisheries cooperative, or it can be non-governmental, such as the funeral society.

If the request for extension on a certain topic comes or a group of clients have expressed a problem in the field of fisheries, the fisheries extension agent together with the persons or organization who made the request should first make a thorough problem analysis and needs assessment. After this it should be decided collectively what can be done to solve the problem and whether extension is indeed necessary. And if extension is a possible means to solve the problem, it should be decided whether the proposed extension activities are financially feasible. Can the participants shoulder part or all costs, is there a government budget available to cover part of the costs? What alternative extension activities can be suggested when the costs involved are too high?

In chapter 3, we have already discussed the problem analysis and in Annex 1, a form is given that can be used as a frame for a problem analysis. Such an analysis can be done by the extension experts of the national fisheries extension service, for the planning of extension programmes, as discussed in chapter 3, but the problem analysis is also a main tool for identification of extension activities at the field level.

For some group extension methods there are no or hardly any limitations to the number of participants. For example, if a group of persons expressed their wish to become better informed about the procedures of a newly started fisheries credit scheme, the fisheries extension agent can assist in organizing an information meeting. Responsible bank officers from a nearby town can be invited to provide information and discuss the credit scheme. Although there are some limitations with respect to the number of participants, for example when considering the accommodation, it would not be necessary to select participants. To make the proper arrangements, it is recommended to get an idea on how many people will come. And if there appear too many interested people for one effective information meeting, the organizers can decide to have two meetings or more.

However, when it comes to group extension methods such as excursions and field workshops, there are limitations to the number of participants. Especially with respect to field workshops, for example a workshop on the operation and maintenance of outboard engines. Only a selected number of persons can participate, depending on the type of workshop, number of trainers available, the material available and the accommodation. It is also very important that committed persons participate and also the persons who most need the information provided. Hence a good selection process is very important.

In the past, fisheries extension agents have not taken this selection process very seriously, but it is one of the most important keys to successful extension. Also, when a fisheries extension agent is just starting with fisheries extension in a certain area, or when the extension methods used are new to both the agent and the area, it is important to find out and prove whether the extension method is indeed successful or not. Hence, in the beginning, quality should be the main concern and as such it is recommended to start with small groups.
If a good selection is required, it is easy if a village-level society can do the selection. Society representatives may know the members well and may have easy ways to contact the members. The fisheries extension agent will have to judge, through discussions with representatives of the society and its members, whether the society is indeed able to make a good selection.

A good selection can be hampered due to two main reasons. First is that the fisheries extension agent himself or herself does not take the extension effort very seriously and transfers this attitude to his or her clients. As a result, the client or society has little motivation to indulge in the time consuming process of selecting committed and needed persons.

The second reason is that the request came from a weak society that is not based on a sound support from its members. If not all members are in some way actively involved in the society it is often difficult to arrange discussions on new activities, such as the planned field extension workshop, and on the way participants are to be selected.

Each of these reasons or a combination can result in a bad selection of participants based on favour and friendship ties rather than on an objective assessment of the most committed and needed persons.

If the request does not come from an organized group such as a society, or if the society itself is not able to conduct a sound selection of participants, the fisheries extension agent should assist in the selection process. Discussions should be held with the persons who requested for the extension services and it should be decided what selection procedures should be applied and what is expected from the participants. The following questions are important to consider for a sound selection procedure:

1. How to diffuse information about the field extension workshop in the village, e.g., through notice boards, by informing key persons, during a society meeting or during a specially organized information meeting;

2. Which persons are eligible to apply, i.e., what are the selection criteria: should the person be a member of the society or is that not necessary, should the person be involved in fishing or fishing related activities, etc.;

3. How should interested persons apply, e.g., if an information meeting is held on the field workshop, can interested persons put their names on a list or should they write to the organizers and explain why they are interested in participating; and

4. How are participants going to be selected from among the applicants: e.g., will the society form a special committee for the organization of this workshop and should that committee decide or who else should decide;

It is important that the clients, whether society members or not, themselves decide about the selection procedures and that the fisheries extension agent helps them to guide this decision making process. The agent should see that decisions are made about the most salient issues, and also that the decision making is not dominated by one or a few persons only.

For the potential participants to make a good decision on whether they like to participate or not, it is important that they are well informed about the workshop: what are the purposes, what are the arrangements, what are they expected to contribute, and how long will it take. Here it is detrimental to inform the potential participants about a possible daily allowance. If such provision is not made (which is, in general, advocated here) this should be clear, as not to attract non-committed persons or persons who drop out once the workshop has begun.

With the selected participants at least one discussion will have to be held before the workshop starts. It would be most advantageous if the trainer(s) could be present at this meeting as well, and in any case the outcomes of this discussion will have to be communicated to the trainer(s). In the first place, this discussion serves to further discuss the purposes of the workshop: what do the participants
actually expect from the workshop; how are they going to use the acquired skills; and as a result, what topics should be dealt with in the workshop. In the second place, the arrangements of the workshop will have to be decided upon. This may include the following arrangements:

1. Which times are most convenient to the participants?

2. Where will the workshop be held?

3. What material is required and what can the participants contribute to this (for example, used outboard engines for a workshop on operation and maintenance of outboard engines)?

4. Is it necessary to store equipment and material during times that the workshop is not ongoing and where can this be done?

5. Are tea and possibly food arrangements required and how will that be organized?

6. Is provision of accommodation for the trainers necessary and how will that be organized?

Again, the fisheries extension agent will have to see that the most important topics are indeed discussed and that the discussion is not dominated by a few persons only, but that as many people as possible contribute to the discussion. As we see, in this way, there will be quite some preparations before a workshop or even an excursion is held. But, the results will be rewarded accordingly!!! However, the question remains whether the fisheries extension agent indeed has the time to engage in this time consuming process of community work. If such time is not available, it will be very difficult to organize sound workshops and excursions, unless a well established village-level society is capable to do this work.

**Working With Adults**

One of the most important features of fisheries extension is that the clients are usually adults. One can imagine a few possibilities of children being the clients of fisheries extension. For example, to increase the awareness among children about the vulnerability of fish resources and the effects of pollution on the fish resources, the extension service may decide to support a documentary programme on television or to produce a cartoon. However, in the field, the fisheries extension agent will normally work with adults.

Working with adults requires a different attitude from working with children, especially when one compares primary or secondary school education with extension work for fisherfolk. The principal differences are that (UNDP, undated:5):

1. extension does not involve coercion of any sort, but it depends on voluntary participation; and

2. the extension message should be practical in such a way that it will be applied by the target group within a certain period of time.

