Poverty and Aquatic Resources in Vietnam:

an assessment of the role and potential of aquatic resource management in poor people's livelihoods

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1 Introduction

1.1 Why investigate poverty and aquatic resources in Vietnam

In Vietnam, the resolutions of the Party Congresses VII, VIII and the Decree of the Party Central Committee defined that: in parallel with economic development and growth, Vietnam must concentrate on Hunger Eradication and Poverty Reduction. The resulting Hunger Eradication and Poverty Reduction (HEPR) programme under the Ministry of Labour, Invalids and Social Affairs (MOLISA) has been recognised in Vietnam and internationally as a successful framework for poverty reduction. Over the last 10 years many policies, institutional changes, programs, projects and plans have been put in place to promote agriculture and rural development, build up irrigation systems, strengthen credit policy, support marketing of products and generally to increas living standards especially for the poor.

The strategy for 2001-2010 is to expand the poverty alleviation content of HEPR, based on new poverty line definitions, to eradicate hunger and inact policies that encourage communication of appropriate technologies, strengthen and diversify capital assets and reduce vulnerability of the poor. Inter-ministerial co-operation is coordinated by MOLISA with each line ministry responcible for formulation of policy and the mechanism by which it is implimented and to provide implementation guidence at the local level. (MOLISA, 2000)

The Ministry of Fisheries (MoFI) played a limited role in the first decade of the HEPR programme. Its focus was more on industrial and commercial scale development especially of aquaculture.

The mechanism and dialogue with government to follow through work on poverty analysis into policy development

This year, in support of the Government objectives for poverty alleviation, the Ministry of Fisheries (MoFI) hosted a Scoping Meeting on "Sustainable Aquaculture for Poverty Alleviation" (SAPA), in Hanoi from the 23rd-25th May 2000. The meeting was held to review the role of aquaculture development (in freshwater, brackish water and marine environments) in poverty alleviation and hunger eradication in Vietnam, to identify strategies for the more effective application of aquaculture and aquatic resources management to poverty alleviation, to review a draft framework for a programme on sustainable aquaculture for poverty alleviation (SAPA) and to prepare an appropriate action plan to follow on from the meeting.

The meeting was attended by 100 representatives from MoFI, Ministry of Planning and Investment (MPI), MOLISA, Ministry of Agriculture and Rural Development (MARD), as well as provincial government agencies, people's organisations international organisations and donors including NORAD who provided most of the funding for the meeting, DANIDA, ACIAR, UNDP and FAO. DFID played a key role in planning and facilitating the meeting.

The meeting identified key issues, including: the need to build a poverty-oriented approach to policy involving better understanding of livelihood goals of poor people as a basis for identifying aquaculture interventions; the poor technical knowledge-base amongst practitioners, weak capacity among institutions at all levels, poor infrastructure and the importance of cooperation among agencies involved in implementing and

supporting poverty alleviation through aquaculture (SAPA Scoping Meeting Proceedings, 2000).

Leading on from the meeting and based on its recomendations an action plan was proposed. This included: to report and publish the 'scoping meeting'; to analyse existing information on poverty and aquatic resources in Vietnam to identify key areas where there are significant numbers of poor people whose livelihoods benefit or could benefit from aquatic resource use (this report), (as the basis for selecting sites for livelihood analyses and more broadly to inform the development of the SAPA strategy); to conduct livelihood analyses with poor people who benefit from aquatic resources in a number of inland and coastal areas to provide a better understanding of different social and environmental contexts; and to prepare with the Ministry of Fisheries a "strategy" paper for submission to the Prime Ministers office in September prior to budget planning for poverty alleviation by MPI.

The strategy paper would provide a clear synthesis of the rationale for a fisheries policy focus on poverty alleviation, a detailed description of the participatory process and principles to be followed for implementation, and an action plan to implement the strategy informed by on-going analyses. Institutional arrangements and potential partnerships including between different projects/donors would also be included as well as requirements for MoFI to co-operate closely with MOLISA, VWU & MARD.

Provisional agreement was reached at the scoping meeting between NORAD, DANIDA, ACIAR, DFID and UNDP to collaborate and share resourcing of activities with MoFI over the next months, with the details to be planned with MoFI. DFID commisioned and co-ordinated with local specialists this report and DFID ARMP manager was invited by the MoFI to join an 8-person Task Force, under the overall direction of the Vice-Minister, to assist the MoFI in preparing the SAPA strategy framework (including MOFI, Research Institute for Aquaculture 1 (RIA-1), AIT Outreach (SIDA), NACA, NORAD). A Task Force Resource Group comprising 12-14 members from different agencies and organisations supported the Task Force (including MoFI, MOLISA, MARD, RIA-1, DANIDA, FAO, NORAD, ACIAR).

1.2 How the investigation was undertaken

This report reviews a range of secondary data in order to present an assessment of poverty and a discussion of the role of aquatic resources, both capture fisheries and aquaculture in rural people's livelihoods in Vietnam. It is intended that the report will provide a basis for future planning of poverty-focused initiatives that incorporate aquatic resources.

DFID Aquatic Resource Management Programme in SE Asia co-ordinated the review, which was carried out in conjunction with Bui Thi Thu Ha, Pham Minh Tam, Nguyen Xuan Suc, Trinh Quang Tu of the Research Institute for Aquaculture-1 (Hanoi), Ton That Chat and Le Van Mien of the University of Hue, Vo Ngoc Tham and Nguyen Van Bang of the University of Fisheries Nha Trang, Nguyen Van Tu and Le Cong Tru of the University of Agriculture and Fisheries and Tran Dac Dinh and Duong Nhut Long of the Can Tho University. The review began with a workshop held at the Research Institute for Aquaculture 1 in Hanoi between July 18 and 20th. Three weeks were spent gathering, analysing and summarising available secondary data for each of the seven regions of Vietnam with a final workshop held at RIA-1 between August 17 and 19th.

2 An analysis based on secondary information of poverty in Vietnam

2.1 Introduction

There are many dimensions to poverty. People are poor in different ways, with different characteristics, causes and effects. In order to plan for poverty alleviation it is important to disaggregate the concept of poverty and categories of 'the poor'. A huge diversity of aquatic resources supports the livelihoods of poor people in a wide range of ecological settings from coastal and marine fisheries, floodplain, rivers, reservoirs and lakes, rice fields and backwater swamps. The role of aquatic resources in poor people's livelihoods differs considerably throughout Vietnam.

It was originally intended that this report would identify different dimensions of poverty in Vietnam, and also identify specific areas (at district or commune level) where there are significant numbers of poor people whose livelihoods are dependent on aquatic resources. That this has not been possible from secondary sources is an indication of the orientation of those conducting poverty analyses and the lack of engagement with the poor by the Fisheries sector in Vietnam. The former is clearly an issue that needs to be addressed in future poverty analyses; the later is now a key concern for the Ministry of Fisheries.

Supplementary reports have been prepared for each of the regions by the Vietnamese teams. These are attached unedited as appendices. The regions covered are as follows:

- Northern Uplands completed by RIA-1,
- Red River Delta completed by RIA-1,
- North Central completed by the University of Hue,
- South Central and Central Highlands completed by the University of Fisheries,
- South East completed by University of Agriculture and Fisheries
- Mekong Delta completed by Can Tho University.

These supplementary reports identify poor districts and in some cases communes, largely on the basis of a limited range of official assessments of poverty. However, they do not provide detailed assessments of why people are poor in these areas, nor do they identify areas in which poor people utilise aquatic resources. Information on aquatic resources is largely confined to aquaculture, with an emphasis on discussions of water surface areas and types of production. There is virtually no information on the small-scale wild fisheries in streams, rice fields, flooded forests, flood plains and back water swamps that other limited evidence suggests is of such importance to poor people. However, when combined with more detailed assessments of aquatic resources these supplementary reports facilitate targeting of further studies, and ultimately of poverty-focused aquatic resource interventions.

2.2 Overview of Poverty in Vietnam

Poverty has declined in Vietnam, as indicated by rising per capita expenditures and improving social indicators (see GSO Vietnam Living Standards Survey 1998), and assessments of poor people's own perceptions (see PWG 1999, Action Aid 1999, Oxfam 1999, Save the Children 1999). The majority of poor people are in rural areas, with a widening gap between rural and urban areas. According to DFID (1998) 80% of the population of Vietnam and 90% of poor people are in rural areas. However, incidences of poverty persist in some urban areas. Poor people lack access natural resources particularly to land, and to good quality land – defined by poor people according to a range of criteria for example, soil type, slope, and access to irrigation. Significantly access to aquatic

resources is not well covered in these reviews. Poor people tend to be excluded from, or less able to access development initiatives, for example credit programmes and are excluded from the decision-making process. Poor people remain vulnerable to natural disasters and degradation of natural resources, as well as health crises (see UN 1998 and DFID 1998). Minor shocks can have devastating long-term effects on poor people's livelihoods. Poverty is manifest in a wide variety of forms with poor households displaying a range of characteristics (see Appendix 1).

This report purposively seeks to discuss a variety of approaches to poverty in order to illustrate the diversity of poor people, and the range of ways in which people are poor, facilitating a broader understanding of poverty and the significance of aquatic resources in poor people's livelihoods. This is intended to provide a balance to the general neglect of the poor in the pursuit of aquaculture development within the Fisheries sector. It is also intended that this approach to poverty will assist in the planning and targeting of aquatic resource interventions that aim to promote poverty alleviation.

In its many different forms, poverty remains a persistent problem with a great number of people facing deprivation and vulnerable livelihoods. Rates of poverty alleviation also differ; whereas the Red River Delta has achieved the greatest reductions in poverty, the Mekong Delta has achieved the smallest improvements, with possible indications that inequality has increased (see 2.4). Inequality between regions persists despite progress in all regions.

