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THE CONTRIBUTION OF RESEARCH TO THE SUSTAINABLE LIVELIHOODS OF ARTISANAL FISHING COMMUNITIES

Overview and Final Report of a study conducted in West Africa

(Cameroon, Guinea, Mali, Mauritania, Nigeria and Senegal)

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This report summarises the main results of studies carried out within the framework of the SFLP. It is based on reports from six national teams (see Bibliography). Nevertheless, the analysis and recommendations made in this document remain the sole responsibility of the authors.

This report was validated during the validation and restitution workshop held in Cotonou , Benin, on 12-14 June 2002.

EXECUTIVE SUMMARY

Background and rationale

In September 2001, the Sustainable Fisheries Livelihoods Programme (SFLP) commissioned this study of the contribution of research to the sustainable livelihoods of artisanal fishing communities. The study covers six countries in the region: Cameroon, Nigeria, Mali, Guinea, Senegal and Mauritania. It was based on the following observations: that linkages between artisanal fishing communities, policies and institutions and research are generally weak; and that research does, nevertheless, have an important contribution to make in improving livelihoods through the generation of knowledge and technological innovations.

The overall study was co-ordinated by two international specialists in research-resource user linkages and national studies were implemented by the national fisheries research institute in each country, through multidisciplinary research teams involving representatives from research institutes, government policy departments, NGOs and private sector consultancies. Each country team produced 4 interim reports covering the core study themes: (i) identification of key livelihood groups involved in artisanal fisheries; (ii) evaluation of the existing potential of fisheries research at the national level (including social science research on fisheries) and eventual contribution to livelihoods, and analysis of existing linkages between research and fisheries resource users; (iii) study of the effects of policies, institutions and processes (PIP); and (iv) identification of key lessons and activities to improve research-user linkages so as to increase the contribution of research to artisanal fishers' livelihoods. The methodology drew on core SL principles (e.g. partnership, participation; multidisciplinary analysis and macro-micro level linkages) and involved a process of validating results with a range of actors at national level.

This overview presents some key issues that emerge from the six detailed country studies, highlights lessons identified, and identifies priority recommendations to improve the contribution of research at the national and sub-regional levels.

Key issues

Livelihood groups in artisanal fishing. The study revealed the great diversity in livelihood groups that use or depend on artisanal fisheries resources for a living. These range across upstream and downstream aspects of production – from fisherfolk through to traders and boat mechanics. There is some gender specialisation of tasks and varying degrees of migration – the most important aspect of which is the need to migrate in order to follow a moving resource. Attempts to analyse the degree of vulnerability of each group reveal a wide range of factors affecting vulnerability in each context. Surprisingly perhaps, while in certain contexts fishers have the potential to gain the highest surplus, they have to make the heaviest capital investments and are often the most vulnerable group. The Nigeria study attempted to reflect this by developing a quantitative analysis of the costs of vulnerability.

Research providers. In each country, it is clear that a wide range of actors is involved in fisheries research. These include public sector research institutes, State funded universities, international NGOs, the private sector and development programmes. Some strengths in fisheries research are identified: incorporation of research themes on artisanal fisheries following participatory processes; existence of formal and in some cases informal frameworks for collaboration between the different actors in the sector; changing status of research institutions that encourage researchers to be more innovative and oriented towards development (e.g. Mali and Senegal). However, partnerships between actors are patchy. Further, in most cases there is a deficiency in capacities for socio-economic analysis and limited experience in participatory research. In all countries national research institutes are

hampered by a major funding crisis that also undermines the contribution of agricultural research more broadly to development and improved livelihoods across the developing world.

Policies, institutions and processes. The existence and effectiveness of mechanisms for fisheries research to contribute in the area of PIP vary. Nonetheless, the study shows clearly that fisheries research has the potential to make a strong contribution: enabling policy makers to make informed decisions, formulate appropriate laws on resource use and contribute effectively to wider processes (e.g. international negotiations of fisheries resources). However, public research institutions have taken a long time to adapt to the requirements of a development orientation and general factors in the PIP context have constrained their ability to contribute to improved livelihoods: e.g. structural adjustment has led States to reduce their investment in research such that it becomes ever more dependent on dwindling international funds.

Lessons and implications

Ten principal lessons are identified.

1. Despite deficiencies noted, there has been a positive evolution in thinking and approaches in research institutions covering fisheries in the last decade (e.g. addressing PIP issues; move towards a development orientation).
2. Promotion of local rules for fishery resources management with high involvement of local communities
3. Producer organisations in artisanal fisheries are generally weak when compared to those that exist in other natural resources sectors such as agriculture and animal production.
4. Fisheries research has contributed substantially to the improved livelihoods of fisheries communities and to addressing issues in the policy and institutional context (e.g. providing information and innovations to policy makers).
5. It will be possible to capitalise more on the contribution of socio-economic research, for example in strengthening the capacities of fisheries communities.
6. Several countries do not place high priority on fisheries research, and their sectoral allocation of resources prioritises other areas of production. Furthermore, there is a general financing crisis faced by agricultural research.
7. Fisheries research institutes have found it difficult to develop effective demand-driven approaches to research.
8. There are very few examples of direct partnerships between research and fisheries communities or their representatives.
9. There is a general lack of mechanisms, or frameworks, for communities to learn from research – much due to failures in extension.
10. Incoherence of some government policies may be having negative effects on artisanal fishers' livelihoods (e.g. support in principle for the profession of artisanal fishing, but promotion in practice of increased industrial fishing).

Actions needed

Fifteen actions needed to improve the contribution of research to artisanal fishers' livelihoods are identified. Priority actions are grouped under four headings:

- Strengthen the institutional, management and strategic planning capacities of socio-professional organisations in the artisanal fishing sector.

- Strengthen or establish mechanisms for partnerships between research and fisheries communities.
- Strengthen the capacities of fisheries research institutions (e.g. sustainable financing; improved skills, particularly in social science and participatory approaches).
- Strengthen the contribution of fisheries research to policies and livelihoods (e.g. creation of a liaison body bringing together representatives from research, policymakers and artisanal fishers; establishing mechanisms to apply research results to constraints and opportunities that exist at the community level).

Recommendations

Drawing on the analysis of the country studies presented in this report, the authors make seven recommendations to the SFLP in order to improve the contribution of research and bring about changes in practice.