We cannot force the target group to use the information provided. Rather it is up to the clients themselves to decide whether they like to participate in a certain extension effort or not, and if so, whether the information is useful enough to be applied. Therefore, it is extremely important that the extension activities are organized by the extension agent with the assistance of the clients or even better, by the clients with the assistance of the extension agent.

The practical applicability of the extension message can only be assured when the extension agent learns about the situation of his or her clients and takes sufficient time to listen to the reasons why clients' situations have evolved the way they have. In the first place, the extension agent must realize that fisherfolk are experts in their own situation.
Inappropriate extension efforts are often the result of shortsightedness of extension planners and extension agents about the client’s situation that the extension programme tries to change. Such programmes can result in the clients just ignoring the information provided to them, but it may even have negative effects. Clients may already have put their resources in a recommended practice, for example by buying a certain fishing gear, and will loose these resources. Or the recommended practice does not benefit the target group but those who do not necessarily need it and this may worsen the situation of the target group.

For example, uncontrolled support to increase the number of mechanized craft has often resulted in poorer fisherfamilies not being able to benefit from the scheme. Instead, they had to cope with increased competition for fishing grounds, resulting in a lower catch for the non-mechanized craft. Some programmes can be extremely beneficial, but not for the target group for which the programme is intended. Extension planners and extension agents should be very well aware of the effects that a certain extension programme will bring about, not only for the target group, but also for non-targeted groups.

**Working With Social Groups And Power Structures**

We have already discussed the division we make in different target groups for an extension programme. For example, one target group can comprise of skippers of 3 1/2 ton boats and another target group can comprise of small-scale fish processors. Overlap between different target groups can occur; a fisherman can be the owner of a 3 1/2 ton boat and be engaged in small scale fish processing as well.

Apart from the practical division (for the purpose of the programme) in target groups, adults can be divided in groups according to certain social characteristics. Age can be a social characteristic, but there are many more, such as: sex, religion, caste, political affiliation and economic status. The importance of certain social characteristics make those people feel that they belong to a certain social group. People belong to various social groups, but with different levels of affiliation.

The type of social groups prevalent in one area can be different from the type of social groups in another area. Often social groups become important when there are differences in certain social characteristics, such as for example, on religious or political grounds.

In general, groups of adults with different social characteristics often have different interests and experiences. For example, younger people often have a higher education standard and are quick to learn new subjects. Older people often have a wealth of experience to offer. The extension agent will have to cater to these different interests and experiences and will, if necessary, have to adjust the way extension is given (or the way the extension message is presented) and the extension message accordingly.

In some cases it is possible to mix different social groups. This should be encouraged because often various views to a certain situation or problem give a deeper understanding of that situation or problem and can be a better basis for finding the appropriate solution.

Thus as long as the interests and experiences of the different social groups, belonging to the same target group of a particular extension programme, do not conflict, it might not be necessary to organize different extension activities. But in many cases it is just culturally not viable to mix certain groups. Cultural values are different from one community to the other; what is customary in one place can be the opposite in the other place. In some communities it is normal that men and women attend the same meetings and that women are allowed to express their views. In other communities, women attend separate meetings, but can only participate with the consent of their husbands or male relatives. Similar distinctions can occur with other social characteristics. The fisheries extension agent will have to be sensitive to these customs and values in his or her area and will have to make the appropriate adjustments to the extension activities, to reach as many segments of the target group as effective as possible.
Thus in the first place the extension agent will have to see whether the target group consists of different social groups. If so, the second question is whether the different social groups require different extension activities, either because of:

1. **their different interests.** This affects the content of the extension message. For example, an extension programme may have the objective to improve operation and maintenance skills among owners of outboard engines and the target group comprises of both young and older owners of outboard engines. The younger people might be more interested to learn detailed skills, whereas the older people might be more happy with a general knowledge about operation and maintenance of outboard engines;

2. **their different learning capabilities.** This affects the extension method. For example, in some areas women have lower levels of education than men. Therefore, extension programmes for women in this area may have to include simpler audiovisual aids which use more illustrations than would be necessary if the target group entirely consisted of men.

3. **their different income generating or household activities.** This affects the timing of the extension activities. For example, each type of fishing gear has its own requirements with respect to timing of the fishing operation, and thus fishermen using different gear are at sea at different times.

4. **the existence of cultural values that do allow certain social groups to mix.** This may require the organization of separate extension activities.

Not only does the existence of social groups often influence the extension message and the extension methodology, it also has often consequences for the success of the extension programme. Many of the fisheries extension programmes aim to improve the economic situation of their clients, often within the context of a sustainable fish resources management. If members of a certain social group succeed in improving their economic conditions, this may not be accepted by members of other social groups or it may cause friction within the social group itself.

Changes in economic conditions of clients are never neutral with respect to the power base of these clients. The people, either clients or non-clients, who feel that their power base is weakened by the changes will resist these changes. In some cases disadvantages that go with this resistance outweigh the advantages of the extension programme. Two examples are mentioned here to illustrate this principle.

If fishermen themselves learn more about operation and maintenance and maybe even about repair of their engines, they need less services from the village mechanic or the local spare parts dealer. And if they need those services they are in a better position to negotiate better services. Hence, the mechanics and spare part dealers may not like the new skills and knowledge acquired by the fishermen and may boycott their service supply to these fishermen.

Another example, concerns the economic position of women. An extension programme, with the objective to help fisherwomen to acquire skills in improved methods of lagoon fishing, has significantly contributed to an increased income for these women. However, with their better and more reliable earnings, the position of the women in their households changed. In some cases the women acquired a more independent status, because they were no longer financially entirely depend on their husbands or on other members of the family. These women were allowed to decide for themselves the way to spend their earnings. However, in some communities such an increased independent status is resented by the male members of the community. This can result in a deteriorated treatment of women in the household. Yet, the opposite may happen in other communities: the earnings generated by the woman has to be handed over to the husband, who now feels that due to the additional income he needs to work less. The workload of the woman has thus increased without an improvement in the household income.
It can also happen that certain relatively powerful people use the economic opportunities, triggered by the extension programme, at the expense of others. This can be illustrated by the following example.

A group of ten women have participated in a field extension course in improved methods of maldive fish making. The ten women know each other well from the neighbourhood, and are thus from the same social group with the characteristic neighbourhood, but when it comes to economic status, the women do not form one social group. Most women are wives of crew members who do not own a boat or an engine, some do own fishing nets. These women are engaged in coir rope making to supplement the household income. Two women, however, come from boat owning families and both own a number of coir pits. Many of the other women work in the coir pits of these women.