2.3 The indicators of Poverty and its geographical distribution

The studies of poverty that are reviewed in this report adopt numerous indicators of poverty based on income, expenditure and minimum needs. By applying different indicators the geographical incidence of poverty can differ quite considerably. The UN (1998) presents a discussion of different measures of poverty comparing four indicators of poverty as applied in each of the regions of Vietnam. In addition to household expenditure these are:

- 'The hungry poverty line' applied by the Ministry of Land, Invalids and Social Affairs (MOILSA) which defines poverty as being below 25 kg of rice per capita per month in urban areas, rural households in lowland/midland areas as 20kg, and in highland areas as 15kg. By these definitions MOLISA poverty declined from 22% in 1994, to around 20% in 1995 and 19% in 1996.
- The 'very poor' or 'starvation line' (as applied by the General Statistics Office) based on the income required to secure a daily calorie intake of 2100 per capita. Based on 1993 prices these are defined as 50 000 VND for a rural poverty household, 30 000 VND for a 'very poor' or 'starving' rural household, and 70 000 VND for a poor urban household.
- The basic needs poverty line (as applied by the World Bank) based on the 2100 calorie intake criterion but includes assessment of the income required to meet non-food basic needs such as education, health care, travel and cultural expenses.' Assessments of poverty according to region are illustrated in Table 1.

Table 1: Poverty households in rural areas of Vietnam by region 1992/3

Major Regions	Average Household Consumption Expenditures (VND 000 pa)	Poverty Line ('Hungry') Households (less than VND 600 th.) %	Very Poor ('Starving') Households (less than VND 360 th.) %	Basic Needs Deficit Households (less than VND 1.1 m) %
North Central Coast	974	26.4	5.1	70.9
Northern Uplands	1 007	28.8	5.2	58.6
Central Highlands	1 159	34.7	7.7	50.1
Red River Delta	1 349	15.9	2.7	49.0
South Central Coast	1 457	19.6	4.1	48.5
Mekong River Delta	1 506	18.5	5.4	42.7
South East	2 008	14.0	3.0	32.8
Vietnam	1 373	22.3	4.4	50.9

(Source: UN 1998)

The highest incidence of poverty occurs in the Central Highlands according to the Poverty Line and Very Poor assessments whereas the North Central Region records the highest Basic Needs deficit (70.9%) compared to with 50.1% in the Central Highlands. The Red River Delta has a Basic Needs Deficit (49.0%) similar to the Central Highlands but a far lower incidence of poverty according to the Poverty Line and very Poor. Although the Mekong Delta has one of the lower percentages of households categorised as 'hungry' (18.5%) it records the second highest as 'starving' (5.4%).

The recent Poverty Working Group (1999) report accords with UNDP (1998) identifying the poorest regions as the Northern Uplands, the Central Highlands and North Central Coast with poverty deeper in the Northern Uplands. However, the distribution of poverty is slightly different according to national government assessments of Hunger Eradication and Poverty Reduction (HEPR) and Government Statistics Office (GSO). According to HEPR'the poorest area is the North Central region with the poverty incidence at 71% (followed by) the Northern Uplands region, with the poverty incidence of 59%. These two regions account for about 40% of all the poor in Vietnam, even though they contain just 19% of the population. The lowest incidence of poverty, 33%, is found in the Southeast.'

The GSO regional rankings of poverty 'identifies the Central Highlands as the poorest (30%), followed by the North Central and Northern Uplands (25%), Mekong Delta (18%), Central Coast (18%), Red River (14%) and the Southeast (11%).' The ranking of poor regions and the incidence of poverty in each region differ, at times significantly. Although DFID accord much weight to Participatory Poverty Assessments and the joint working of the PWG as the way forward, NORAD in particular has strongly supported the utilisation of national statistics. Statements from provincial and central government representatives at the Second Sustainable Aquaculture for Poverty Alleviation Strategy Working Group meeting favoured the use of new MOLISA poverty assessments being adopted by HEPR. However, as the PWG (1999) suggests regional assessments can mask the extent of poverty within regions. In terms of the Poverty Gap Index, the depth of poverty is greatest in the Northern Uplands and Central Highlands, followed by the Coastal regions (table 2).

Table 2: Regional concentration of poverty in Vietnam, 1998

Region	Population (millions)	Share of Population (%)	Contribution to Total Poverty (%)	Poverty Gap Index (Depth of poverty)
Northern Uplands	13.5	18	**28**	**16.8**
Red River Delta	14.9	20	**15**	**5.7**
North Central	10.5	14	**18**	**11.8**
Central Coast	8.1	11	**20**	**10.6**
Central Highlands	2.8	4	**5**	**19.1**
South East	9.7	13	**3**	**1.3**
Mekong Delta	16.3	21	**21**	**8.1**
All Vietnam	75.8	100.0	**100.0**	**9.5**

(Source: PWG 1999 derived from World Bank estimates based on VLSS98)

Although different poverty indicators are commonly used to categorise the wealth status of geographical regions, clearly our interest is with people who are poor, not poor regions.

The use of specific cut off points for assessments of poverty, such as 2100 calories/capita/day or specific income requirements to meet nutritional needs is somewhat arbitrary. Nutritional requirements are not constant for all people, and the variety of foods needed and available to meet nutritional requirements also differs. Slight adjustments in the indicators applied lead to significant changes in the extent and incidence of poverty recorded. In Vietnam, a large number of people lie just above the poverty line, and a relatively small deterioration in living standards would be sufficient to push them below the poverty line again. (NEW CATEGORIES are currently being introduced by MOLISA). Equally, there is a considerable range within the category of people that fall below the poverty line, with some only just below while others are more deeply entrenched. Assessments of poverty that only consider changes in numbers from poor to non-poor may overlook the conditions, causes and effects of those that remain 'poor'. This is significant when addressing the role of aquatic resources in poor people's livelihoods.

Poor people's own perceptions of what constitutes poverty and who is poor also vary. When asked to classify households in their village according to four criteria ('well-off', 'average', 'poor' and 'hungry') groups of women, men and elders provide quite different proportions. Similar differences in perceptions of poverty can be expected with groups of people from different socio-economic levels.

2.4 Land holdings

Although the distribution of land in Vietnam has been achieved with equity, high population density in some areas has left households with very small land holdings. The subsequent loss or sale of landholdings by some and consolidation by others may may represent divergent livelihood goals or may indicate a problem of growing inequity (see Table 3). According to many criteria the Mekong Delta is one of the wealthier regions as is the South East, however the socio-economic status and vulnerability of a growing number of landless (currently 21% and 28.7% respectively) is currently unclear.

Table 3: Percentage of rural households without allocated or swidden land

Region	1993	1998	Average Farm Size (m^2) in 1998
Northern Uplands	2.0	3.7	8890
Red River Delta	3.2	4.5	6491
North Central	3.8	7.7	5001
Central Coast	10.7	5.1	5180
Central Highlands	3.9	2.6	13746
South East	21.3	28.7	13712
Mekong Delta	16.9	21.3	10650
All Vietnam	**8.2**	**10.1**	**8148**

(Source: PWG 1999 - Original source World Bank estimates based on VLSS93 and VLSS98)
Note: *The above estimates are for households with no annual or perennial cropland, water surface, forest, swidden or other land. Land that is borrowed or rented is excluded.*

It is clear however, that average landholdings increase with expenditure quintile. This is particularly the case for perennial crop land with the poorest quintile average holdings less than a fifth of that of the richest quintile (see Table 4).

Table 4: Landholdings (m^2) for all households with agricultural land by quintile

Area of landholdings	Expenditure Quintile				
	I (poorest)	II	III	IV	V (richest)
All land	6473	6953	7138	6928	9856
Annual crop land	3600	3928	4625	4414	5081
Perennial crop land	613	845	1016	1485	3527

(Source: GSO and World Bank estimates based on VLSS98)
Land holdings includes land rented out but excludes land rented in.

2.5 Poverty according to health and nutrition criteria

Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue their livelihood objectives. Good health and appropriate nutrition are fundamental to the use of other capital assets. Assessments of nutrition are important for targeting aquatic resource interventions, particularly to address malnutrition, vitamin A and iodine deficiencies[1].

The FAO Nutrition Country Profile (1999) report looks at health and nutrition criteria as an indication of poverty. It identifies several aspects of poor health and nutrition, including: Poor nutritional status of pregnant women, over 50% of births outside health facilities, and even higher rates in rural areas, and high incidence of Chronic Energy Deficiency (CED) and anaemia. A 1997 survey showed that the Red River Delta was the most affected region with 46% of the women aged 15-49 years with a BMI less than 18.5 kg/m whilst in the Mekong River Delta region, had the highest prevalence of severe CED (BMI < 16.0 kg/m) the Central Highlands suffers from high rates of malnutrition.

According to WHO (1999) as many as 125 million children are currently at risk of Vitamin A deficiency (VAD) in S E Asia. Though the countries in the Region have launched short-term VAD prevention programmes, such as supplementation with vitamin A capsules, according to WHO a more sustainable solution would be to encourage dietary diversification and ensure higher dietary intake of vitamin A-rich foods, such as fish. In Vietnam, vitamin A deficiencies exist in all regions but high incidence in South Central Coast followed by the Midlands.

[1] Fish and other aquatic products play an important role in health and nutrition; they are widely in demand and not easily substituted.

A survey by UNICEF and the Endocrine Institute identified 94% iodine deficiency in a random sample of 3062 schools in Vietnam. According to Professor Ha Huy Khoi (Director National Institute of Nutrition, 1996) iodine deficiency is serious and widespread. Significant iodine deficiency is found in mountainous and highland regions[2] where the population generally consists of ethnic minorities. About ten million Vietnamese, which live in these regions, are threatened by iodine deficiencies. Nearly 35% of mountain population suffer goitre morbidity (National Institute of Nutrition, Hanoi, 1996).

3 An analysis based on secondary information of the role of aquatic resources in the lives of poor people in Vietnam

3.1 Introduction

Aquaculture production has increased dramatically in Vietnam but often has not been open to poorer rural peoples. Poorly resourced extension agencies have been pressured to meet production targets rather than meet poverty alleviation objectives. Consequently the poor have not been targeted (see Demaine 2000). There is some indication that in the more intensive aquaculture production systems such as coastal shrimp production that inequality has intensified, with wealth from shrimp production being concentrated in a few hands competing over finite coastal resources leading to displacement of poor people (see Adger 1998, Oxfam 1999). In marine cage culture there are also reports of competition between artisanal fishers and aquaculturalists claiming the same water areas (see Aasen 2000).