1. Publication of this overview report and broad dissemination in hard copy to research institutions, policymakers and development actors in all 25 countries involved in the SFLP. This report should also be made available through the web.

2. Dissemination of study results in the 19 programme countries that did not participate in this study through sub-regional workshops involving representatives from research, extension, artisanal fisheries resource users, NGOs, private sector). This activity can be undertaken through or with the support of sub-regional and international networks.

3. Provision of funds in study countries for pilot activities to support partnerships between research and communities for the participatory development of innovations.

4. Training for research institutions in participatory approaches in countries where such a need is expressed.

5. Improve capacities of research institutes to communicate results effectively, even through new media (e.g. radio).

6. Strengthen country level capacity for analysing the impacts of fisheries research.

7. Encouragement to governments to foster national debate on improving the orientation and sustainable financing of fisheries research.

Immediate follow-up

Drawing on the analysis and recommendations above, five suggestions are made for immediate follow up to this study, identifying actors responsible and strategy.

Sub-regional level

i) Publication and dissemination of this overview report (by RSU before end September 2002).

ii) Share lessons from the study in the 19 other countries covered by the SFLP through two to three sub-regional workshops (by RSU before end October 2002).

iii) Identify priority actions to implement as part of country level programme initiatives according to classification of priorities at Programme-wide level (by RSU before end December 2002).

National level

Editing, publication and distribution of a hard copy of the detailed national reports (by NCU in each country before end July 2002).

Drafting and dissemination of Advisory Notes to decision-makers.

Organisation of national multi-stakeholder workshop to consider the implementation of recommendations and the responsibilities of each actors (by NCU in each country before end October 2002).

This synthesis report, the six country reports and Advisory Notes for decision-makers, provide tools that can be used to guide changes in the organisation of fisheries research. They might also serve to underpin proposals for actions to enhance the role of fisheries research both in policy and at the level of the livelihoods of artisanal fishing communities.

Acronyms and Abbreviations

ADAMAM:	Association pour le Développement des Activités de Mareyage de Mboa-Manga (Cameroun)
ADF:	African Development Foundation
AMED:	Approches moyens d'existences durables
APCAM:	Assemblée Permanente des Chambres d'agriculture du Mali
APPM:	Association des Pêcheurs et Pisciculteurs du Mali
APRAM:	Association des Pêcheurs Résidents au Mali
CCPR:	Code de Conduite pour une Pêche Responsable
CERESCOR:	Centre de Recherche Scientifique de Conakry – Rogbanè (Guinée)
CMS:	Crédit Mutuel du Sénégal
CNCPM:	Conseil National Consultatif des Pêches Maritimes
CNCR:	Conseil National de Concertation des Ruraux (Sénégal)
CNSHB:	Centre National des Sciences Halieutiques de Boussoura (Guinée)
CNPS:	Conseil National des Pêcheurs Artisans du Sénégal
CNRA:	Comité National de la Recherche Agricole (Mali)
CNROP:	Centre National de Recherches Océanographiques et des Pêches (Mauritanie)
CONAPEG:	Confédération Nationale des Professionnels de la Pêche en Guinée
CRAT:	Centre Régional Africain de Technologie
CRODT:	Centre de Recherches Océanographiques Dakar-Thiaroye (Sénégal)
CREDETIP:	Centre de Recherche pour le Développement de Technologies Intermédiaires de Pêche (Sénégal)
CRU:	Commissions Régionales des Utilisateurs (Mali)
DFID:	Department for International Development (Coopération du Gouvernement Britannique)
DRSP:	Document de Stratégie de Réduction de la Pauvreté
EPA:	Etablissement public à caractère administratif
EPST:	Etablissement public à caractère scientifique et technique
FAO:	Food and Agriculture Organization of the United Nations
FCFA:	Franc CFA
FENAGIE-P:	Fédération Nationale des Groupements d'Intérêt Economique de Pêche (Sénégal)
FENAMS:	Fédération Nationale des Mareyeurs du Sénégal
FIDA:	Fonds International de Développement Agricole
FISON:	Fisheries Society of Nigeria
FPFD:	Fédération des Paysans du Fouta Djallon (Guinée)
FNPCG:	Fédération Nationale des Planteurs de Café de Guinée
FNP:	Fédération Nationale de Pêche (Mauritanie)
FNRAA:	Fonds National pour la recherche agricole et agro-alimentaire (Sénégal)
GIE:	Groupement d'Intérêt Economique
GTZ:	German Technical Cooperation
IER:	Institut d'Economie Rurale (Mali)
IMROP:	Institut Mauritanien de Recherches Océanographiques et des Pêches (ex CNROP)
INERA:	Institut de l'Environnement et de Recherches Agricoles du Burkina
IRAD:	Institut de Recherche Agronomique pour le Développement (Cameroun)
IRAG:	Institut de Recherche Agronomique de Guinée
IRD:	Institut de Recherche en Développement
ITA:	Institut de Technologie Alimentaire (Sénégal)
MANOBI:	Société spécialisée en exploitation des technologies Internet et téléphone mobile (Sénégal)
ME:	Moyens d'existence

MED:	Moyens d'existence durables
NACCIMA:	Nigerian Chamber of Commerce, Industry, Manufacturing and Agriculture
NCA:	National Council on Agriculture (Nigeria)
NIFFR:	Nigerian Institute for Freshwater Fisheries Research
NIOMR:	Nigerian Institute for Oceanography and Marine Research
NUFSD:	Nigerian Union of Fisherman and Sea Food Dealers
OCEANIUM:	Association Sénégalaise travaillant sur la protection et conservation des ressources naturelles
ODI:	Overseas Development Institute
ODRS:	Office de Développement Rural de Sélingué (Mali)
OPM:	Opération Pêche Mopti (Mali)
PIB:	Produit Intérieur Brut
PIP:	Politiques, institutions et processus
PMEDP:	Programme pour des Moyens d'Existence Durables dans la Pêche
PNBA:	Parc National du Banc d'Arguin (Mauritanie)
PNVRA:	Programme National de Vulgarisation et de Recherche Agricole (Cameroun)
SFLP:	Sustainable Fisheries Livelihoods Programme
SOWEDA:	South West Development Authority (Cameroon)
TdR:	Termes de référence
UCN:	Unité de Coordination Nationale (PMEDP)
UICN:	Union Mondiale pour la Nature
WWF:	World Wildlife Fund

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1. STUDY CONTEXT AND OBJECTIVES

1.1. The SFLP

The Sustainable Fisheries Livelihoods Programme (SFLP) was established in 1999, initially for a 5-year duration. It is a programme funded by the Department for International Development of the United Kingdom (DFID) and executed by the United Nations Organisation for Food and Agriculture (FAO) in collaboration with the governments of the countries involved. It covers 25 countries in West Africa, 20 coastal countries and 5 landlocked, in which livelihoods of about 7 million people depend on the utilisation of aquatic resources. The Regional Support Unit (RSU) based in Cotonou, Benin is implementing the programme in collaboration with National Co-ordination Units at country-level.