When the participants successfully completed the course, one of the women who owns a number of coir pits decided to start a business in maldive fish making. From her own resources she had a number of drying racks constructed and a number of smoking kilns made. She then told four other women, who all had followed the course and who also worked in her coir pits, that she would like them to work in her maldive fish making business. The women would receive payment for the quantity and quality of maldive fish produced. The four women implicitly made it clear that they were not very charmed by the idea. They told her that they were already busy making the coir rope and would not be able to do the work in addition to their household duties. In practice, they felt that the wage was too low, as they could make more money by making coir rope, but they also hoped to make maldive fish themselves, be it on a much smaller scale.

The enterprising woman, however, did not want to give up her ideas nor did she want to hire other women from outside the neighbourhood to whom she would have to pay a much higher wage. Therefore, she told the women that they could choose, either they would work for her, or they would not, but this latter would mean that she would not allow them to work in her coir pits as well. All women choose the first option, as they knew that it would be very difficult to find other coir pits in the vicinity of their neighbourhood.

In practice, this type of exploitation is often not as blatant as it is mentioned in this example. But we all know that power structures exist at village level and that people tend to use these structures for their own benefit. Again, the extension agent will have to try to avoid these situations and try to suggest options that suit both poorer and richer participants. The best method is to discuss the possible options with the likely powerful people and with the clients, for example during the hours that the extension activity is ongoing.

It is not necessary that such negative effects occur, but the risk is there. The extension agent should be very sensitive to these possible effects, and try to discuss these with the clients as much as possible. In general, the more the clients are involved in the extension activities and discuss the opportunities and problems they will encounter when they improve their situations, the more likely it is that such effects can be anticipated.

Establishing A Demand For Fisheries Extension

As we have seen in the previous paragraphs, the fisheries extension agent is involved in the two sides of fisheries extension: the demand side and the supply side. For the demand side, the fisheries extension agent assists the clients in their problem analysis and needs assessment and if necessary, helps to organize the clients for group extension methods, such as the field workshop. At the supply side, the fisheries extension agent is responsible for providing the required extension services to the clients, such as the provision of technical information.

We have also seen that the development of a sound demand side is very crucial and that this takes a lot of time of the fisheries extension agent. However, for an efficient extension service it would be
most advantageous if the fisheries extension agent could concentrate on the supply side, rather than having to put so much time on the community work required for an effective demand for extension that leads to neglect of the supply side. The fisheries and fisheries related technical subjects are numerous and developments for each of the subjects may go fast. The fisheries extension agent needs time to remain informed about these developments. Also the fisheries extension agent may have other duties to attend to, such as the enforcement of legislation.

Thus it would be ideal if an effective demand for fisheries extension could be established at the village-level. As discussed above, village-level societies can play an important role in establishing this demand, provided that they are based on a broad support from its members. For individual as well as for group extension it is important that the potential clients and target groups are informed about the fisheries extension service and about what it can offer and what it cannot offer. As many persons as possible should be informed, to avoid that the extension service concentrates on an inside group only. The fisheries extension agent is responsible for spreading the required information, and can be assisted by mass media methods such as radio or newspapers.

DEMAND SIDE:
- Individual clients
- Clients groups
- Village level organizations

SUPPLY SIDE:
- Fisheries Extension Agent
- Fisheries Extension Service

**Resources:**
- skills
- experiences
- other resources
- problems
- needs

**Interaction:**
- problem analysis
- needs assessment
- extension needs
- organization of extension activities

**Resources:**
- technical skills
- communication skills
- experience
- other resources

Supply And Demand of Fisheries Extension At The Field-Level

The Role Of Village-Level Fisheries Societies In Establishing A Demand For Fisheries Extension

Village-level fisheries societies, such as fisheries cooperatives, are the most obvious organizations for establishing a demand for fisheries extension at the village-level. In Sri Lanka, there is a long history of village-level fisheries societies that have been initiated by the Ministry of Fisheries and Aquatic Resources. Subsequent governments have introduced different concepts of fisheries societies and as such there are not many government supported fisheries societies that have existed over a relatively long period of time.
An advantage of the fisheries society is that, because of its links with the Ministry, the fisheries extension agent can easily establish contacts with a potential target group. However, there are three important aspects that should be taken into account when working with the members of a fisheries society. These are the following aspects:

1. How representative are the members of the fisheries society when compared to the fishing village as a whole;

2. How representative are the executive members of the fisheries society for its members; and

3. Are decision making processes within the society pursued in such a way that all members are adequately involved in the society and have equal access to the benefits offered through the society.

Each of these aspects will be further explained.

Membership to village-level societies is usually restricted in one way or the other, either through formal restrictions or requirements or informally. Restrictions can be based on an actual set limit to the number of members. For example, the society may have adopted a regulation that sets the maximum number of members at 50. There can be all sorts of requirements that aspirant members will have to fulfil before becoming a member, such as buying a share, being proposed by one of more members or having shown good behaviour during a certain probation period.

Apart from formal restrictions and requirements, which are often laid down in the society’s constitution, there can be all sorts of informal restrictions and requirements. Some societies wish to have members of one certain neighbourhood in the village only, and some societies informally require that members support a certain political party. Here it also should be mentioned that some societies favour members from the different sexes, whereas other societies have members of one sex only.

The fisheries extension agent should be well aware of the type of members that belong to the fisheries society in his or her area. Fisheries extension services are in principle public services and therefore the most needed and committed beneficiaries should be selected from a broad section of the fisherfolk in the fishing village. If the fisheries extension agent feels that such a broad section is indeed represented in the fisheries society, there can be good reasons to contact a potential target group through the society.

However, in some cases the membership of a society can be restricted in such a way that it is parallel to the target group of a certain extension programme. For example, the national fisheries extension service may have planned a programme to promote better maintenance of inboard engines. If a society appears to have mainly members who are skippers on 3 1/2 ton boats, this may constitute a sound target group for the planned programme. But if the programme, for example, intends to introduce trammel nets on traditional craft such as the oru, the members of this society are not a suitable target group. In such case, the fisheries extension agent may have to find the target group among those fishermen who are not necessarily members of the society, if at all they are present in the fishing village.

The second aspect concerns the executive members of the society. They are important persons for the fisheries extension agent because he or she will normally reach the target group through the executive members. If the fisheries extension agent feels that the target group is well represented in the fisheries society, it will often depend on the executive members of the society in how far the target group can become effectively involved in the extension programme. This means that the specific target group should feel represented by the executive members.

Here we come to a very specific feature of the fisheries society and that is that in practice the executive members of a fisheries society are not always full-time fishermen, but for example, traders or even government servants. We can find that fishermen themselves are not always the most active
members in the fisheries society. Pollnac (1988) has analyzed a number of reasons why fishermen find it difficult to participate actively in a fisheries society, and the following reasons can be relevant for Sri Lanka.