In many contexts aquatic resources are considerably under threat from environmental degradation, over exploitation and poor management practices. For example, MOPI/UNDP (1999) refers to coastal degradation, threats to freshwater fishery resources. Discussions above have indicated that fishers tend to be poor. Degradation of fishery resources can clearly be anticipated to have a significant impact on such people. As wild fisheries also constitute an important safety net, and a resource for landless and displaced people, further degradation will further limit the opportunities of these people.

3.2 The limited dataset

Secondary data on aquatic resource use by poor people is limited due to the nature of aquatic resources and the livelihood strategies in which they play a role. Their significance is often overlooked in official data; both within the fisheries sector (as evidenced by the scarcity of data relating to poverty and aquatic resources) and also within poverty alleviation strategies. Recent poverty analysis studies and the national socio-economic statistics do not provide specific data on fisheries and aquaculture.

For example:

- production data in the Vietnam Living Standards Survey (VLSS) combines livestock and aquaculture but does not include capture fisheries, and does not break down the various types of aquaculture production. Lack of data on small-scale fisheries is an issue throughout SE Asia. This is partly due to the diversity and dynamism of the resource system itself and the inherent difficulties in assessing production. Although there are large numbers of people who are involved in fishing as a primary occupation, there is an even larger number of people who are involved in fishing as an irregular, seasonal or opportunistic manner as

[2] Fish are currently 40-60% higher price in mountains compared to Hanoi.

components of wider diverse livelihoods. Since much of the production from small-scale fisheries is for household consumption it is often excluded from national statistics. There are similar problems with income data for small-scale aquaculture and capture fisheries.

- The Poverty Working Group (PWG) (2000) only mentions the nutritional value of aquatic resources, small shrimps and crabs, without any further discussion. Although no discussion of the importance of aquatic resources is presented in the PWG report, it is strikingly apparent that in terms of weight, aquatic resources are the major source of animal protein. A comparison of animal sources of protein is provided in table 5.
- Poverty focused projects operating in areas in which aquatic resources are of particular significance have also neglected the potential of aquatic resource management strategies (for example, the current Central Region Poverty Reduction Project).

While there is evidence to indicate that those most dependent on aquatic resources tend to be those without access to land resources or alternative livelihood sources, there is also evidence to indicate that the poor have been largely excluded from aquaculture development. Much of the data on aquaculture discusses the production and income benefits brought about by aquaculture, but with far less discussion of the status of those involved. Similarly, research interest in wild capture fisheries are mainly concerned with providing data on production with less concern with the socio-economic status of those utilising the resource.

The Participatory Poverty Assessment conducted in Ha Thinh (Action Aid 1999) provides some indication of the vulnerability of fishing households. For example, dependency on depleted fishery resources is presented as a cause of poverty in one coastal commune, while the ability to find alternative income is presented in a case-study discussion as a way out of poverty. Aasen's (2000) study of coastal fishing villages suggests poorer households are those most dependent on fishing.

The evidence regarding the nutritional value of aquatic resources in poor people's livelihoods is somewhat contradictory. PWG (1999) presents a basket of food items that yields the required 2100 calories per day, and the weight (in kilograms) of those food items consumed.

Table 5: Vietnamese basket of food items that yields 2100 calories per day

Food Item	Quantity Consumed*	Adjusted Quantity (2100 cal)
Ordinary rice	159	169.6
Glutinous rice	5.5	5.9
Maize	2	2.1
Cassava	8.8	9.4
Potato, sweet potato	10.7	11.4
Pork	4.9	5.2
Beef	0.1	0.1
Chicken	2.1	2.3
Duck, other poultry	0.7	0.7
Other meat	0.2	0.2
Processed meat	0.04	0.04
Eggs	0.4	0.4
Fresh fish, shrimp	**10.3**	**11**
Dried fish, shrimp	**0.7**	**0.7**
Fish sauce	**5.6**	**6**
Tofu	2.9	3.1
Water morning glory	14.1	15
Kohlrabi	5.6	6
Cabbage	5.6	5.9
Other vegetables	14.2	15.2

Adapted from PWG 1999 (see PWG for a detailed discussion of the methodology applied for the calculation of the Basket of Food Items).
(*Kilograms consumed per year)

This data clearly reveals that in terms of weight the quantities of fish and shrimp consumed, (fresh and dried, and fish sauce) are far higher than all other animal proteins. Yet it is startling that this is not discussed in the text of the PWG report, and that other reports such as AIT Aquaculture Outreach Programme on consumption of fishery resources in Plain of Reeds overlook or underestimate the significance of aquatic resources.

A more detailed assessment of VLSS data indicates the relative importance of aquatic resources for poor people, in comparison with other groups. For the poorest quintile fish closely follows meat as the second source of animal protein in the Northern Uplands and the South Central Coast. However for the other regions, the Red River Delta, the North Central Coast, the Central Highlands, the Southeast and the Mekong Delta fish is the main source of animal protein. However, the percentage of family expenditure on fish is far lower proportionately than that spent on meat. For all regions there is a clear trend that meat becomes the main source of protein for the higher quintiles.

Historical evidence indicates that those most dependent on aquatic resources are those that have been displaced from land-based agricultural activities; this is especially true in coastal areas. Aquatic resources including wild fisheries, both inland and marine, provide a valuable source of income and nutrition for many poor people, and constitute an important component of diverse and dynamic livelihood strategies in a variety of agro-ecological settings throughout Vietnam. Small-scale artisanal fisheries are identified as particularly poor and vulnerable groups; though an even larger but significantly less visible number of poor people depends on inland capture fisheries as a component of wider livelihood strategies.

3.3 Illustrating the role of aquatic resources through the livelihoods framework

It is unfortunate that current approaches, which emphasise the diversity of poverty drawing on a range of indicators, while advocating the need for holistic approaches to poverty alleviation, have not emphasised aquatic resources use. It is within this type of framework that the role of aquatic resources in poor people's livelihoods is most clearly illustrated.

The analysis of poverty that the PWG adopt includes a broad range of issues relating to rural livelihoods, and includes a Sustainable Livelihoods (SL) framework (see World Bank and DFID 1999).

Sustainable Livelihoods approaches to poverty focus on poor people's strategies to cope with deprivation and vulnerability. This is an important starting point for analysis of poverty as it emphasises that poor people are involved in dynamic livelihood strategies, adapting to a variety of changing environmental and socio-economic circumstances. Further, it illustrates that poor people's livelihoods are based on a range of resources including human (labour, education, skill), natural (land, fisheries, water, forests), social (kinship connections, status), financial (credit, savings, income) and physical (roads, tools).

Aquatic resource use may only be a seemingly minor component of poor people's livelihood strategies, particularly in a country such as Vietnam in which most rural people identify themselves as farmers, and predominantly as rice farmers. However, aquatic resources, including non-fish resources, often provide an important source of animal protein (particularly in times of hardship), and an important economic activity, if only seasonally. There is also evidence of how poor people in mountainous areas of Lao PDR as well as Cambodia are able to maintain social relations and kinship connections, by using small-scale aquaculture ponds as a means of receiving guests for funerals and weddings, which otherwise would entail heavy financial burdens and risks of indebtedness. There is also evidence of landless or land-short people being heavily dependent on rice field, swamp and mangrove fisheries, and often capturing smaller non-fish aquatic resources.

The capacity of poor people to convert these assets into positive outcomes is influenced by the wider social arenas in which poor people live – of markets, communities, government policy and macro-economic conditions. Often it is these types of linkages that are crucial in determining whether livelihood outcomes are beneficial. Poor people tend to be those with weakest linkages to these arenas – with limited influence, and often excluded from development interventions, including aquaculture extension in Vietnam. With growing socio-economic differentiation, and displacement of poor people access to common property resources such as small-scale wild fisheries may have a growing importance.

The Sustainable Livelihoods approach also allows for a wider understanding of the dynamics of poverty, particularly as seen by poor people themselves. It encourages a participatory approach to analysis of poverty at all stages of implementation of poverty alleviation strategies that also aim to enhance the long-term sustainability of poor people's livelihoods, adopting indicators that are identified by poor people themselves. This may be particularly relevant to the MOLISA strategy and the approach of the MoFI.

The current MoFI focus on the development of aquaculture has progressed over the last decade in Vietnam (for example, see Luu 2000). The major emphasis has been on increased production, demonstrating technological innovations of a variety of aquaculture systems (Luu 2000, Demain 2000). However, the target group and, the majority of those

who have entered aquaculture have not been the poorest. The SAPA scoping meeting and this initiative have highlighted both the limited understanding of poor peoples livelihoods within the fisheries sector and the potential of aquatic resource management strategies as a component of wider poverty alleviation strategies. The next section outlines from secondary sources the role of aquatic resources in the livelihoods of different groups of poor aquatic resource users

3.3.1 Aquatic resources use by poor people in coastal communes[3]

Commonly 80 % of households in coastal communities get their income from fishing, whilst almost all livelihoods rely on fish capture and associated activities as coastal communes commonly have little agricultural land. Fishers' livelihoods are vulnerable to seasonal weather, destructive typhoons, and migration (See Box 1).

Box1: Vulnerability of livelihoods of South Central coast dwellers in Vietnam

Seasonality: The main fishing season[4] is from January to April moon calendar (i.e. Feb. to May), followed by a secondary season, also called off-season, but when fishing continues, from June to October. In Late October or November the bad weather starts with typhoons. From the end of October to February fishing is conducted if there is good weather, there is however few fish, and most of the time is spend repairing boat and gear etc. In the 3-4 months of the year when the weather is bad, with limited possibilities to go fishing many fishers depend on credit from middlemen for money to buy their daily food.

Shocks: Typhoon are common and destructive and can represent significant shocks to coastal people's livelihoods. For example, houses in Xuong Huan Commune were destroyed in a typhoon in 1992, and they have lived in temporary shelters, simple bamboo mat stilt houses since then. They have been informed about their removal in a few months time, beginning of 2000. They seem; however, to have received very little detailed information and have few ideas about where they will be going. The problem is that they have no entitlement to land, and that where they move they are supposed to pay for land, which they cannot afford.