The main objective of SFLP is to assist the artisanal fishing communities (coastal and inland) to improve their livelihoods through the sustainable use of aquatic resources thus reducing poverty.

The SFLP will also assist governments in drawing up policies and action plans which take into consideration principles of the Code of Conduct for Responsible Fisheries (CCRF) informed by the the Sustainable Livelihoods Approach (SLA).

It will also assist the grass-roots communities to develop their capacity to participate more effectively in the planning and development of fisheries and thus strengthen or even create, a link between the communities (micro level) and the local, regional and national structures (meso and macro levels).

The primary beneficiaries of SFLP are the fishing communities in particular the fishermen, the processors and the petty traders throughout the 25 countries. The secondary beneficiaries are the Fisheries Departments, the NGOs, the sectoral planners and all other persons having some responsibility in the development of the fisheries sector and poverty alleviation.

The SFLP bases its actions on three considerations:

- The existence of important threats and constraints to the sustainable utilisation of aquatic resources by artisanal fishing communities.
- The possibility of improving their livelihoods and alleviating poverty within these communities though responsible development.
- The use of an appropriate approach (SLA) and elements of the CCRF permitting (i) an improvement in the participation of actors in the process of responsible and sustainable co-management implying a sharing of responsibilities on the sustainable use of resources (ii) the encouragement of a more equitable distribution of generated profits.

One of SFLP's roles is to assist in creating the necessary climate so that the communities are in a position to evaluate their environment and their situation. In order to do this, the SFLP is developing a participatory approach, which enables it to undertake sensitisation and capacity-building actions in order to develop reflection, analysis and discussions within the communities.

SFLP initiatives are articulated through:

(i) Community projects focusing on specific actions in response to a local problem and aimed especially at enhancing the assets of fishing communities.
(ii) Pilot projects, which are large-scale actions, executed on a regional or sub-regional level.
(iii) Institutional support that is provided on a case-by-case basis in response to a request (this study falls into this category).

1.2. Objectives of the study on the contribution of research

This study covers six countries associated with SFLP, Cameroon, Nigeria, Guinea, Mauritania, Senegal and Mali. The study is based on one main observation: the links between the artisanal fishing communities, the policies that influence their livelihoods and research, are weak. But at the same time, it is assumed that the contribution of research can be important in the improvement of livelihoods by generating knowledge and technological innovations.

Consequently, the commissioned study deals with the linkages existing between research and fishing communities and the present and potential contribution of fishery research to the improvement of the SL of fishing communities in the sub-region. The study lasted nine months and covered five specific areas:

i) Identification of the diversity of the major livelihood groups and community/group strategies using fisheries resources.;

ii) Evaluation of the potential of fishery research (including research in social sciences) and probable contribution to SL;

iii) Analysis of links existing between research institutions (fisheries and social sciences) and links between research and users of fisheries resources;

iv) Study of the effects of policies, institutions and processes (PIP) on research into SL and the contribution of fisheries and socio-economic research on the PIPs;

i) Identification of key lessons and activities to improve the contribution of fisheries research to the reduction of communities making a living from artisanal fishing..

2. METHODOLOGY AND LIMITATIONS OF THE STUDY

2.1. Methodology and Approach

The implementation of the study was based on the following global organisation:

i) The conduct of case studies in each of the six countries chosen by a multi disciplinary, multi-institutional team

ii) The global coordination and direction of actions by two international consultants also mandated with the general synthesis of the results of the study.

The study methodology was designed on the basis of four priority areas of investigation described in the TdR (Annex 5) of the study:

- The identification of the diversity of SL groups concerned by artisanal fishing and their strategies
- The potential and the contribution of fishery research to the SLs of these populations;
- PIPs in research;
- Key lessons and activities to improve the contribution of research.

In relation to the basic principles of the SLA, this study has been conducted in partnership with public and non-governmental actors, emphasising dialogue and participation at all stages. The participatory approach of this study was demonstrated first at a planning workshop organised by the SFLP in Cotonou (Benin) in October 2001. This meeting brought together representatives of the NCUs, fisheries research and the NGOs with the aim of examining, validating and finalising proposals on methodologies and also come to an agreement on expected outputs of the study and the responsibilities of each actor. A summary of some indicative methodologies as well as distribution of tasks is to be found in Annexes 1 and 2.

The other elements of the methodology comprised the following key points:

i) Constitution of national work teams according to a participatory approach. In all the countries concerned, multi-disciplinary and multi-institutional teams (including representatives of public institutions: Research, University, Support Structures, NGO, professional organisations….) were set up.
ii) Data collection in relation to the five major study points.
iii) Data processing and the drafting of interim outputs and final documents.
iv) Validation of interim and final outputs at country level. Thus, in each country, national validation workshops were organised and brought together all categories of actors involved with the subject (Users, Researchers, Technicians, Decision-makers ….).

This participatory approach, developed throughout the different stages, was designed to guarantee the final appropriation of the outputs in each country and contribute to the building of the capacities of research institutions involved.

2.2. Limitations of the study

One of the major limitations to the study was the fact that meagre financial resources did not permit the international consultants to give more sustained support to the different nationals at certain critical times. This led to bias in the acquisition of certain data as well as the detailed consideration of certain analysis. This drawback is the reflection of imbalances found between national documents in terms of the amount of qualitative and quantitative information. Of course this situation obviously has consequences on the depth of certain analysis made in this synthesis.