1. Fishermen are sometimes not present in the fishing village during a certain period of the year because of migration during off seasons, either to other fishing grounds or to inland areas for agriculture or inland fisheries;

2. Fishermen have irregular working hours, which can make it difficult to participate in scheduled meetings;

3. Fishermen are independent natured, which is enhanced by the secrecy of fishing grounds. Therefore, they have a certain reluctance to discuss fishing matters; and

4. Fishery as a mainly common property resource works on first-come first-serve basis, and this may inhibit a feeling of cooperation.

Pollnac (ibid.) has also noticed that in many countries women have a prominent and complex role in fisheries and fisheries related activities. Therefore, the success of the fisheries society may often depend on the role that fisherwomen have in the society. This important role has been acknowledged by the Ministry of Fisheries and Aquatic Resources in the 1990-1994 National Fisheries Development Plan. Women often have a greater sense of responsibility in regards to financial matters and in contrast to their husbands or male family members, who have irregular working hours and who might seasonally migrate to other fishing areas, they are more often at home.

It is not necessarily a bad thing that fishermen and/or fisherwomen are not represented by fishermen and fisherwomen in the fisheries society, especially when they feel that their interests are well represented. But it can happen that executive members use the society for their own interests and not so much for the interests of other members. We have seen earlier that fisheries extension agents have to cope with power structures in the village. Some people effectively manage to use the society to strengthen their own power structure.

The last aspect concerns the decision making processes within the society. The society should be able to involve all members in society activities that are relevant to them, at least in the initial stages. Participation in extension activities should be open to all members and in case a selection of participants is necessary, the members should consent to the selection procedures. Often it is easier and faster to call persons from the neighbourhood rather than calling for a members meeting, but openness to all members is required if the fisheries extension agent seriously works with the society.
CHAPTER 6 UNDERSTANDING THE ROLE OF THE FISHERIES EXTENSION AGENT

In the previous chapter, we have already discussed many aspects of the work of the fisheries extension agent. We have seen how important the role of the agent is in the success of extension efforts; not only should the agent have knowledge about fisheries and fisheries related technical subjects, he or she also needs the communication skills to successfully conduct extension activities. However, people have different personalities and not all extension agents will find it easy to communicate with, often unknown, clients.

Yet, there are also general aspects related to the position of fisheries extension agent that may hamper a smooth communication with the clients. To enhance a better understanding of one's own role, we will here discuss a number of these general aspects. It is very important that the agent realizes this well and is aware of his or her attitudes in approaching and working with the clients.

Combining Fisheries Extension With Other Duties

Up to now, we have made the following two assumptions, firstly, that the Ministry of Fisheries and Aquatic Resources has a fisheries extension service and, secondly, that there are fisheries extension agents who conduct fisheries extension at the field level. However, when one has a look at government fisheries services in the region (BOBP, 1990), it becomes clear that most of the countries do not have a separate fisheries extension service and that the fisheries field officers are involved in many activities apart from extension.

In fact, most of the core duties of these officers involve enforcement of fisheries legislation and the registration of fishing craft. The question arises whether it is possible that a fisheries field officer can assume the duties of enforcement of legislation and extension at the same time. It may very well happen that a fisheries field officer has to punish a fisherman for a certain offence one day and has to obtain the confidence of the same fisherman for extension activities the other day.

Some people have argued that this is incompatible. But, we have seen in chapters 1 and 2 that the fisheries sector does require a large amount of regulation, for example when compared to the agriculture sector, and that fisheries extension and legislation can be intervention instruments of the same fisheries development programme. Fisheries extension can make fisheries legislation more effective and fisheries legislation can support fisheries extension (Van Woerkom, 1989).

Especially in the future, when the depletion of the fish resources becomes more pressing, there will be a need for more legislation. At the same time there will be a need for more extension. Extension can in this context broadly serve two purposes:

1. to explain the purpose of the legislation, which serves the long term interests of the fishermen rather than their short term interests; and

2. to advice on alternative fishing methods that are less threatening to the fish resource.

Thus, in principle it can be very meaningful to combine legislation and extension duties. But this is only possible if the attitude of the field officer towards fisherfolk is one of willingness to assist, to explain, and to listen. Fisheries field officers often have taken refuge under the shield of authority that goes with the enforcement of legislation, rather than having exposed themselves to the criticism and comments of their clients. Such authority gives the esteem of a distant white collar employee, and covers the crucial fact that the field officers often have too little knowledge about the fishing and fisheries related activities to confidently face his or her clients.
A White Collar Versus A Client Oriented Attitude

In addition, and this goes without saying, the fisheries field officer is not able to conduct any part-time extension work if he or she is not assigned such a duty or if he or she has no time to conduct extension services. Put in another way, if extension receives the least priority over other duties that have to be performed as well. If limited time is assigned for extension tasks, the extension tasks should be limited as well. It is of little use to conduct poor quality extension.

White Collar Perceptions

The fisheries field officers post is regarded by fisherfolk as a white collar job. The field officer, on the average, has had a higher education than his or her clients, and is a permanent government employee. Furthermore, as mentioned above, field officers often like to enhance their white collar status. With this status, especially over a long period of time, may go an attitude of superiority towards the clients, especially because, in Sri Lanka, fishing does not have a very high social status.

With this attitude of superiority go perceptions on what is good or bad for the clients. One of the most prominent of such perceptions is the importance attached to education. It is frequently stated by officers that fisherfamilies should be educated in order to improve their living situations. But are people really better off with more education? And what is actually meant by education? Are fishermen, in contrast to many fisheries field officers, not already well educated in their own expertise? Is fishing not a very laudable occupation that provides a very important source of nutritious food and that provides employment to many people? Of course, improved fishing and more education can go hand in hand, but education is not just an alternative for fishing.

Another example, is the perception that fisherfolk do not take up certain activities because they do not know how to do it. But often, when you do a thorough analysis, you may find that there are other, more complicated reasons why fishermen and fisherwomen do not change their situations. Reasons that can be beyond their control, such as consumer preferences or even limited enforcement of fisheries regulations. It is very easy to say that lack of education or knowledge are the main problems.

A last example, concerns the perception that fisherfamilies have relatively more bad habits, such as wasting money on drinking rather than investing their returns in productive activities. But is it really true that on the average, fishermen drink much more than, for example, government employees?
Not all fisheries field officers will have biased perceptions, but it is very good to regularly reflect opinions and perceptions in order to give fisherfamilies the right place that they deserve.