Trends: The south central coast has been influenced by several migrations in the 60s and early 70 s. During "the war with the Americans", fishermen from the provinces north of Khanh Hoa (especially from Phu Yen, but also and Binh Dinh and Quang Ngai Provinces) came to Xuong Huan, because of the heavy fighting in these provinces. Richer migrants brought boats or money and favourable conditions gave rise to an increase in the number of vessels during the 80s and 90s recently this has been stagnating and actually decreasing the last two years. There is a small tendency for people who cannot repay their loans to sell their boats, and leave fishing (or to continue as crew). Recently, the catches from standing nets have been declining (this might be due to the introduction of other gears harvesting the same fish stock, before they reach the standing nets).

Asset structures are varied. Commonly 30-40% of households are deficient in financial capital, natural capital is declining, there are variable levels of social and human capital in communes and physical capital assets are controled by the more wealthy (See Box 2).

[3] (Based on interviews at UAF, and information from Berit Olsen 1999 interviews in: Xuong Huan Commune and Vinh Tho Commune (Urban Quarter/Phuong), Nha Trang City (District); Ninh Ich Commune, Ninh Hoa District; Dog Mon Village, Vinh Van Commune, Van Ninh District; Bich Dam (Dam = lagoon) Village (Thon) , Vinh Nguyen Commune and Trung Dong Village (also called Cua Be) Vinh Truong Commune, Nha Trang City and information from the interview with the fish landing port manager)

[4] Around Nha Trang district for example fishing activity goes on in the provincial waters south of Khanh Hoa, around he Paracel islands, and some also go to the Spratley Islands.

Box 2: Assets of coastal dwellers

Physical: Their housing is poor, with sand floors and bamboo mats for walls. There are three main fishing gears: (i) standing net; (ii) purse seine for anchovies; and (iii) hand line and long line for tuna and mackerel. Most (poor) coastal dwellers do not have their own boat, but work as crewmembers. The price of the boats and gear is high, 30-40 million VND for one long line with 500 hooks. Standing nets are 5-700 meters long, and each co-operative member may "own" a number of fragments.

Social: Fishing co-operatives, which work together and share physical assets and negotiate access to natural capital such as standing net sites, are organised at the commune level, but can be too big and bureaucratic and some are reorganised on a village basis. The standing net co-operatives provide members with a very low income, which provides security against hunger) in the off-season period (November to January). The income for the members depends on the catches, and on their position in the co-operative (they are given work points according to their position). Most of the fishermen migrating to Nha Trang had been there before and had contacts in the town through earlier fish landing and trading. To keep a more stable crew many boat owners employ relatives from the province of origin[5]. There is widespread membership of a number of people's organisations. The VWU has organised groups in each hamlet, where the women meet once a month. Many people left after reunification in 1975, (e.g. 804 persons left as boat people from Vinh Tho Commune prior to 1988 and settled in the same community in California), many of them have been back to visit, they provide family remittance, and have established a community fund, where they transfer funds to the Peoples Committee to enable them to buy 10 tons of rice per year to provide for the poor households in the commune.

Human: A qualified and experienced fishing crewmember is in high demand. The crew vote with their feet, i.e. they select the vessel (and captain) where they expect to gain the highest income.

Financial: Many immigrants (see trends box 1) brought boats and money with them, and many of the wealthiest households currently are from earlier migrating households, (which might mean that it was the wealthiest households that could afford to migrate and did so). Due to declining resources and catches the income of many is now very low, close to a survival salary, and there is no room for savings in the households. Around 30-40% of many communes have insufficient money to buy food during the season when there is no fishing.

Natural: The sites/plots for mounting the standing nets in the sea are limited. In some locations the mangrove forest is almost totally disappeared, the land has been cleared, and large shrimp farming ponds have been constructed along the coastline and in lagoons. It is very difficult for fishermen to get access to land; therefore few fishermen participate in aquaculture. The development of cage culture in marine waters is very poorly developed, but there are no restrictions on where the fishermen cab set up their cages. Wild fisheries stocks are declining.

A variety of policies, institutions and practices affect the value of peoples assets, some of these are summarized in Box 3.

[5] The boat owners in Vinh Tho Commune usually recruit crewmembers from Phu Yen and Binh Dinh Province, i.e. the province /district of their origin. 70 % of the fishing households originate from Phu Yen Province.

Box 3: Policies, institutions and practices

There is a long and rich culture associated with fishing, for example the fishermen's festival: "the South Sea Spirit Festival" has been celebrated for generations.

The benefits of fishing has been significantly influenced by government policy changes over recent times. Between 1975 and 85, the government restricted private fishing. The only permitted co-operative structure decreed that benefits be distributed equaly regardless of actions of individual members and was unpopular and resisted. However, the economy in the fisheries was very favourable around 1985 and 1986. The government continued to subsidise foodstuff and input to the fisheries (diesel etc.), while the fishermen were able to sell their catch on the free market. This enabled many households to buy their own boats and change to larger boats in the 90s. In the mid 90s however too many households invested in new vessels, and took large credits. The number of vessels has been stagnating and decreasing the last two years. The government has subsequently lost/relinquished control of fishing to the private sector and fishers livelihoods are now dependent on markets commonly foreign markets e.g. Taiwan for anchovey and Japan for tuna. Co-operatives opperate standing nets and pay a high resource tax, and have problems repaying the loans.

Recently the "gold-rush mentality" which characterises the development of shrimp farming has been evident in coastal Vietnam. Practises, which affect livelihoods along the coast, include the construction of large shrimp farming ponds along the coastline and around lagoons. Some sea dykes (build to protect coastal rice lands) have been breached by farmers without planning e.g. in Central Coast Ninh Thuan province to provide saline water for shrimp culture.

Many communes have established a Resource Protection Committee. Committees might include, the deputy chairman of the People's Committee, a representative from the fishery department of the commune, and one from the army (i.e. the coast guard). However, economic incentives are clear given the current market value of shrimp is 150 times that of rice (weight for weight).

3.3.2 Aquatic resources use by poor people in the Mekong delta

The Mekong delta comprises a range of agro-ecosystems some of which are fragile. It is characterised by rice farming which began in the delta 300 years ago. However, over the last 20 years the government and farmers have transformed the 4 million ha delta and their farming systems through canal excavation, settlement and reclaimation of land, intensification of rice farming. Policies and practices leading to significant increases in regional rice production have changed the landscape. The poor who depend on aquatic resource use have lost out.

Box 4: Vulnerability of livelihoods of Mekong dwellers in Vietnam

Seasonality: During the Mekong flooding seasons (August/September-October/November) land (e.g. In Long An, Tien Giang, Dong Thap, An Gaing) regularly floods 0.3-3m and farmers in these vulnerable ares can't grow rice. During this period fishing is an important source of livelihood. In the dry season the river flow can reduce by 95% and saline intrusion occurs.

Shocks: Flooding in the delta can submerge towns and roads, break dykes and destroy bridges and causing serious damage to agriculture. Serious floods tended to occur in 4 year cycles but recently have been an annual occurence. 2000 has seen the worst floods since 1961 with all districts affected.

Trends: The key trends are rice intensification (from 180-210 day rice monocrop of about 1 t to 2 short duration crops in 100 days of about 8-10 t), magrove destruction (70%), melaleuca forest destruction (95%), increased population pressure (2.2%), small land holdings and increased exploitation of wild fish. The wild fishery on which the livelihoods of many of the delta's poor depend is declining. In the Plain of Reeds the fishery is declining due to over fishing and habitat loss; previously the flooded Melaleuca forest was good ecological niche for fish, this is now removed for rice paddies (50% lost in Long An), pesticide use for HYV rice, early rainy season low pH in canals. Along the coast, Long An Tien Giang, Ben Tre, Tra Vinh, Soc Trang, Kiengiang, Bac Lieu and Ca Mau saline intrusion (in part due to shrimp culture) has reduced rice yields and reduced wild catch of fresh water fish. In other parts of Ca Mau salinity protection has allowed the expansion of the area of land under double-cropped rice. As the surface water in the protected area has become increasingly fresh, the area under shrimp (P. *monodon*) has reduced. Salinity protection interventions are increasing acidification of acid sulphate soils in the dry season, and consequent canal pollution. The less saline, more acidic canal waters affect aquatic resource production and biodiversity. This in turn appears to have adversely affected landless labourers and small farm holders who have relied on capture of aquatic resources to supplement their income and food intake.

Box 5: Assets of poor Mekong delta dwellers

Physical: The poor tend to have less/no land and are most dependent on aquatic resaources and have been impacted by agricultural intensification. Frequent flooding makes it necessary for farmers to elevate land for housing and crops giving rise to ponds and canals and rice fields and aquaculture is practised is these by 60-70% of household. In irrigated areas e.g. Tay Ninh Province (Trang Bang and Chau Thanh districts) some access to sub-canal (irrigation level 2 canal) water available year round for aquaculture (common systems include tilapia, pangasius common carp and kissing gourami). In rainfed areas many "ponds" are created due to elevation of houses (e.g. Duc Hoa district (lowland rainfed) of Long An Province, Dong Phu (rainfed midland) district of Binh Phuoc province) Such rain fed ponds commonly grow catfish, tilapia and Kissing Gourami as it is difficult to manage water quality.
Social: There is widespread membership of a number of people's organisations. The VWU has organised groups in each hamlet, where the women meet once a month. The fartherland foundation is also well represented. There are kin links between Khim ethnic groups in Cambodia and delta dwellers.
Human: In general educational level in the delta is low. Near the Cambodian border (An Giang, Tra Vinh, Soc Trang, Kiengiang, Bac Lieu) a lot of Khmer groups have low education lack of technical knowledge so poor. Migrants official and unofficial lack knowledge of how to manage problem soils.
Financial: In Long An 60% of households are on low income (22 million VND/HH 5.7 pers), $276/pers/y (321637VND/per/mo).
Natural: The key natural capitals in the delta are land and water and aquatic resources. The key issues are their quality and quantity. 28% of land is alluvial soils suitable for rice, 40% is acid sulphate, 21% is saline the rest is upland. Land has been distributed evenly. The average land holding is 1-1.1 ha up to 2.4 ha in Long An, in Vinh long and Ben Tre provinces landlessness is increasing as a result of high provincial population and small land area so after equitable distribution each family a few square meters to farm. As benefits become too small so people sell or lose land, increasing landless. In the Ca Mau peninsular Agriculture centred on a single, extensive, wet season crop of rice. Soc Trang and Bac Lieu there is alot of natural grass cover. 83% of low-income families fish in rice fields canals and rivers. 531 kg/hh/y catch on average ½ sold providing 14% of income, eat 60kg/pers/y.