3. LIVELIHOODS GROUPS CONCERNED WITH ARTISANAL FISHERIES

The six national reports give an informative view of the diversity of groups of users of artisanal fisheries resources. In each country 6-7 major livelihood groups have been defined. Showing the diversity great diversity of actors involved and their interests. Characterisation of the different groups focused on the following factors:

- identification of major groups and characteristics/ key strategies;
- analysis of the livelihood opportunities (capital) and constraints related to them;
- vulnerability of groups;
- gender differences;
- organisational level of various SLs.

The detailed analysis of these groups and their vulnerability context are presented in the six national reports. Here, we present an overview of characteristics of the groups found in almost all the countries (Table 1). Box 1 gives an example of characteristics of two groups of livelihoods in Guinea: fishermen and processors. They show the difference or diversities in characteristics, constraints or strategies.

The results on the livelihood groups show the importance of fishery research taking into account all the categories of actors acting both upstream and downstream. This enables a response to the specific constraints and increased impact on all the groups involved: fishermen, wholesale fish merchants, boat owners, processors, service providers etc..

Table 1: Synthesis: Some livelihood groups in artisanal fisheries

SL Group	Main Characteristics	Key aspects of "Gender"	Key strategies	Major constraints relating to capital	Key vulnerability factors	Observations
Fishermen	(a) Do not own fishing gear (b) Are employed by ship owners (c) Are paid by the piece/part	(a) Groups consisting mainly of men (at least 80%) (b) Groups consisting of indigenous and non indigenous settlers	(a) Are very mobile and follow the movement of the resource (migration) (b) Some engage in secondary activities (agriculture, cattle – rearing, petty trading…) (c) Good organisation within the group	(a) Certain fisheries resources are endangered (diminishing resources) (b) Illiteracy of communities (c) Low level of training (professionalism) (d) Inadequate organisation and supervision (e) Limited access to credit (f) Inadequacy or absence of basic infrastructure (education health, roads….) (g) High costs of inputs (h) Difficult access to land for farming	(a) Frequent disputes between industrial and artisanal fishermen (non-respect for zones) (b) Rebel incursions in some countries (Guinea) (c) Piracy at sea and insecurity (risk of loss of life) (d) Inadequate application of texts in some countries (e) Slow-down in fishing activities at certain times of the year (f) Disputes between indigenous and settler fishermen (g) Changes in policies (disengagement, liberalisation…) (h) Difficult access to credit	(a) These groups are relatively well organised (professional organisations)
Wholesale fish sellers	(a) Derive most of their income from fish selling (b) Employ pieceworkers	(a) Groups comprise men and women in different proportions depending on the country: a.1. Mostly women (Mauritania) a.2. Especially women (at least 90%) (Cameroon, Guinea, Mali, Nigeria, Senegal)	(a) Include smoking activities in some cases (b) Diversify their activities (c) Pre-finance fishing trips (d) Are mobile	(a) Illiteracy (b) Low level of training (professionalism) (c) Inadequate organisation and supervision (d) Lack of inadequacy of storage, transport infrastructure (e) High rates of interest and inflation	(a) Landlocked zones of fishing activities especially in the winter period (b) Inadequacy or lack of credit institutions (c) Inadequate resource and seasonal fluctuation in its availability (seasonality of the activity)	
Processors	(a) Own processing equipment (b) Derive most of their income from processing	(a) Group comprises mainly women (98%)	(a) Often on the fish seller circuit (b) Often pre-finance fishing trips (c) Diversification of species processed and sources of supply (d) Diversification of activities by integrating petty trading (e) Rarely migrate	(a) Fishery resources threatened by over-exploitation (diminishing resource) (b) High illiteracy rate (c) Low level of training (professionalism) – Ignorance of quality standards (d) Activity-related sanitation problems (e) Inadequate organisation and supervision (f) Difficult access to credit (g) Diminishing wood energy resources	(a) Seasonal disappearance of the resource to be processed (b) Reduction in forestry resources due to intensive utilisation of forestry resources by development projects) (c) Inadequacies of infrastructure (motorways, cold chains, transport …) (d) Macro-economic policies (liberalisation, elimination of subsidies..)	(a) Groups more often than not well-organised and structured

Table 1 (contd): Synthesis: Some livelihood groups in artisanal fisheries

SL Group	Main Characteristics	Key "Gender" issues	Key strategies	Main constraints regarding capital	Key vulnerability factors	Observations
Ship owners	(a) Own fishing gear (b) Finance fishing operations; often employers of fishermen	(a) Group comprising mostly men (90%)	(a) Migrate with crews in order to better supervise activities (b) Remain linked to the fishermen with whom they form co-operatives or associations (c) Practice other activities to diversify their sources of income (agriculture,…)	(a) Fisheries resources threatened by over -exploitation (b) High illiteracy rates (c) Inadequate knowledge of normal regulatory texts in some cases (d) Inadequate level of organisation and supervision (e) Obsolete equipment and lack of safety equipment at sea (f) Difficulty in accessing credit and high level of inflation	(a) Disputes between artisanal and industrial fishermen (b) Ineffective application of regulatory texts is the cause of conflict (c) slow down in fishing activities at certain period of the year	(a) These groups are often well-organised (professional organisations)
Mechanics	(a) Work exclusively on the engines and outboard motors (b) Paid piecemeal	(a) Groups made up of men	(a) Set up mainly on larger jetties	(a) Low level of qualification for some (professionalisation) (b) Poor organisation and supervision (c) Scarcity and expensiveness of motors and spare parts (d) High inflation and interest rates	(a) Scarcity and expensiveness of motors and spare parts following State disengagement from import circuits (b) Weak or absent credit institutions (c) Slow down in fishing activities at certain period of the year (fall in demand for repairs)	
Boat Builders	(a) Build and repair boats (b) Only set up on big landing jetties (c) Are paid per job or for the sale of equipment	(a) Groups exclusively comprising men	(a) Have other activities (agriculture, petty trading…) (b) Are not mobile	(a) Some forestry resources endangered by over-exploitation (b) Low level of training (professionnalisation) (c) Poor organisation and supervision	(a) Deforestation accompanied by reduced wood resources (b) Weak or absent credit institutions (c) Slow down in fishing activities at certain period of the year (seasonality of demand) (d) Macro-economic changes which affect prices of materials	(a) Groups more often than not well organised and structured
Net makers	(a) Produce and repair nets (b) Are remunerated piece meal	(a) Groups comprise mainly men (b) But some women and youth are involved in the maintenance and upkeep of the nets	(a) Have other activities (agriculture, petty trading,…) (b) Are often mobile		(a) Reduction in the resource and fishing activities at certain times of the year (lower demand for maintenance)	

Box 1: Fishermen and fish processors in Guinea

Fishermen

Main characteristics

i) Do not own fishing gear
ii) Are employed by boat owners
iii) Are remunerated piecemeal/share basis
iv) Fishing constitutes the sole source of income for full-time fishermen and more than 50% for the multi-disciplinary (exercising several activities)
v) Group comprising exclusively men (minimum age 15; average 36 years)
vi) Group linked to professional organisations (ex: National Union of artisanal fishermen of Guinea – UNPAG)

Key Strategies

i) Migrate frequently and follow the movement of fishery resources
ii) Some of them have secondary activities (agriculture, cattle rearing, petty trading ….)