Clients and Superiors

Many fisheries extension agents will find themselves now and then in a contradictory position because of having to address both the needs of their clients and their superiors. For example, during an extension campaign to improve skills in maintenance and operation of outboard engines among fishermen, the superiors may like to report (to their superiors) that their agents have reached large numbers of clients within a certain period of time. However, the fisheries extension agent, while working with his or her clients has experienced that more time than anticipated in the programme, will be required for the clients to acquire the necessary skills. Consequently, to ensure a good quality of the extension programme more time will be needed, or less clients than planned can be reached within that certain period of time.

As long as the clients do not contribute to the agent's remuneration, the agent is employed by his or her superiors and their wish will come first. It will thus, for a large part depend on the attitude of the direct superior whether the extension agent is allowed to give sufficient time and attention to address the client's needs. In the context of above example, some superiors are willing to take the risk of upsetting their superiors and would report that experience in their area suggests that a smaller number of clients could be effectively reached than anticipated for the reasons given. Other superiors are not willing to take that risk and urge their fisheries extension agents to give more priority to quantity than quality, in order to reach the targeted number of clients. In the end it depends for a large part on the attitude of the national fisheries extension service in how far it is willing to accept criticism on their programmes and to adjust the programme accordingly.

The fisheries extension agents have a very crucial role in voicing the experiences, problems and needs of fisherfolk to their superiors. For their superiors and the extension experts at headquarters level, the agent's experience is the only professional contact with the ultimate clients of the extension service. Thus supervisors should be eager to obtain a share of that field experience and should be open to listen to the fisheries extension agents.

Also, a fisheries extension agent should be rewarded according to his or her commitment to work with clients. Like any other employee, fisheries extension agents need support and motivation to keep their commitment for their work. But while many officers have the luxury of working in an office, the fisheries extension agent works alone in the field. This has comparatively more inconveniences, such as: working in isolation; enduring frustrations alone without the direct encouragement of colleagues and superiors; taking a lot of effort of reach remote places; and sustaining a sufficient dose of self-discipline. Supervisors should acknowledge these inconveniences. But the extension agents should learn that positive feedback and support can be obtained from clients as much as from superiors (Jiggins and Roling, 1982).

Often superiors do not know precisely what the agent is doing and a lot of good work may go unnoticed. Therefore, it is very important that supervisors make regular field visits and that the fisheries extension agent works alone in the field. This has comparatively more inconveniences, such supervisors. Furthermore, professional attitudes within the organization and a sound reward system, such as career prospects, are ways to sustain the necessary commitment of the fisheries extension agent.

Commitment In Organizing Extension Activities

Above aspects relate for a large part to the conditions of work and the organizational environment in which the fisheries extension agents work. Although the conditions of work are indeed very important, much will still depend on the personal commitment of the fisheries extension agent to do a good job. Too often adverse conditions of work are used as an excuse for not being able to perform well. Yet the challenge is to do as much as possible when the work conditions are not optimal. In this
section we will summarize a number of attitudes that will help the fisheries extension agents to make
the best of their work when limited resources are available. Most of these attitudes have been
discussed in chapters 4 or 5 as well.

1. Local Sources Of Information

Much information is already available at the local level and for the purpose of extension this
information can be applied very effectively, both with respect to quality and cost points of view. A
sound local experience is, as a principle, the most practical information for many clients. For
example, exchange of experiences of fishermen on stranding at sea can be more useful than inviting
a resource person from the navy to give a talk about the causes and solutions of stranding at sea.

It is the fisheries extension agent’s task to tap this information, when appropriate, in the first place.
This requires that the agent has a positive attitude towards appropriate practical information obtained
from practising persons and not only favours the more theoretical information obtained from training
or research organizations. Also the agent should have good contacts with client groups in his or her
area to be able to identify potential local resource persons, as well as to be able to obtain the services
of these persons.

For example, inviting a local person to explain on improved methods of fish processing can be more
cost and quality effective than to invite a person from a research institute. However, the research
institute may have developed applied methods as well. In some cases local persons will, very
understandably, be reluctant to share their successful experiences with other persons for fear of
increased competition. The fisheries extension agent will have to judge which sources of information
are most appropriate.

2. Being Analytical

Although fisheries extension agents will have to work within the context of their duties and also with
the consent of their superiors, we have seen that there is a wealth of possibilities for the agent to
initiate fisheries extension or to support local level initiatives leading to fisheries extension activities.
But before the actual extension can take place, a lot of thinking will have to be done; this requires an
analytical attitude. The fisheries extension agent will have to pose him or herself many questions and
will have to discuss these with the potential clients.

Examples of such questions are the following. Is extension the best way to solve the identified
problem or to address the need? Are the problems not caused by reasons that cannot be solved by
extension only? What else has to be done? If extension is regarded a solution what will be the effects
on other people (will other people loose jobs, will some persons exploit the opportunities at the
expense of others, will there be resistance from certain groups in the community, etc, etc.)? Which
are the best extension methods? And what is the most sustainable way of getting the extension
activity organized?

Of course, not every little aspect of fisheries extension can be foreseen or anticipated, but the fisheries
extension agent should feel responsible for the fisheries extension activities and its effects in his or her
area.

3. Being Creative

Another attitude that can be highly beneficial when organizing cost and quality effective extension is
to be creative. As mentioned earlier, field officers often complain of their inability to do certain
activities because of lack of resources. It is indeed very difficult to conduct certain activities when the
required resources are not available or inadequate. But again there is a wealth of resources that can
be tapped at the local level.

In the first place, clients are normally willing to supply resources, such as: time; contributions for tea;
raw material available in the village; etc, when they are guaranteed of a high quality fisheries
extension service. The levels of contribution can be decided by mutual consent and special
arrangements can be made for participants who are unable to contribute certain resources. Some people may be short of financial or material resources, others may be short of time and there will be people short of both.

In the second place, resources, not necessary those of the clients, can be used or borrowed. Schools have chairs and blackboards, the church, mosque, temple, or community centre may have a good notice board. Also, there may be another ongoing programme in the village (community development, health or otherwise) that is willing to supply resources.

4. Obtaining Outside Support Services

The fisheries extension agent can only know part about the technical aspects of fisheries and fisheries related activities. It is very important to admit that one cannot know all and that, if the information is not available at the local level, external sources of information can be sought. The next chapter documents the places where fisheries extension agents might be able to find the information that they are looking for. Some organizations might even have provisions for sending resource persons who can explain and provide the information on the spot. Other organizations may have resource material or audio-visual aids available for use by the fisheries extension agent. Still, whatever outside support is obtained for conducting extension activities, including resource material, resource persons or trainers, the fisheries extension agent is the person responsible for all fisheries extension activities in his or her area.