A variety of policies, institutions and practices affect the value of peoples assets, some of these are summarized in Box6.

Box 6: Policies, institutions and practices

After the war, collectivized production with teams using commune owned equipment was introduced from the north but disregarded producer incentives and disrupted market mechanisms for the flow of inputs and outputs. The big change in policy from the post-war collectivized production system towards a household oriented contract system (the Doi Moi policy) lead to self sufficiency in rice in the mid 80s and further reforms initiated in 1988 (long-term inheritable land leases, replacement of contract system with fixed land tax (removing sale of produce to the state at low prices), output markets were privatised, input supplies decentralised and food grain subsidies removed) strengthened producer incentives and led to further productivity increases. Vietnam is now the largest rice producer and the third largest exporter of rice. Traditional rice production systems in the Mekong delta in the mid 70s produced 4 million tonnes, by the late 80s 6 million tonnes, and now around 13 million tonnes just under half of national output. The increase in area has been 0.6 million ha through forest clearence, irrigation and drainage

The high price of shrimp has seen the emergence of so-called "shifting shrimp farming". A farmer moves into a public managrove forest slashes down an area, to form a kind of pond and traps wild seed the system depends on natural productivity. Profits are high but where mangrove areas are potential acid sulphate soils, farms become unsustainable within 4 years. Farmers abandon the "farm" and move to another location. The practice is hugely environmentally degrading affecting coastal stability, land productivity and local and ofshore fisheries

These examples further indicate that poor households are those involved in vulnerable livelihoods, and also those least able to diversify or move completely into more productive activities. Since poor people tend to have weaker social connections they are less able to benefit from new technologies and modes of production, such as aquaculture, and the credit that is often required for such diversification (see PWG 1999). Again as other households are able to make such changes the gap between poor and wealthier households can only be predicted to grow.

3.4 Inequality within regions– the contribution of aquaculture

PWG (1999) argues that inequality within regions has declined although gaps between rural and urban areas persist. However, other evidence (for example DFID 1998) suggests that in some regions for example in the Mekong Delta (with a high incidence of landlessness), inequality has intensified. FAO (1999) also notes that in the country as a whole the 'gap between rich and poor is increasing'.

The issue of inequality within regions is difficult to assess from existing data, with much of the evidence appearing to be somewhat contradictory. However, it is worth considering some potential trends, especially within the context of aquaculture development. Diversification of the rural production has for many years been regarded as the basis for poverty alleviation initiatives in rural areas (see for example FAO 1995, World Bank 1998), and remains a justification for aquaculture development. Yet since the poor have less access to material and social resources, and are less able to make risky investments the poor are less able to diversify their production. Thus while some sections of the rural population (including the broad category of the 'rural poor') are able to benefit from diversification, the gap between those that are not able to diversify can be predicted to intensify. In many areas aquaculture is an important means of diversification.

The PWG (1999) reports indicate that access to credit and government services is not evenly spread, and that very often the poorest are excluded. Since these services are used for further livelihood diversification, of which aquaculture might be one example, continued inability of poor people to access such services and the capturing of

diversification opportunities by wealthier groups may in the longer term lead to even further inequality. The PWG (1999) notes that although there are greater opportunities for economic advancement, poor households are less likely to be able to benefit from these opportunities. Therefore MOFI and other line agencies should target the poor through pro-poor policies.

The study of Tra Vinh (Oxfam 1999) suggests that wealthier households are able to engage in shrimp production as they have access to suitable land, but also because they have 'connections' that allow them to gain easier access to financial capital (World Bank and DFID 1999). In the longer term, this is likely to lead to a continued trend of inequality and a growing gap between the poor. As diversification generates greater wealth for some rural people, the gap between those who are able to diversify their production and those who are not inevitably widens. The wealth that is created may then be invested further, thus exacerbating the widening gap between rich and poor.

Concerns regarding access to resources (viz land, forests, fishing grounds, mangroves) and effects of privatisation and diversification have been voiced throughout the 1990s. Inequitable access to new technologies and productive resources, such as aquaculture, may intensify rural inequality. In his study of the aquaculture and rural inequality in two northern coastal districts (Xuan Thuy in Nam Dinh Province and Hoanh Bo in Quang Ninh Province) Adger (1999) argues that as incomes from non-agricultural production, including aquaculture, have become increasingly important inequality has risen. He argues 'rising incomes in rural areas in Vietnam appear to be occurring in conjunction with rising inequality, mainly as a result of non-agricultural income diversification such as aquaculture and remittance income'.

3.5 Consumption of aquatic resources and poverty

Much of the official data on aquatic resource consumption is rather limited. There is some contradiction between VLSS and FAO nutritional data. VLSS clearly indicates that aquatic resources are of great nutritional significance in Vietnam, and more so for poor people (Tables 9 and 10).

FAO (1999) data does not seem to support this assessment. This could be due to difference between weight consumed and nutritional value, but even allowing for such a distinction the FAO report would appear to be an underestimation. FAO (1999) report on consumption and nutrition – 'Fish is not very frequently consumed and provides less than 3% of total energy intake. Meat, which provides 6% of total energy intake, is usually given to children and the sick particularly in urban areas.'

Table 9: Total food consumption by region and quintiles (Unit = kg/year/capita)

Regions	Quintile	Rice	Meat	Fish	Vegetable	F-sauce	Other food
Northern	1	93.99	1.91	1.67	7.3	0.3	22.75
mountains	2	122.05	2.61	2.22	10.32	0.45	20.43
	3	121.49	3.51	2.97	12.89	0.44	17.69
	4	92.26	4.01	1.99	11.67	0.6	19.13
	5	58.48	5.39	1.59	9.16	0.45	13.25
Red River	1	110.58	1.07	1.91	7.48	0.46	12.13
Delta	2	133.93	1.76	2.52	10.47	0.37	12.1
	3	136.81	2.51	3.65	14.51	0.52	15.19
	4	116.23	3.42	2.97	16.32	0.52	17.41
	5	47.92	4.59	2.66	10.59	0.45	14.7
North	1	86.25	1.1	1.91	9.63	0.69	26.29
Central	2	103.35	1.88	3.42	14.47	0.86	26.12
Coast	3	102.13	2.62	3.28	13.53	1.01	23.47
	4	104.85	4.07	4.18	14.44	0.93	31.97
	5	50.19	4.55	2.44	10.45	1.02	27.03
South	1	69.88	1.14	1.02	37.25	0.38	30.89
Central	2	104.58	1.22	1.51	14.97	0.57	11.69
Coast	3	105.78	1.28	2.18	14.18	0.63	8.86
	4	96.54	1.91	2.99	12.36	0.86	11.55
	5	52.98	2.39	3.12	7.05	0.75	11.49
Central	1	95.36	0.98	1.51	10.82	0.13	30.25
highland	2	80.88	2.92	1.29	4.45	0.36	11.02
	3	61.9	2.86	1.48	3.13	0.39	10.05
	4	56.93	3.54	1.48	4.61	0.45	10.6
	5	36.16	3.9	1.47	3.16	0.37	7.97
Southeast	1	17.14	0.55	1.36	3.92	0.33	5.24
	2	47.63	1.08	4.1	7.28	0.4	4.42
	3	57.06	1.71	2.51	6.84	0.46	7.68
	4	57.35	2.28	2.06	6.72	0.53	11.21
	5	28.75	3.02	1.79	5.77	0.49	10.12
Mekong	1	66.24	1.01	6.58	7.19	0.72	5.12
Delta	2	85.97	1.63	5.8	7.41	1.19	7.94
	3	86.96	2.22	5.33	7.3	1.22	10.44
	4	91.21	3.04	6.09	8.11	1.28	13.11
	5	50.51	3.56	2.94	7.78	0.96	12.73

(Adapted from VLSS 1988 by Li Thi Chau Dung)

Table 10: Composition of total food expenditures by region and quintile (Unit = %)

Regions	Quintile	Rice	Meat	Fish	Vegetable	F-sauce	Other food
Northern	1	71.84	8.33	3.92	2.48	0.3	13.13
mountains	2	69.19	9.7	4.04	3.06	0.37	13.64
	3	63.21	12.92	4.06	3.26	0.42	16.14
	4	48.59	20.07	4.78	3.77	0.65	22.15
	5	34.45	28.57	3.95	3.28	0.73	29.02
Red River	1	79.87	5.43	3.95	2.28	0.44	8.04
Delta	2	74.82	7.24	4.67	2.5	0.43	10.35
	3	68.53	9.37	5.76	3.25	0.56	12.54
	4	56.98	12.75	5.67	3.49	0.57	20.55
	5	26.75	23.15	6.36	3.54	0.88	39.34
North	1	70.12	6.03	6.58	3.33	1	12.92
Central	2	63.87	8.4	7.68	3.98	1.12	14.95
Coast	3	58.43	11.74	7	3.79	0.98	18.06
	4	53.69	14.63	6.96	3.69	0.75	20.28
	5	28.81	24.19	6.83	3.39	1.54	35.24
South	1	61.58	5.6	3.53	10.49	0.83	17.98
Central	2	71.18	6.54	4.42	4.74	0.89	12.22
Coast	3	68.47	6.31	5.76	4.49	1.02	13.96
	4	57.23	9.88	8.09	3.93	1.54	19.33
	5	33.34	16.14	10.45	4.12	1.64	34.31
Central	1	72.38	6.2	4.94	3.88	0.29	12.31
highland	2	54.81	18.25	5.65	3.46	0.71	17.13
	3	46.75	22.21	6.7	3.43	0.91	20
	4	42.81	23.72	6.72	4.19	1	21.57
	5	32.49	29.66	7.2	3.37	1.12	26.16
Southeast	1	52.84	8.51	10.44	8.38	1.17	18.65
	2	51.02	8.73	12.16	7.19	1.08	19.83
	3	47.21	11.64	9.46	5.5	0.94	25.26
	4	41.39	14.95	7.9	4.84	0.97	29.94
	5	21.91	20.25	7.9	4.37	1.05	44.52
Mekong	1	58.19	7.27	19.01	4.66	1.06	9.81
Delta	2	58.39	9.1	14.94	4.23	1.56	11.78
	3	54.49	11.8	12.79	3.99	1.25	15.68
	4	50.01	13.67	13.05	3.72	1.21	18.35
	5	29.7	21.21	10.12	4.78	1.46	32.72

(Adapted from VLSS 1988 by Li Thi Chau Dung)

This type of inconsistency further illustrates the neglect of aquatic resources. In some instances when the importance of aquatic resources is alluded to, the full significance is not appreciated. For example, PWG (1999) alludes to the fact that rice field 'fisheries' including crabs and small shrimps are or particular importance for poor people as a source

of animal protein, and as a safety net in times of hardship. Similar evidence is available for the region – including Cambodia and Lao PDR (see Guttman undated).