Major constraints related to capital

i) Shrinkage of the resource
ii) High illiteracy levels
iii) Low level of training and supervision (lack of professionalism)
iv) Difficult access to credit
v) Difficult access to land for those engaged in farming
vi) Absence or inadequacy of basic infrastructures (education, health, roads, food, water…)

Vulnerability

i) Seasonality of the activity (reduced resources in certain periods of the year)
ii) Frequent disputes between artisanal and industrial fishermen (destruction of fishing gear) – Inappropriate application of current regulatory texts (non observance of fishing zones)
iii) Insecurity at sea (risk of loss of life): rebel incursions (2000-2001)
iv) Change in policies (disengagement, liberalisation,…): high cost of inputs, inflation,…

Fish Processors

Main characteristics

i) Are owners (individually or collectively) of processing equipment
ii) Obtain most of their income from fish processing
iii) Group comprises mainly of women (90%) average age 44 years
iv) Group showing solidarity and organisation (ex: Co-operative of Female Fish Smokers of Bonfi – COFFUB)

Key Strategies

i) Often on the same circuit as the wholesalers
ii) Often pre-finance fishing trips (to have better access to the resource)
iii) Rarely migrate

Major constraints related to capitals

i) Reduction in the resource to be processed (seasonal variations in the volume of processing activities)
ii) High level of illiteracy
iii) Low level of training and supervision (lack of professionalism)- Quality standards not taken into account
iv) High rates of inflation and interest
v) Deterioration in health status due to smoke

Vulnerability

i) Reduced wood resources
ii) Seasonal variation in the availability of the resource for processing
iii) Rebel incursions (affecting the availability of the resource to be processed)
iv) Embezzling of working capital by crew members

Source: Guinea national report

The following findings emerge from the analysis of national reports:

- in order to initiate a response to the needs of the various groups it is first of all necessary that the research be aware of the great diversity of SL groups depending on fishery resources and the specific constraints which affect each of them ;
- there is a similar diversity of SL groups existing in areas of maritime and inland fishing (see the reports from Nigeria and Mali where the two types of fishing are present);
- almost everywhere across the board it appears that "fishermen" exercise other income-generating activities to diversify their livelihoods (ex: agriculture, net production, petty trading)
- access to SLs by different groups largely depends on capacities, assets and the financial status of the individuals concerned (the obstacles to access to resources are not always clear-cut);
- some groups are dominated either by women or by men: for example, apart from a few exceptions, most of the fishermen are men while the processing (smoking for example) is dominated by women; it is the men who have a greater tendency to control the more lucrative activities (ex. offshore fishing on a larger scale), but this is not always true. (see Box 2)
- all the SL groups have little ability to influencing national policies, given the weak links between formal institutions involved in the development of fisheries policies at the macro level and the local population;
- national reports demonstrate the difficulty and the complexity of analysing vulnerability factors: vulnerable groups vary depending on context but in Cameroon and Nigeria the fishermen were identified as being relatively more vulnerable due to numerous factors (ex. seasonal character of fishing, over exploitation of resources and fall in yields, fluctuations in prices of inputs and limited access to credit, changes in macro-economic policies, insecurity, thefts, communal disputes, police harassment and risk of loss life at sea).

Box2: Gender issues in artisanal fishing in Nigeria

In Nigeria, the predominance of women or men in an SL group normally depends on several factors:
- the assets and training required to engage in the activities;
- religious or cultural norms which prohibit certain activities depending on sex in certain regions (ex: in the North of Nigeria, women, and in particular Muslim women of child-bearing age, are forbidden from marketing fish leaving women from the south to dominate this trade).

A lot of work and tasks are distributed on gender basis. Men dominate the following groups: fishers, mechanics, boat builders, and trade in equipment. Women often control the following: processing/conservation of fish products (smoking, drying etc), the fish trade in those places where there are no socio-economic constraints and net production; they are also involved in inland fisheries. It is also to be observed that there is a general distribution between inland fisheries that dominated by women and offshore activities that are the exclusive preserve of the men. This distribution can be explained by maternal responsibilities of women and the danger and loss of life often recorded at sea.

This distribution of work has economic consequences. Whereas the capital costs for maritime fishing are high, the profits made are much more substantial than for river fishing.

Source: National Report, Nigeria; 1US $ = 119.50 Naira

The Nigerian team made an interesting attempt at analysing vulnerability costs for each SL group. The usefulness of the innovative methodology proposed merits further consideration in future research work (see Box 3)

Box 3: Vulnerability costing for artisanal fishing SL groups: Example of fishermen

The vulnerability costs of the fishermen threatened by trawlers are calculated bearing in mind the following factors:
- cost of capital;
- loss of income

The cost of capital is obtained by multiplying the average number of nets destroyed by trawlers in one fishing season by the average cost of a net and the number of fishing communities on the coast threatened by the trawlers.

The loss of income is determined by the product of the value of fish caught on each trip and the average number of trips per fisherman per month per community.

Thus, for this SL group, vulnerability in terms of the cost of capital is estimated at about 18,495,000 Nigerian *Naira*. The vulnerability in terms of loss of income is estimated to be between 34 and 46 millions *Naira.*

Source: Nigeria national report; 1US$ = 119.50 Naira

4. FISHERIES RESEARCH SERVICES PROVIDERS

The concept of providers of research services or "fisheries research" is taken in the widest sense of the term, that is, it refers to all the units where teams (biologists, socio-economists….) working for the generation of technologies and/or knowledge in the area of fisheries. This concept which integrates social sciences seems to be in keeping with the reality of research institutions considered in this study.