Fisheries field officers have argued that they have too little authority towards other organizations to ask for their services. This again is a self-fulfilling attitude: as long as you do not make any requests, cooperate or communicate with other organizations, you will not be able to command any respect in doing so. Also you will not be able to generate any experience in knowing which organization is best to contact and in knowing the best ways to obtain their services. The best attitude is just to start and not to be too disappointed when you get negative responses initially.

For the fisheries extension agent to build-up skills in cooperating with organizations that can provide external resources, it is recommended to maintain a list of the organizations that have been contacted, the contact persons in these organizations, and the services that they were able to provide. Such a list is also very useful for the agent's successor who would otherwise have to build-up this experience again.

While the fisheries extension agent can, in many cases, take the initiative for obtaining the services of other organizations, the superiors will have to consent to this. Therefore, the agent should keep his or her superiors well informed about the actions taken. The superiors on their turn, can assist the agent when that is required and can support an exchange of information about ways to obtain outside services among the fisheries extension agents in their area, for example at the district level.
CHAPTER 7 TECHNICAL SUBJECTS FOR FISHERIES EXTENSION AND WHO TO CONTACT

Finding The Appropriate Information

There are many technical subjects for fisheries extension and for some subjects the developments go very fast. Hence the fisheries extension agent cannot possibly know all about all fisheries technical subjects. Therefore it is important to acknowledge this, and to search for the appropriate information elsewhere, if the need arises. For example, clients may like to obtain information about tuna resources in the Sri Lankan EEZ or about improved methods for fish processing.

The first place to search for information is in the fishing community itself. Fishermen and fisherwomen are experts in many practical technical subjects. Furthermore, information can be found at the district office or through discussions with colleagues. It would be ideal if the Ministry keeps the extension agents regularly informed about new fisheries developments. For example by issuing a monthly newsletter or by providing regular in-service training.

If it is not possible to find the appropriate information nearby, other resources can be contacted. In this chapter a list with organizations that could be contacted is given by fisheries technical subject. This list will not be complete, also because organizations change, new organizations may emerge and others may vanish. Therefore, the fisheries extension agent will have to complete and update this list.

The organizations mentioned can be contacted by phone, by writing or by visiting. It is recommended to phone the organization first to find out, whether the information required is available, and if so, who should be contacted and how. If the information is not available, somebody in the organization might know which other organization does have the information. It is important to be persistent!

Needs For Non-Fisheries Services

The fisheries extension agent who is working with fisherfolk in his or her area, will also be confronted with needs for non-fisheries services. People will often expect that the fisheries extension agent, being a government employee, will have sufficient contacts to arrange for other services as well. However, the more professional the agent approaches the field of fisheries and fisheries related activities, the more his or her clients will understand that that is exactly the field of assistance provided by the fisheries extension agent.

This does not mean that the fisheries extension agent should close his or her eyes for needs in the non-fisheries sectors. If the fisheries extension agent is sure that there is a real need for which outside assistance is indeed required, he or she could direct the need to the appropriate organization for assistance. There are many organizations that can provide services at the village level. Some of these services are, or at least should be regular, such as health services, other services have to be obtained on special request.

Here we will not list the organizations that can be contacted for non-fisheries services. However, it can be mentioned that a good office to contact is the Assistant Government Agent’s Office, from where many of the divisional services and special programmes are initiated. Here, a number of divisional officers have their office day once a week and in principle all official village societies are registered at this office. Other relevant organizations concerned with the well-being of the village can be contacted as well.
Organizations To Contact

Fishing Activities

Fish Resources
1. NARA : National Hydro-Graphical Office
   Marine Biological Resources Division
   Library
2. Department of Fisheries : Maritime Division
   Statistic Division
   Library
3. FAO library
4.
5.

Engines
1. Regional Fisheries Training Centres : engine instructors
2. Mechanical Engineering Assistants (who are either based at the District Fisheries Extension
   Officer's office or at the Department of Fisheries)
4. Village mechanics
5.
6.

Boat Building
1. CEYNOR
3. Regional Fisheries Training Centres : Engine instructors
4. Mechanical Engineering Assistants (who are either based at the District Fisheries Extension
   Officer's office or at the Department of Fisheries)
5. Village technicians
6. NARA : Engineering Division
7. BOBP publications
8.

Navigation and Seamanship
1. Sri Lanka Naval Training School
2. Sri Lanka Fisheries Training Institute : Lecturers
   Library
3. Regional Fisheries Training Centres : Fishing gear instructors
   Libraries
4. Shipping Corporation
5. Harbour Masters
6. FAO Library
7.
Fishing Gear and Fishing Methods (including net mending and repair and fish aggregating devices)

1. NARA: Fishing Gear and Technology Division
   Library

2. Fisherfolk

3. Regional Fisheries Training Centres: Fishing gear instructors
   Libraries


5. FAO Library

6. BOBP publications

7. Safety At Sea

1. Sri Lanka Naval Training School

2. Regional Fisheries Training Centres: Fishing gear instructors

3. Sri Lanka Fisheries Training Institute: Lecturers
   Library

4. FAO Library

5.

6. Fisheries Related Activities

Fish Handling (Ice Facilities)

1. Sri Lanka Standards Institution

2. Ceylon Fisheries Corporation

3. NARA: Institute of Post-Harvest Technology

4. Skippers of large fishing vessels

5. Private Ice Factories: See Annex 5.

6. Private Fish Transporters


8.

9. Fish Marketing and Exports

1. Sri Lanka Standards Institution

2. Sri Lanka Export Development Bureau

3. Sri Lanka Customs, Ministry of Finance

4. Ceylon Wholesale Establishment, Research Department

5. Ministry of Fisheries and Aquatic Resources, Planning Division

6.

7.
Fish Processing
1. NARA, Institute of Post-Harvest Technology
2. NARA, library
3. Regional Fisheries Training Centres - fishing gear instructors
4. Private Fish Processing Enterprises/Exporters (see list under fish handling)
5.
6.

Coast Conservation
1. Department of Coast Conservation, Ministry of Defence
2. Coast Conservation Act
3. National Environmental Authority
4. NARA, National Hydro-Graphical Institute
5.
6.

Social Schemes For Fishing Families
1. Department of Fisheries and Aquatic Resources,
2. Department of Agrarian Service for Fishermen’s Pension and Social Benefit Scheme
3.
4.

Fisheries Legislation and Territorial Use Rights
1. The Fisheries Act
2. Fisheries Regulations made under the Fisheries Ordinance
3. The Fisheries Act on Regulation of Foreign Fishing Boats and the Regulations made under it
4. Department of Fisheries and Aquatic Resources
5.
6.