3.6 Employment and Production

Many people are involved in some form of aquatic resource use, either as a primary occupation or as a component of wider livelihood strategies. Government statistics on numbers of fishery households only refer to professional fishers and thus exclude the majority of rural people who utilise freshwater fisheries on a more seasonal and opportunistic basis.

Table 11: Fishery households by region

Region	Fishery Households 1990	Fishery Households 1998	Population of Fishers 1990	Population of Fishers 1998
Whole Country	228 650	301 952	1 171 130	1 557 921
Red River Delta	12 415	16 745	55 326	77 630
North East	5 621	7 635	26 804	37 270
North West*	147	174	648	1 068
North Central Coast	62 610	72 967	309 843	370 798
South Central Coast	49 213	63 783	260 947	335 099
Central Highlands **	247	409	1 336	2 260
North East South	37 720	52 594	201 424	285 232
Mekong Delta	60 677	87 645	314 802	448 564

(Source GSO (1999))

* The majority of fishing households in the North West are in Hoa Binh (100 in 1998), with 60 in Son La and 14 in Lai Chau.

** Most fishing households in Central Highlands in 1998 are in Dac Lac (403).

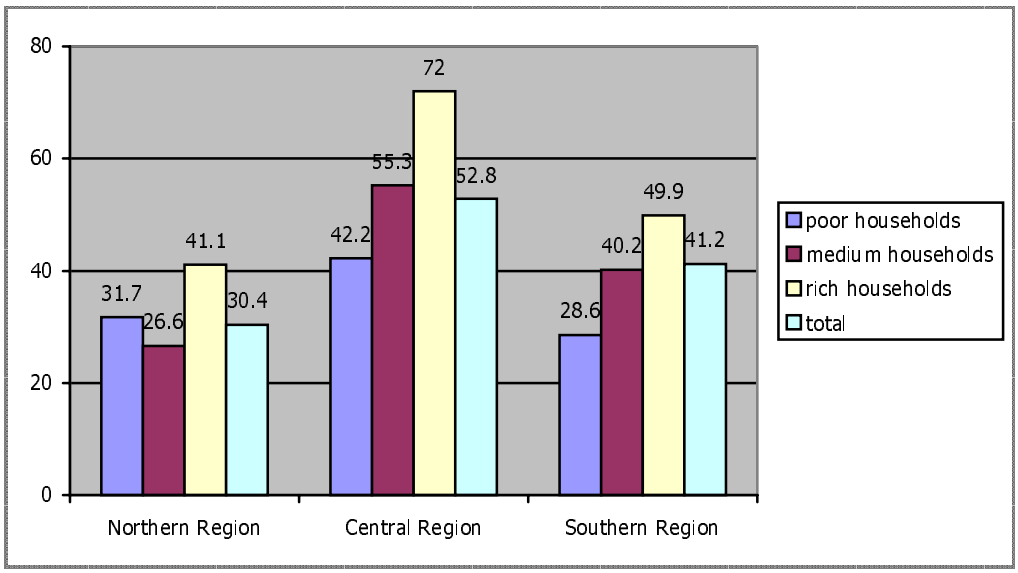
According to these figures the highest numbers of fishers are found in Mekong Delta, the North Central Coast, South Central Coast and North East South. It is somewhat surprising that figures are so low for other areas, in particular the North West and Central Highlands. However this is perhaps symptomatic of inland fisheries, in which there may be a significant proportion of people who fish, but only a small proportion who regard themselves as 'fishers'.

Capture fisheries remain of particular importance in the livelihoods of poorer people. VLSS data on employment indicates that the poor spend more time on capture fisheries (in rivers, lakes and coastal areas) than on culture in all regions of Vietnam except the South Central Coast. There are several possible explanations for this trend in the South Central Coast. The decline in near artisanal shore fisheries is most pronounced in South Central Coast while at the same time the South Central Coast has the largest offshore fishery.
Based on a survey of three regions, the Northern Region, the Central Region, and the Southern Region Carl Bro (1996) conclude that the majority of surveyed households are involved in some form of fisheries or aquaculture activity.

3.7 Income from aquatic resources

Since the majority of aquatic resource use, particularly in inland areas is for domestic consumption, data on income is of only limited value. However, in the study by Carl Bro, fisheries are clearly a significant source of income even for the poorer groups. In the Northern Region, a higher percentage of income is derived from fisheries by poorer households than by middle-income households. However it is also clear that for richer households the percentage of income derived from fisheries is higher.

Table 12: Income generated from fisheries in Vietnam by region



Capture fisheries remain of considerable importance for poor people in many parts of Vietnam, not only for full-time fishers, but significantly for households who combine fishing as a component of wider livelihood strategies. As has been mentioned earlier, income statistics for such small-scale fisheries is not available.

The role of inland capture fisheries is more clearly illustrated by case studies. In two studies of capture fishing and aquaculture in two provinces in Southern Vietnam (Tay Ninh province and Long An province) Nho and Guttman (1999a and 1999b) discuss the role of aquatic resources in the livelihoods according to economic status. The study of Tay Ninh province (1999a) indicates that most households are involved in some form of capture fisheries but that this is of even greater importance for poorer households table 13.

Table 13: Proportion of households fishing by different income groups

Income group	**Proportion of households fishing**
Very low income	88%
Low income	84%
Medium income	58%
High income	44%

(from Nho and Guttman 1999a p.15)

In a summary of economic value for non-fishing households (i.e. those that are involved in fishing but not as the main occupation) Nho and Guttman (1999a) note that the importance of fishing 'for the poorer groups was much more pronounced than the combined picture. The value of the catch was almost one third of the reported income for the poorest group and over 15% for the low-income group. For the other groups the value was less than 10% (Table 14).

Table 14: Economic value of catch as a proportion of reported annual income

Group	Value of Catch (at VND 7 000/kg)	Proportion of total income (%)
Very low income	2 531 274	30.9
Low income	1 668 838	15.7
Medium income	1 411 617	8.9
High income	883 556	3.5

(from Nho and Guttman 1999a p.23)

In Long An capture fisheries in non-fishing households (i.e. for those households for whom fishing is a supplementary activity) is of even greater importance for the poorer groups, as indicated in Table 15. There is also a correlation between dependency on fisheries and land ownership, with fishers having 'less than average land holdings at 2.2 ha'.

Table 15: Economic importance of fishing to households of different economic status

Economic status	Catch (kg/household/year)	Value (VND)	Proportion of Total Income (%)
Very low income	332	2 323 000	22
Low income	506	3 541 000	16
Medium income	575	4 025 000	12
High income	816	5 717 000	10

(From Nho and Guttman 1999b p.28)

Fish is also the main source of animal protein in these studies. In Tay Ninh, Nho and Guttman (1999a) report that 'household members consume over 30kg of fish/person/year. Fisher families have even higher consumption at 50 kg/person/year.' The consumption is even higher in Long An (Nho and Guttman 1999b) where 'household members consume over 60 kg of fish/person/year.' Guttman (undated) notes that Vietnamese Plain of Reeds fish consumption rates at 35 to 60 kg/caput/year are far higher than official national averages (at 13 to 16 kg/caput/year).

3.8 Potential for poverty-focused aquatic resource management

Although aquaculture production and incomes have increased significantly the majority of the beneficiaries have not been the poor. There is only limited evidence of poverty-focused initiatives. Yet there is considerable potential for aquaculture development for poor people as a means of diversification of agricultural production or integration with other activities, and as an alternative source of production. Simple technologies are largely in place, and many of the constraints to entry by poor people have been identified. For significant numbers of poor people these are not constraints of lack of access to natural capital but lack of credit and other training, technical and infrastructural support.

There is a wide range of roles for aquatic resource management in livelihoods:

- As a primary occupation
- As a supplementary occupation in a diversified and/or integrated farming system
- As a seasonal activity in vulnerable periods – or when other options are not available
- As a supplementary source of nutrition – simple technology systems using available on-farm inputs, not aiming to maximise production but to maintain a viable source of food

- A component of wider more diversified livelihood strategies with limited inputs and consequently lower risk i.e. a safety-net for weaknesses in other livelihood components
- An option for women. (While some evidence exists from Vietnam, the beneficiaries have once again largely not been the poor. Minh at al (1996) report on the involvement of women in fish nursing activities in Can Tho. Although a secondary and seasonal activity, these various activities can generate significant sources of cash income and generate an important means of savings averaging US$617 per household/year. However, the authors also point out that over 51.5% of sample households belonged to 'the rich and the very rich groups with annual incomes at US$310 to US$490'). This compares to incomes of the lowest groups of US$50 to US$150. The report considers six wealth categories. While the contribution to household income of the three highest wealth categories was 39.5%, 24.0% and 27.5%, for the lowest two wealth categories with annual incomes of US$50 and US$60-96 the contribution was only 3% and 6%. It is also significant to note that the major constraint reported by all households was lack of 'capital investment'. Drawing from earlier discussions of poverty in Vietnam that suggest the poor face greater obstacles to accessing credit, it would appear that the poor face significant constraints to entry into such nursing activities).
- The example of involving women in nursing activities also indicates that by breaking up the production cycle entry points can be created for poor people even the landless – for example as groups of seed, fry or fingerling traders. There is considerable evidence of such strategies in Bangladesh, and more recently in Lao PDR.
- Community management of water bodies, and dry season refuges. Several community management regimes have been implemented in Lao, Cambodia and Bangladesh that have adopted a wide range of local management regimes.
- In terms of poverty the wild fishery, both inland and coastal, is of greater importance than aquaculture (cf. Wysocki and Friend 1998). While poor people have generally not benefited from aquaculture extension, they have tended to become more reliant on aquatic resources as a result of indebtedness, landlessness and displacement. Several types of initiatives are possible, including rehabilitation of fishery habitats and enhancement, as well as a variety of forms of co-management regimes. These may also be combined with aquaculture activities.