4.1. General Situation

4.1.1. Type of Institutions involved

Several institutions are involved in the provision of fisheries research services. The number and nature of institutions involved varies from country to country. Generally speaking, the categories of institutions described below provide research services to different users (fishing communities, political decision-makers……) (table 2).

Public research or training institutions

This category of provider groups' national research institution as well as foreign institutions the most heavily present being the French Institute for Development Research (IDR). It is to be noted that in some countries such as Guinea, the action of foreign, public institutions like IDR are completely integrated into the national structure.

As regards national research institutions in particular, two sub-categories are noted:

(a) Institutions with an exclusive mandate to conduct fisheries research

This is the situation found in countries like Guinea with the CNSHB and the CERESCOR, Mauritania with 'IMROP (ex CNROP), Senegal with the CRODT and Nigeria with NIOMR and NIFFR.

(b) Institutions with no exclusive mandate to conduct fisheries research

This is the situation found especially in Cameroon with IRAD and Mali with IER. Within such institutions, fisheries research is often only a small part of a mechanism which deals with agricultural research and rural development as a whole.

In addition to national research institutions, several national universities are also involved in the provision of fisheries research services. This situation is true almost everywhere with various degrees of involvement depending on the country.

Apart from these training and research institutions, there is a strong involvement of projects, programmes or development bodies in the provision of fisheries research services. This is the situation namely in Mali with ODRS and OPM, in Mauritania with PNBA or Cameroon with SOWEDA. In most cases, these bodies or development projects act on behalf of the fishing communities, as spokesmen to express their needs. They also participate in the funding of research and development activities and ensure dissemination of results obtained.

The general analysis of public institutions reveals that the priority given to fisheries research varies between countries. This priority is often a reflection of the status of the institution and especially, the resources allocated by the Government. Box 4 gives two rather extreme situations in Mali and Mauritania.

Table 2. General situation of research service providers in the countries under review.

Country	Type of institution involved	Service fields covered	Diversity and capacities of providers		Aptitudes in development-centred research	
			Strong points	Weak points	Strong points	Weak points
Cameroon	Public (a) Research Institutions (b) Universities	(a) Generation of technologies and knowledge (b) Creating/Building capacity	Existence of Universities taking into account social sciences (sociology, anthropology….)	(a) Low consideration of fisheries research by the Universities (b) Only IRAD works in the area of fisheries research (c) Dearth of resources in social sciences	(a) Diversity of disciplines represented within the research teams	(a) Low quantitative representation of social sciences (b) Absence of mechanisms for direct partnerships with users (c) Absence of Boxworks or mechanisms for the participation of research in policy formulation (d) Absence of incentives to develop participatory approaches
Guinea	Public (a) Research Institutions (b) University	a) Generation of technologies and knowledge (b) Creating/Building capacity	(a) Existence of a relatively large group of scientists working in fisheries research (b) Existence of multi-disciplinary research teams	(a) low level of involvement of universities in fisheries research (apart from the work done by trainees) (b) Low number of human resources in social sciences within the research institutions	(a) Multidisciplinary research teams (b) Existence of a Boxwork for technical dialogue within the ministry responsible for fisheries	(a) Poor development of participatory approaches (b) Absence of mechanisms for direct partnership with the communities (users)
Mali	Public (a) Research Institutions (b) University (c) Office of rural development Foreign research institutions (a) IRD	(a) Generation of technologies and knowledge (b) Creating/Building capacity	(a) Several research institutions and development bodies investing in the fisheries sector	(a) Fisheries research only represents a tiny part of the total agricultural research mechanism (b) Limited scientific skills (c) Legal status (PAE) of research institutions does not permit mobilisation of adequate human resources	(a) Existence of a system of research-on-demand with the RCUs	

Table 2 (contd). General situation of research service providers in the countries under review.

Country	Type of Institution involved	Service fields covered	Diversity and capacity of providers		Aptitudes in development-related research	
			Strong points	Weak points	Strong points	Weak points
Mauritania	Public (a) Research Institutions (b) University and International NGOs (UICN)	a) Generation of technologies and knowledge (b) Creating/Building capacity	(a) Existence of a national institution specialised in fisheries research and enjoying substantial financial resources	(a) Marginal action of the university in fisheries research (b) Legal status (PAE) does not afford flexibility in management (effectiveness) (c) Unattractive status limiting development and the maintenance of scientific skills	(a) Initiatives to consider users as partners in research (b) Development of participatory approach in certain projects	(a) Research Institution designed solely to provide assistance in decision-making to the supervisory ministry. (b) Institution not really seen as a tool for users (c) Absence of direct partnerships research –users (d) Poor motivation of communities to collaborate with research
Nigeria	Public (a) Research Institutions (b) Universities	(a) Generation of technologies and knowledge (b) Creating/Building capacity	(a) Research institutions possessing wide variety of scientific skills and taking social science specialities into account	(a) Inadequate /insufficient financial allocation	(a) Some training and updating in the participatory approach for officers in some co-operation agencies (GTZ) (b) Existence of linkage mechanisms users-policies (NCA)	((a) Inadequate incentives for training in participatory approaches for researchers
Senegal	Public (a) Research Institutions (b) Universities, International Institutions (IRD and IIED), International NGOs (UICN, WWF and CREDETIP)	a) Generation of technologies and knowledge (b) Creating/Building capacity	(a) Great diversity of institutions active in fisheries research (b) Existence of a focal research institution (CRODT) endowed with PSTE status	(a) Inadequate human and financial resources at the main institution (CRODT) – Marked weakness in social sciences (b) Multiplicity of technical and administrative supervisors from different fisheries research institutions which does not allow for synergy of action (c) Absence of a national fisheries research system	((a) Participatory approach encouraged through research activities (b) PSTE status motivating staff to produce and ensuring better direction of research programmes by users (c) Establishment of FNRAA with a view to promoting a system of research-on-demand, to guarantee output and quality of service delivery	

Box 4: Priority given to fisheries research

Case of Mali

Economic value of fisheries

i) More than 40 billion CFAF turnover per annum
ii) 4.2% of the GDP and 3% of the total value of exports
iii) 500,000 jobs created

Situation of fisheries research service providers

i) Fisheries research disseminated within several institutions including research, development and university institutions
ii) A fisheries research team (core) within an institute with a general mandate for agricultural research in the broadest sense of the term (IER)

Scientific skills

i) A total staff of 7 specialists out of the 100 in IER handle fisheries research
ii) Low resource allocation for the fisheries sector (78% of financial resources are earmarked for agricultural research, 21.8% to zoological and forestry research as against 0.18% for fisheries research). Budget allocation for fisheries research was 111.7 million in 4 years (1997-2000)

Case of Mauritania

Economic value of fisheries

i) 10% of the GDP, 29% of budget receipts and 50% of export receipts

Situation of fisheries research service providers

i) One main institution for fisheries research (IMROP) mandated to conduct fisheries research at national level
ii) Other institutions like the University collaborating with IMROP for some fisheries research in the frame work of student training.