Fisheries Education and Training
1. National Institute for Fisheries Training
2. Regional Fisheries Training Centres
3. Sri Lanka Fisheries Training Institute
4. University of Sri Lanka, Kelaniya Campus
5. University of Sri Lanka, Colombo Campus
6. University of Sri Lanka, Ruhuna Campus
7. University of Sri Jayawardena Pura
8.
9.
Fisheries Credit

1. Bank of Ceylon: Head Office – Agricultural Credit Department
   Branch Offices in the coastal districts
2. People’s Bank: Head Office – Fisheries Development Department
   Branch Offices in the coastal districts
3. Regional Rural Development Banks
4. Sanasa, Federation of Thrift and Credit Cooperatives
5.
6.

Documentation on Fisheries Available in Sinhala and/or Tamil

1. Fisheries Statistics, Statistical Branch, Ministry of Fisheries and Aquatic Resources
2. National Fisheries Development Plan, Planning and Programming Division, Ministry of Fisheries and Aquatic Resources
3. International Rules for Collision Avoidance of Vessels at Sea, National Institute of Fisheries Training, Ministry of Fisheries and Aquatic Resources
4. Navigation at Sea: fishermen’s handbook, National Institute of Fisheries Training, Ministry of Fisheries and Aquatic Resources
5. Course in net mending and repair, National Institute of Fisheries Training, Ministry of Fisheries and Aquatic Resources
7. Preparation of Maldive Fish, pamphlet, NARA Institute of Post-Harvest Technology
8.
9.
REFERENCES


Huizinga, B. 1990. Lecture Notes during the Fisheries Extension Consultation Medan, Indonesia, organized by the Bay of Bengal Programme, Food and Agriculture Organization of the United Nations. Mimeo.


ANNEX 1. PROBLEM ANALYSIS FORM  
(Source: DTCP/UNDP Course in Production of Publications, 1990)

<table>
<thead>
<tr>
<th>(A) Key Problems</th>
<th>(B) Causes of (A)</th>
<th>(C) Groups Responsible for (B)</th>
<th>(D) Behaviour of (C) which results in (B)</th>
<th>(E) Factors necessary to correct (B)</th>
<th>(F) What extension can do to correct (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ANNEX – 2

### REGISTERED MARINE ENGINE COMPANIES – 1992

<table>
<thead>
<tr>
<th>Name of the Company</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. General Marine Equipment (Pvt) Ltd. (Mariner)</td>
<td>18, Greens Road. Silverton Building Negombo.</td>
</tr>
<tr>
<td>6. United Tractor Equipment Ltd. (Evinrude)</td>
<td>447, Union Place. P.O. Box 343 Colombo.</td>
</tr>
</tbody>
</table>

**Source** Fisheries Statistics of Sri Lanka 1992. MOFAR
## ANNEX – 3

### REGISTERED BOATYARDS – 1992

<table>
<thead>
<tr>
<th>Name of Boatyard</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Kumari Boatyard</td>
<td>Mr. K. F. H. Peiris 32, St. Jude’s Place, Thaladuuwa, Negombo.</td>
</tr>
<tr>
<td>5. J. M. Boatyard</td>
<td>Mr. J. M. Kure 135/5, St. Nicholas Road, Munnakkaraya, Negombo.</td>
</tr>
<tr>
<td>6. St. Michal Boatyard</td>
<td>51/9, Ragina Road, Munnakkaraya, Negombo.</td>
</tr>
<tr>
<td>7. Cey-Nor Foundation Ltd.</td>
<td>15, Rock House Lane, Mutuwai, Colombo 15.</td>
</tr>
<tr>
<td>8. New Kumari Boatyard</td>
<td>Regina Road, Munnakkaraya, Negombo.</td>
</tr>
<tr>
<td>9. V. J. Boatyard</td>
<td>Mr. M. J. M. Fernando C 5, Duuwa, Negombo.</td>
</tr>
<tr>
<td>10. Diyakawa Boatyard</td>
<td>5, Katukurunda, Moratuwa.</td>
</tr>
<tr>
<td>Name of Boatyard</td>
<td>Address</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>11. Sithumina Boatyard</td>
<td>Bandarawatte, Beruwala.</td>
</tr>
<tr>
<td>12. Taos Yatch Co. Ltd.</td>
<td>P.O. Box 843, Colombo 2.</td>
</tr>
<tr>
<td>13. Consolidated marine Engineer's Ltd.</td>
<td>101, Kew Road, Colombo 2.</td>
</tr>
<tr>
<td>15. Nirosh Boatyard</td>
<td>Mr. G. V. Dhanasiri Athigewatte, Patuwatha, Negombo.</td>
</tr>
<tr>
<td>17. W. D. Aloysius Boatyard</td>
<td>Mr. W. D. Aloysious 24, Luwris Place, Negombo.</td>
</tr>
<tr>
<td>18. Onivi Combine Ltd.</td>
<td>38, Katunayake.</td>
</tr>
<tr>
<td>19. Sakura Marine</td>
<td>Thotupala Road, Tangalle.</td>
</tr>
<tr>
<td>20. Sea Lion Boatyard</td>
<td>Chilaw.</td>
</tr>
</tbody>
</table>

**Source** Fisheries Statistics of Sri Lanka 1992 MOFAR.
ANNEX – 4

FISHING NET COMPANY
(Registered with the Ministry of Fisheries and Aquatic Resources)