As a sectoral technology-led approach, aquatic resource management and aquaculture will not address poor people livelihood objectives in Vietnam. But as a component of a wide integrated, cross-sectoral approach to poverty, aquatic resources hold considerable potential. Its adoption into the Hunger Eradication and poverty reduction programme will highlight its component value. Box 7 illustrates some lessons learnt.

Box 7: Lessons learned from the last decade of experience indicate

Need for targeting of poor people, based on sound understandings of poverty. Unless poor people are targeted and supported they are not likely to benefit from aquaculture.

There is cause for concern that poor people may become poorer if aquaculture fuels socio-economic differentiation.

The need for low cost, simple technologies that do not place demands on labour, time and material inputs

The need for responsive extension services that are able to co-ordinate across government agencies

More intensive systems supported by well-trained and responsive extension agencies

The need for other forms of support – for example, credit and savings, marketing and processing assistance. These may well be beyond the expertise of the Fisheries sector.

The importance of wild capture fisheries and the need to ensure poor people's access to and control over these resources, and conservation measures.

The importance of coastal, artisanal fisheries

3.9 Identification of poor people who depend on aquatic resources

The experience of conducting this study has clearly indicated that despite a great deal of information on poverty, and on aquatic resources, there is very little that brings the two subjects together. The continued neglect of poverty within the fisheries sector and of aquatic resources within the poverty alleviation sectors is clearly an issue of concern.

While this current report has only provided limited insight into the identification of areas where there are significant numbers of poor people whose livelihoods depend on aquatic resources, the assessment of available information allows for some recommendations on how future such activities might be approached.

In broad regional terms it has been possible to summarise the types of poor people who are dependent on aquatic resources, in what ways they are poor, and in what areas they live. In order to plan more effective assessment based on Sustainable Livelihoods approaches it would be possible to use this type of information to target a geographical area, agro-ecological system, or a particular category of poverty (for example, landless, or coastal fishers). Data on poverty is available at province and district level, and communes collect their own socio-economic data on villages and households. This data could then be utilised to target specific villages and households.

In addition to poor people who combine aquatic resource use (whether from capture fisheries or aquaculture) as a component of wider livelihood strategies, and small-scale coastal fishers, other poor people whose livelihoods depend on aquatic resources can be identified. A brief overview was prepared in the second workshop and is summarised in table 16.

Table 16.1. *Poor living around lakes, reservoirs and rivers*

Poverty issues	Poor people living on water areas do so because they have no access to land and productive resources. Moving into fishing is often a last resort for the landless and displaced. Tend to lack infrastructure, sources of credit, extension services. Unable to diversify production and therefore highly dependent on aquatic resource based livelihoods. Highly vulnerable livelihoods. Many people resettled to reservoir areas after flooding of their land. Received little compensation from government, and often have no history of fishing. Include both full-time fishers and occasional /opportunistic fishers. Not all people who fish from reservoirs etc are poor. Many who have access to land, efficient gears and other productive resources are not poor.
Aquatic resource issues	Aquatic resources are seriously degraded due to environmental degradation, over-fishing, ineffective state management resulting in low production levels. In some areas experience of small-scale aquaculture projects, and in small-scale capture fishing. No policy on resource management – particularly on fisheries. Little local experience of aquatic resource management.
Locations	All regions – but in particular Northern Uplands and Central Highlands. Specific sites include Thac Ba reservoir (Yen Bai province), Nui Coc reservoir (Thai Nguyen province), Tri An (Dong Nai province, South East), Dau Tieng (Tay Ninh), Hang Then (Cao Bang province)

Table 16.2. *People on inundated areas, areas prone to flooding/People living in flooded forest areas*

Poverty issues	Landless or land short, lack capital and access to productive resources. Environmental vulnerability – viz from storms and extreme floods.
Aquatic resource issues	Capture fisheries during flood/inundated periods Aquaculture in ponds
Location	South East and Mekong Delta Melaleuca forest areas of Mekong Delta: Long An, Dong Thap and An Giang Provinces

Table 16.3. *People living in coastal areas*

Poverty issues	Some of the poorest people are full-time fishers and those most dependant on fishing as they do not have access to other productive resources. Marine resources near the coast are more seriously depleted but they lack the capital and boats etc to be able to go further to sea. Those excluded from intensive aquaculture production? Vulnerable to floods, storms etc. Although not isolated in terms of communication, alternative opportunities very limited. High percentage of landlessness – and finite land resources
Aquatic resource issues	Decline of near coastal fisheries. Poor unable to invest in gear to fish further out at sea. Few coastal communes included in the 1726 Poor commune programme. Few alternative livelihood options
Location	North and Central Coastal areas are most prone to natural disasters. Nha Phu Lagoon, Khanh Hoa Province faces extreme aquatic resource depletion. Ca Mau (Mekong Delta), Tam Giang Lagoon (Hue), and O Loan Lagoon (Phu Yen), Thi Nai (Binh Dinh), Lang Co Lagoon (Hue) also face resource depletion.

Table 16.4. *People living on poor or infertile soils, landless and land-short*

Poverty issues	Infertile soils and low agricultural yields. Midland and some coastal areas poor soils as a result of deforestation , with high erosion, poor access to fresh water. Few opportunities for alternative livelihoods – and limited extension services. Growing inequality within regions – and growing issue of landlessness, particularly Mekong Delta
Aquatic resource issues	Decline of wild fishery – partly attributable to the use of fertilisers and pesticides for rice cultivation due to government efforts to increase rice production. Note – loss of dry season wild fish refuges in areas prone to saline intrusion.
Location	To some degree all areas have suffered depletion of wild fishery resources as a result of intensification of agriculture production and environmental degradation. Acid sulphate areas of Mekong Delta (viz Dong Thap Muoi region, and Long Xuyen quadrangle), upland areas in North and Central regions. Mangrove and melaleuca forests in Kien Giang, Long An, An Giang, Dong Thap and Ca Mau provinces, Long An and Tien Giang provinces Landlessness particularly significant in Mekong Delta

Table 16.4. *Ethnic minorities*

Poverty issues	Limited land, isolated areas, prohibited from cultivating in sloping areas. Khmer often living in saline and acid sulphate soils, with poor agricultural opportunities. Poor access to extension services, often isolated with limited infrastructure (including access to markets) Culturally isolated
Aquatic resource issues	Some ethnic groups in mountain areas have aquaculture tradition, and good experience of aquaculture extension. Khmer – traditionally involved in small-scale wild capture fisheries, now facing resource depletion. Pako involved in cage and pond aquaculture, and capture fisheries in rivers and springs.
Location	Northern Uplands, Central Highlands, Mekong Delta bordering Cambodia Hmong people in upland areas, Khmer people in Mekong Delta areas, Pako, Van Kieu and Ta-Oi in midland areas

3.10 Regional Identification of Poor People and Aquatic Resources

Based on the review of secondary data and the reports prepared by Vietnamese counterparts it is possible to identify the main regions where significant numbers of poor people's livelihoods are dependent on aquatic resources. These are summarised below.

1. Northern Uplands

- By most criteria (including depth of poverty) the Northern Uplands is one of the poorest regions in Vietnam.
- Small land holdings and poor quality land
- Mountainous areas remain isolated, with limited access to government extension. However, a high proportion of 1726 poor communes are located in the Northern Uplands and there is increased effort to target these communities.
- Large numbers of ethnic minorities.
- Lakes and large reservoirs available for small-scale family fisheries development
- Small ponds and rice fields suitable for fish culture available
- Plentiful supplies of water can be fed to small-scale family ponds by gravity
- Lakes, reservoirs and streams are suitable for establishing fish culture

2. Red River Delta
   - Land shortages
   - Although a lower percentage of people living in poverty, given the high population density, a large number of people living in poverty
   - Highest incidence of malnutrition
   - Numerous people living in boats
   - Large-scale uptake of aquaculture – but with the poor largely excluded
   - Large numbers of fishing households in Hai Phong (9187), Nam Dinh (2506) and Thai Binh (2306)

3. North Central Coast
   - Land shortages
   - Large numbers of fishing households – Thanh Hoa (15362), Nghe An (14 472), Ha Tinh (9624), Quang Binh (12 028), Quang Tri (7562) and Thua Thien Hue (13 919) provinces
   - Vulnerable to storms and natural disasters

4. South Central Coast
   - By many indicators one of the poorest regions
   - Largest concentration of poor artisanal fishers facing resource depletion, and increasing competition from larger scale fishing enterprises
   - Large numbers of fishing households –Quang Ngai, Quang Narm, Binh Dinh, Khanh Hoa, Phu Yen, and Da Nang
   - Often excluded from assessments of poverty, including the 1726 Poor Communes initiative
   - Land shortages
   - Vulnerability to storms

5. Central Highlands
   - By most criteria one of the poorest regions in Vietnam (together with the Northern Uplands)
   - Lakes and reservoirs suitable for small-scale fisheries
   - Plentiful water supplies for small-scale aquaculture

6. South East
   - Although by many criteria not regarded as one of the poorer regions there is a high incidence of landlessness, and small land holdings
   - Large numbers of migrants
   - Apparent correlation between landlessness and aquatic resource use
   - Prone to natural disasters
   - Rice field fisheries and reservoir fisheries (Tri An) in Tay Ninh and Binh Phuoc provinces, capture fisheries in Binh Duong, province
   - Aquaculture in Binh Phuoc and Ba Ria-Vung Tau provinces
   - Large numbers of fishing households, particularly in Binh Thuan (23 554), Ho Chi Minh (6 427), Ninh Thuan (6 362), and Dong Nai (4 881)