Scientific skills

i) A large pool or researchers (31)from various disciplines (a dozen)
ii) A commensurate allocation of financial resources by the Government. IMROP is almost entirely funded by the Government
iii) A clearly substantial allocation of financial resources compared to other research sectors. (ex: 140 million UM granted to IMROP in 2001 against 5 million to veterinary research whereas the cattle-rearing sector accounts for 18% of the GDP .

Sources: National reports, Maritania and Nigeria

1 US$ = 740 FCFA; 1 US$ = 250

Private research or development institutions

This category of provider comprises several actors including:

(a) Non-governmental organisations (NGO); in this category are organisations such as CREDRETIP, UICN, WWF, ENDA TM and OCEANIUM, found in Senegal.

(b) Bilateral cooperation bodies (working through projects); this is the case with GTZ in Cameroon and Nigeria.

(c) International Institutions *like IRD*

4.1.2. Scientific skills and type of services provided

The fisheries research service providers incorporate a varied range of scientific disciplines with numbers varying depending on the type and size of the institution. The table in annex 3 gives an idea of the disciplines available within some public fisheries research institutions and highlights the great disparity between institutions both in number of disciplines and number of research staff.

4.2. Aptitudes and skills in development research

The aptitude and skills of development research institutions varies greatly depending on the country (table 2). In all cases there are both favourable and unfavourable factors:

the strong points or assets concern in particular :

(a) The existence of priority areas in fisheries research emerging from strategic research plans that were prepared following a multi-institutional, participatory approach (involving the users)

(b) The existence of frameworks (even informal) for dialogue between the research service providers, the technical ministerial departments and different categories of users. In Senegal there is FNRAA and the CNCPM, Nigeria, NCA and NACCIMA, Mali, CNRA, APCAM and the CRU or the informal and periodic exchanges between research and technical ministerial departments in Guinea or Mauritania.

(c) The recent transformation of the status of some institutions into public scientific and technical establishments thus permitting greater efficiency in action and promoting the culture of enterprise. This is the situation observed in Senegal with ISRA/CEODT and in Mali with the IER

The shortcomings on the other hand, pertain to:

(a) The absence of institutional mechanisms Research – Fisheries communities (professionals) - Policies

(b) Inappropriate status (PAE) of some research institutions, which has not permitted the fostering of development-based research (inflexibility in management, poor motivation of researchers to promote participatory approaches to development.)

(c) Inadequacy or even absence of mechanisms for the active participation of users in leading and directing research.

(d) Over-dependence of research institutions on external funding (at least 70% in some cases); which does not in some cases enable research to be directed towards concrete development concerns.

5. THE EFFECTS OF PIPs ON RESEARCH AND THE SLs OF FISHING COMMUNITIES

5.1. General analysis of PIPs and their effects on the fisheries sector and the SLs of artisanal fishing communities

General analysis demonstrates that the most striking fact about the PIPs has been the structural adjustment policies on-going in different countries since the beginning of the '90s. This deals essentially with:

(a) Government disengagement. This disengagement touched primarily on the production sector, supply of production factors (materials and fisheries inputs), marketing, the different Governments focusing much more on regulation and control issues.

(b) making communities responsible for the handling of functions formerly the responsibility of public structures. This process of responsibility assumption has been marked not only by the emergence of professional organizations, but in particular local powers (local autorities) through various decentralization processes.

This situation has had multifarious effects in the fisheries sector, both at support institution level and on the SLs of fishing communities

The notable **positive effects** have been:

(a) The emergence or strengthening of professional organization in the fisheries sector. This dynamic concerns all the socio-professional categories: fishermen, wholesalers, boat-owners, service providers, processors. In all the countries covered by the study, the emergence of professional associations has been noted. This is the case of ADAMAM in Cameroon, CONAPEG in Guinea, APRAM and APPM in Mali, FNP in Mauritania, FISON, NUFSD and NAFFA in Nigeria, CNPS, FENAGIE-P, FENAMS in Senegal.

(b) The emergence of local powers (local collectivities) within which fisheries professionals are integral parts

(c) Amendments to principles of application of legislation in the fisheries sector. So in some cases the inflexibility in application of laws and codes has progressively given way to participatory approaches and even to responsibility assumption by fishing communities. The example of Mali is given with grass roots community participation in preparation of local conventions to govern exploitation and management of fisheries research (case of the 5th region in Mali).

(d) The Code of Conduct for Responsible Fisheries (CCRF) has also emerged as a genuine instrument for fisheries management . It has thus influenced the conduct of a substantial amount of research on the provision of decision-making material in the area of fisheries development and the utilisation and management of fishery resources in all the countries under study. This, for example, is the case in Mauritania where the provision by research of material to assist in decision-making has led to the promulgation of Decree 2000-024 on a fisheries code based on the CCRF.

Even if the CCRF does not appear to have had a major impact on multidisciplinarity within the research teams, nor on the level of social science skills available to them, it nevertheless is evident that it has further encouraged participatory approaches, with greater consideration of the human dimension in research and development activities. However, it should be noted, that for the time being there is no mechanism permitting a correct evaluation of CCRF's impact on fishing in general and fisheries research in particular.

The **negative effects of the PIPs** which have affected the SLs of fishing communities are:

(a) Disappearance of support services to the fisheries sector or abrupt dropping of some functions at a time when the fishing communities were insufficiently organized to take over. This reflects the present reality observed in most countries concerned by the study. Professional organizations only exist in name, are very fragile, without any solid basis and possess little negotiating capacity. They handle issues of supply of factors of production, funding of activities (credit), marketing.