J. B. Fishing Industries
Cey-Nor Foundation.
Ocean Traders.
# ANNEX – 5

## OPERATING ICE PLANTS IN SRI LANKA 1992

<table>
<thead>
<tr>
<th>No</th>
<th>Province</th>
<th>District</th>
<th>No</th>
<th>Name of Ice Plant and Address and Location</th>
<th>Capacity Per Day Ton</th>
<th>Year of Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Western Province</td>
<td>Gampaha</td>
<td>1</td>
<td>C.F.H.C Ice Plant (on lease to pvt) Negombo, Nallawatta.</td>
<td>5.0(F)</td>
<td>1977</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>2</td>
<td>River Side Ice Factory No. 1, Negombo Road, Wattala.</td>
<td>10.0(B)</td>
<td>1982</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>3</td>
<td>Marine Food &amp; Services Ltd. 507, Chilaw Road, Kattuwa, Negombo.</td>
<td>50.0(B)</td>
<td>1979</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>4</td>
<td>Ceylon Sea Foods (Exports) 365, Negombo Rd. Kurana, Negombo.</td>
<td>5.0(B)</td>
<td>1978</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>5</td>
<td>Quick Freeze Ltd., 98, Kollupitiya Lane, Colombo-3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>6</td>
<td>Tropic sea Company Thammita Road, Wattala, Negombo.</td>
<td>10.0(B)</td>
<td>1981</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>7</td>
<td>Incosyn Group 518, Negombo Road, Wattala.</td>
<td>15.0(B)</td>
<td>1983</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>8</td>
<td>Kube Ice (Pvt) Ltd., No. 9, New Road, Hunupitiya, Wattala.</td>
<td></td>
<td>1991</td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
<td>9</td>
<td>Lanka Ice (Pvt) Co.,</td>
<td></td>
<td>1990</td>
</tr>
<tr>
<td>(2)</td>
<td>Colombo</td>
<td></td>
<td>10</td>
<td>Ceylon Cold Storage Ltd., P.O. Box 220, Colombo-2.</td>
<td>64.0(B)</td>
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<td>Pirefin Ltd., 98, Reclamation Road, Colombo-11.</td>
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<td>Piersons Ltd., 100, Reclamation Road, Colombo-11.</td>
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<td>C.F.C. Ice Plant., Rock House Lane, Colombo-15.</td>
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<td>Ocean Foods &amp; Trades Ltd., 50, Kelaniganga Mills Rd., Mattakkuliya.</td>
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<td>Pure Beverages Ltd., D.R. Wijewardana Mawatha, Colombo-10.</td>
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<td>Kalutara</td>
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<td>Industrial &amp; Commercial Syndicate Ltd., 90, St. Sebastian Road, Katukurunda.</td>
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<td>Incosyn Group No. 46, Mungalan Road, Beruwala.</td>
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<td>CFHC Ice Plant Beruwala.</td>
<td>10.0(F)</td>
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<td>No</td>
<td>Province</td>
<td>District</td>
<td>Name of Ice Plant and Address and Location</td>
<td>Capacity Per Day Ton</td>
<td>Year of Construction</td>
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<td>C.F.C. Temple Road, Ambalangoda.</td>
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<td>Incoysin Group No. 634, Palana, Weligama.</td>
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<td>Sea Ice Co Ltd., Mirissa.</td>
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<td>CFHC Ice Plant., (on lease to Pvt) Dondara, Puranawella.</td>
<td>5.6(B)</td>
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<td>Hambantota</td>
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<td>C.F.H.C. Ice Plant Tangalla.</td>
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<td>Fisheries Ministry Ice Plant (Under Norad Aid) Muhudu Mawatha, Hambantota.</td>
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<td>North West: Puttalam Province</td>
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<td>C.F.C. Ice Plant Battuluoya.</td>
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<td>Chilaw</td>
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<td>St. Annes Ice Plant Marawila.</td>
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<td>C.F.H.C. Ice Plant (On Lease to Pvt.) Chilaw.</td>
<td>05(B)</td>
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<td>C.F.C. Ice Plant Wellamankara. (Delta fresh), Nainamadama.</td>
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<td>St. Theressa Ice Plant Talawila, Marawila.</td>
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<td>East Coast Ice Suppliers Puttalam Road, Bangadeniya.</td>
<td>25(B)</td>
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<td>Shamrock Ice Plant Wennappuwa.</td>
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<td>District No</td>
<td>Name of Ice Plant and Address and Location</td>
<td>Capacity Per Day Ton</td>
<td>Year of Construction</td>
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<td>(4) North Cent: (9) Anuradapura Province</td>
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<td>C.F.C. Ice Plant New Town, Anuradapura.</td>
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<td>C.F.C. Ice Plant Minneriya.</td>
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</table>

B - BLOCK    F - FLAKE

ANNEX – 6

LIST OF FISH PROCESSING PLANTS AND EXPORTERS OF MARINE PRODUCTS
(Registered with the Ministry of Fisheries and Aquatic Resources)

<table>
<thead>
<tr>
<th>Name and Address</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRAWNS, LOBSTERS AND CUTTLE FISH</strong></td>
<td></td>
</tr>
<tr>
<td>Andries &amp; Co. Ltd., 39, Nuge Road, Peliyagoda.</td>
<td>530021-2</td>
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<tr>
<td>Beskorts Ltd., 18/5, Weliamunna, Hekitta, Wattala.</td>
<td>32346, 39042 (Office) 530769 (Factory)</td>
</tr>
<tr>
<td>Boncours Ltd., 465/3, K. Cyril C. Perera Mawatha, Colombo 13.</td>
<td>546020</td>
</tr>
<tr>
<td>Ceylon Sea Foods Ltd., 96, Main Street, Colombo 11.</td>
<td>26552</td>
</tr>
<tr>
<td>Ceylon Marine Food Exports Ltd., 23, Canal Road, Colombo 1.</td>
<td></td>
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<tr>
<td>Exporcare (Ceylon) Ltd., P.O. Box 53, 18 1/1, Charlemont Road, Colombo 6.</td>
<td>580759</td>
</tr>
<tr>
<td>Fresh Sea Food Exporters Pre. Ltd., (Factory) 298, Dutch Canal Road, Dickowita, Hendala, Wattala.</td>
<td>530769 530723 (Office)</td>
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<tr>
<td>Oceania Exports Ltd., 100, Reclamation Road, Colombo 11.</td>
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<tr>
<td><strong>SHARK FINS</strong></td>
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<tr>
<td>Brittor Ltd., 96, Alwis Place, Colombo 13.</td>
<td>35078</td>
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<tr>
<td>Ceylon Agro-Oceanic Food Exports 335 A. Main Street, Negombo.</td>
<td>031-3267</td>
</tr>
<tr>
<td>Marshal Exports &amp; Imports, 117/2, Fourth Cross Street, Colombo 11.</td>
<td>26728</td>
</tr>
<tr>
<td>Name and Address</td>
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</tr>
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<td>------------------</td>
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<tr>
<td>Stassen Exports Ltd., 833, Sirimava Bandaranayake Mw., Colombo 14.</td>
<td>34045/6</td>
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<td><strong>SHARK LIVER OIL</strong></td>
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<tr>
<td>Boncours Ltd., 465/3, K. Cyril C. Perera Mw., Colombo.</td>
<td>546020</td>
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<tr>
<td>Colonial Exporters, 10, Arunachalam Avenue, Off Horton Place, Colombo 7.</td>
<td>91768</td>
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<tr>
<td>Hideki Ltd., 12, Galle Face Court, P.O. Box 684, Colombo 3.</td>
<td>35000 / 557481</td>
</tr>
<tr>
<td>Premadasa &amp; Co., 20, Duke Street, Fort, Colombo 2.</td>
<td>548723</td>
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