7. Mekong Delta

- High incidence of landlessness – and apparent correlation between poverty (including landlessness) and dependency on fishery resources (including among ethnic Khmer)
- Highest regional dependency of poorer people on aquatic resources as major source of animal protein
- Highly productive wild fishery with evidence that prized economic species is being exported to bordering provinces in Cambodia
- Vulnerability to flooding, and other natural disasters
- Poor quality soils
- Important wild fishery habitats, increasingly vulnerable – including dry season refuges for 'black' fish in melaleuca forests, and Plain of Reeds
- Indication of highly productive rice-field fisheries
- Large numbers of fishing households (87 645 for the province)– Ca Mau (the largest concentration in Vietnam with 38 857), Bac Lieu (12 543), Kien Giang (9 846), Ben Tre (5 369), An Giang (2 789), and Dong Thap (2 238)

4 Conclusions and recommendations

In concluding it is necessary to consider how to account for the lack of data on poor people and aquatic resources. This has been an issue that DFID has been addressing in the region for over two years (see Wysocki and Friend 1998). While there is growing evidence of the importance of aquatic resources for poor people it has not been systematically brought together. Production orientation of DOF has lead to collection of certain kind of data, and also to targeting those most able to produce. This has been reflected in aquaculture promotion strategies. Although there have been efforts to promote aquaculture in poor areas such as the Northern Uplands, there is less evidence that poor households have been targeted in these poor areas. At the same time, there is limited evidence of poverty alleviation strategies realising the full significance of aquatic resources in poor people's livelihoods and their potential.

The review on which this report is based has raised a number of issues summarised below:

- Despite an overwhelming volume of statistical data on poverty, using a range of economic indicators there is almost no data available on the role of aquatic resources in poor people's livelihoods. This is largely attributable to the inherent difficulties of measuring such livelihoods significance within traditional assessment approaches.
- Official data at province and district level tends to identify poor communes rather than communes in which there is poverty. Targeting based on these criteria may therefore overlook significant numbers of people who are poor, but not resident in communes officially classified as poor.
- Despite a large volume of socio-economic data on aquaculture, the vast majority deals with production systems, input-output analyses, and cost-benefit analyses. There is no data available within the aquatic resource sector on the role of aquaculture in poor people's livelihoods that adopts a livelihoods framework.
- Official data either fails to break down the range of aquatic resources and resources systems, and/or fails to disaggregate into wealth categories.
- Participatory Poverty assessments have revealed the diversity of poverty in Vietnam.

- Participatory Poverty Assessments also overlook the full significance of aquatic resources in poor people's livelihoods. Even when passing reference is made to aquatic resources, there is no discussion within the reports.
- Poverty issues have not been addressed within the fisheries sector. Where there have been attempts to promote aquaculture under a poverty-alleviation initiative evidence suggests that the poor have rarely benefited, or even been targeted, although poor regions have been targeted.
- Data on capture fisheries does not discuss the wealth categories of professional fishers. Data on professional fisheries overlooks what can be anticipated to be a far larger number of people who combine fishing with other livelihood strategies, and who are not classified and do not classify themselves as 'fishers'.
- Preliminary evidence from the main research initiative concerning wild fisheries in the region (the Assessment of Mekong Fisheries Project of the Mekong River Commission) suggests that inland capture fisheries remain of considerable importance in rural livelihoods in the Mekong Delta. As with other similar assessments however, the significance of aquatic resources according to wealth categories is not available.
- There is some data available concerning poor coastal fishing communities. This tends to be available from research projects rather than official sources.
- Much of the official data on aquatic resource consumption is rather limited. There is some contradiction between VLSS and FAO nutritional data. VLSS clearly indicates that aquatic resources are of great nutritional significance in Vietnam, and more so for poor people.
- There is growing evidence to indicate that dependence on aquatic resources is correlated to poverty, and that aquatic resources constitute an important component of wider livelihood strategies (largely from the Mekong Delta). In many contexts, wild aquatic resources including non-fish aquatic animals are of particular importance in poor people's livelihoods.
- Coastal fishers are identified as a particularly poor group, and not well represented within the main poverty alleviation campaign, the 1726 Poor Communes of HEPR.
- Although the poor face many constraints to entry into the aquaculture sector effective targeting of simple technologies, with appropriate credit, marketing and other inputs support, does allow for significant involvement of poor people. Much of this type of support requires more effective co-ordination between the DOF and other government and non-government agencies.
- The major impediment to poor people's entry into the aquaculture sector is in terms of effective targeting based upon assessment of poor people's needs, and the constraints and potential to entry. Simple aquaculture technologies that are appropriate to poor people are largely in place but require greater effort in terms of extension. Government extension agencies are dominated by technological concerns, often including extensive research, rather than in delivering these simple, low cost technologies to poor people.
- Many rural people who are dependent on wild capture fisheries are almost by definition to be considered poor. There is therefore considerable potential for addressing poor people through interventions directed at these fisheries, and considerable evidence from Asia of types of intervention that might be appropriate.

The Sustainable Livelihoods approach offers considerable potential for developing:

- Appropriate understandings of poverty, and for identifying the importance of aquatic resources in poor people's livelihoods. A means for bringing the poverty alleviation and aquatic resource sectors closer together in order to:
- Develop effective targeting,
- Devise appropriate interventions whether based on aquaculture or on wild fisheries management,
- Monitor impact,
- And on a broader scale for creating more responsive delivery institutions.

Appendix 1: WHAT IS POVERTY

The FAO Nutrition Country Profile (1999) Poor nutritional status of pregnant women

- Over 50% of births outside health facilities, and even higher rates in rural areas
- High incidence of Chronic Energy Deficiency (CED) and anaemia

World Bank and DFID 1999, PWG 2000):

- Poverty has declined in Vietnam, as indicated by rising per capita expenditures and improving social indicators (see GSO Vietnam Living Standards Survey 1998), and assessments of poor people's own perceptions (see PWG 1999, Action Aid 1999, Oxfam 1999, Save the Children 1999).
- The majority of poor people are in rural areas, with a widening gap between rural and urban areas. According to DFID (1998) 80% of the population of Vietnam and 90% of poor people are in rural areas. However, incidences of poverty persist in some urban areas.
- Poor people lack access natural resources particularly to land, and to good quality land – defined by poor people according to a range of criteria for example, soil type, slope, and access to irrigation. Significantly access to aquatic resources is not well covered in these reviews.
- Poor people tend to be excluded from, or less able to access development initiatives, for example credit programmes and are excluded from the decision-making process.
- Poor people remain vulnerable to natural disasters and degradation of natural resources, as well as health crises (see UN 1998 and DFID 1998). Minor shocks can have devastating long-term effects on poor people's livelihoods.
- Inequality between regions persists despite progress in all regions. For example the Poverty Working Group (1999) compares increases in expenditure (as an indicator of improvements in people's standards of living) in the Northern Uplands of 31% with increases in the South East of 78%. (These issues are discussed below).

Poverty is manifest in a wide variety of forms with poor households displaying a range of characteristics. For example, the UN (1998b p.13) presents the characteristics of poor rural households as being those encountering:

- Isolation (geographic, linguistic and social)
- Excessive risk (from typhoons, floods, pests, illness, unplanned births)
- Lack of access to available resources (particularly land and credit)
- Lack of sustainability (financial and/or environmental)
- Inadequate participation (of rural households in planning and implementing public policies and poverty-alleviation programmes)

The PWG (1999), World Bank and DFID (1999) and DFID (1998) provide more detail of the characteristics of poor households:

- Farmers reliant on on-farm employment
- Few options for generating stable cash incomes
- Lack of off-farm employment opportunities
- Farming systems, and wider livelihood resource base, not diversified
- Low levels of education
- Small landholdings or landless
- Lack of access to capital and savings
- High levels of indebtedness

- Chronically hungry
- High ratio of dependants within the household – particularly higher numbers of children within the household (DFID 1998, PWG 1999) and lower number of able-bodied labour (for example, due to death, illness of migration).
- Elderly households,
- Newly established households – often unable to gain access to sufficient, productive resources
- Vulnerable to seasonal hardship, household specific and community wide shocks (PWG 1999 p. vi). This may include lack of food (or limited choice of basic foods), or periods of high borrowing and subsequent debt. – And may be the result of poor harvests, market shocks, natural disasters
- Vulnerable to health crises and natural disasters (DFID 1998). FAO (1999) also note that the poor are particularly vulnerable to malnutrition during May and October as a result of reductions in availability of food and leading to increases in infectious diseases such as diarrhoea and respiratory infections (also see Bloem et al 1995). As the South is also vulnerable to flooding there is a corresponding problem of lack of sage drinking water.
- Socially and physically isolated – weak access to markets and health care, often unable to participate in poverty-alleviation initiatives (for example, credit programmes), and unable to participate in policy-making processes
- Ethnic minorities. Although PWG (1999) notes that 'poverty among ethnic groups has declined, but not as rapidly as among other groups' (p.vi). DFID (1998) suggests that 13.6% of ethnic minorities are categorised as 'very poor'. Ha (2000 p.6) also discusses poverty among ethnic groups concluding 'ethnic minorities have a much higher incidence of poverty than the national average ranging from 66% among the Tay to 100% of the Hmong (World Bank 1995). All the ethnic minorities except Hoa are 50% to 250% poorer than the Kinh. Average household expenses are 60% of the Kinh's (Poverty Alleviation in Vietnam 0/1995)."
- Migrants – the reports refer specifically migrants to urban areas, but there is also a question of migrants between rural areas, and of migrants in rural areas being compelled to utilise whatever resources are available, typically more degraded and marginal resources. Evidence from the Mekong Delta (see Friend and Dubeau 1999) suggests that migrants are not included in commune population and poverty statistics. Such migrants tend to be landless and more dependent on fishery resources.
- Children – particularly vulnerable to health crises, and malnutrition
- Women may work a higher number of hours and lack access to secondary education and health care within the household (DFID 1998). Indicators of women's health – poor nutritional status of pregnant women (FAO 1999).

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