Such discrepancies reflect the poor Government commitment to preparing a hand over, which has had an effect on communities' SLs by affecting their capacities: difficult access to credit, drop in purchasing power (inflation), problems in supplies of factors of production, low level of access to basic social services (health, education….)

(b) Reduction in Government's investment capacities for the satisfaction of certain social needs (health, education, roads …) for artisanal fishing communities. This situation is due principally to the fact that Governments are subject to structural adjustment programmes have several priorities which cannot all be achieved because of a lack of financial resources.

(c) Government's inability to effectively control prices, thus leading to price rises in factors of production and inputs. In most countries, this factor has had adverse effect on the financial capital of fishing communities, all socio-professional groups (fishermen, wholesalers, processors, mechanics, producers of gear, boat owners….).

(d) Institutional instability of support structures in the fisheries sector. Public institutions (research and support structures) have embarked on restructuring exercises in a bid to achieve efficiency and enhanced ability to undertake their new functions. This has caused institutional instability which has weakened the capacity of some institutions (problems introducing a policy of staff promotion, unstable policies on activities….).

In addition to these structural adjustment policies, other sub-regional monetary policies such as the devaluation of the CFAF have had deleterious effects on the SL of fishing communities. The devaluation of the CFAF in particular contributed to an increase in production costs, simultaneously provoking a fall in purchasing power of the artisanal fishing communities.

Finally, , the effect of some national policies on SLs of fisheries communities needs to be highlighted. This is the case for example, with the policy of centralized decision-making in the fisheries sector in Nigeria, which risks the use of inappropriate regulations, far removed from the reality on the ground, in the grassroots communities.

5.2. PIPs and their effects on fisheries research

Just as for the fisheries sector in general, macro-economic policies have had various effects on fisheries research.

The **positive aspects** have been primarily:

(a) Restructuring within research institutions with the aim of improving their efficiency and promoting development-focused research. It is with this consideration that some institutions have changed their status from that of a public administrative establishment (PAE) to public scientific and technical establishments (PSTE) thus rendering management more flexible and facilitating the introduction of incentive measures for outputs and for directing research towards development needs. This is the case with institutions such as IER and ISRA to which CRODT is attached.

(b) The creation of exchange mechanisms with users, thus permitting them to participate in the selection of priorities for research. Although this might appear limited, the case of regional committees of users of research results (RCUs) in Mali should be noted, even if it is a global mechanism implemented by the IER to ensure linkages with users. Furthermore, it is through such a mechanism that partnership between groups of processors was established (via the RCU) and research to improve the extraction and conservation of «*Tinéni*» oil effected. .

The **negative points** are those relating to the following aspects:

(a) Low priority rating given to fisheries resources in the area of financial resource allocation. This situation, experienced in almost all the countries studied (with the exception of some countries like

Mauritania) is due to the fact that the Governments fixed new priorities in view of structural adjustment relegating research to the background.

Consequently, and for some countries like Mali, the Government contribution does not exceed 30% (mainly operational costs – salaries and other current charges), a major part of funding (at least 70%) coming from external sources. Such a situation limits intervention capacities and in some cases hinders a clearer focusing of actions on community needs.

(b) Institutional instability linked to restructuring, with its consequences on the performance of some institutions. In this way, the frequent changes of ministerial or institutional supervision has prevented improvement in performance (difficulties in promoting a true policy for strengthening human and financial resources...) of some research institutions as has been the case in Nigeria.

5.3. Priority given to the fisheries sector

Generally speaking, the actions developed in the area of fisheries fall into the framework of priorities identified by countries under poverty alleviation. This reflects the importance that the policies give to artisanal fishing in poverty alleviation among the disadvantaged groups. This vision must however, be qualified by the fact that in some cases the reality leans more towards industrial fishing as a source of foreign exchange. This is the case, for example, for Guinea where arrangements or investments for industrial-scale fishing are clearly highlighted in the strategic document on poverty alleviation (SDPA). In the «draft» of this strategic document, in Cameroon, only superficial reference is made to artisanal fisheries.

This paradox is also highlighted by policies related to fisheries agreements and the difficulties of applying the regulations (a situation experienced particularly in Guinea) with consequences on the SLs of artisanal fishing communities:

(a) Strengthening fisheries over-capacities (national job reduction and its effects)

(b) Dysfunctionality of the inter-fisheries management system (spatial competition between industrial and artisanal fishing with frequent conflicts and damage to gears). Thus, in some countries such as Nigeria, capital losses linked to this threat within the community has been evaluated at 135,000 naira per fishing season, this loss rising to between 252,000 and 336,000 naira per month during a good fishing season.

(c) Disorganization of product marketing mechanisms (products of national boat owners are less competitive on the international market).

As regards fisheries research in particular, the major asset is that most of the research activities are already part of the priorities identified in the strategic research plans approved by political authorities.

However, the so-called priority given to the fisheries sector under poverty alleviation, cannot be seen anywhere if one looks at resource allocation levels. As underscored earlier in Part IV, with the exception of Mauritania, Governments have made little effort to put in place a sustainable funding mechanism for fisheries research institutions.

This instability or uncertainty in financial matters is a common concern observed within agricultural research institutions in Africa.

Experiments are presently on going in some countries like Senegal with the National Fund for Agricultural and Agro-allied Research (NFAAR). Fisheries research activities are eligible under this fund, and there is work being done with a view to ensuring sustainability of funding and to link this with the real research needs expressed by users and development priorities. They are nevertheless competitive funds.

6. FISHERIES RESEARCH, PIP AND CONTRIBUTION TO SLs OF ARTISANAL FISHING COMMUNITIES

6.1. Contribution of fisheries research to the SL of communities and to PIPs

An analysis of the results obtained demonstrate that fisheries research, despite low resource allocation from which it suffers in most counties, contributes directly to livelihoods of artisanal fishing communities. This contribution which has been enjoyed in all the countries which are part of this study is articulated through three main categories of services provided by fisheries research institutions.

Generation of diverse innovations and knowledge permitting the improvement of income and general living conditions in communities. The technologies generated cover several areas of community concern: rational exploitation and management of fisheries resources (fishing gear and other selective fishing techniques), processing and conservation of fish (low-energy, low-cost smoking techniques…) Box 5 gives an example of the contribution of fisheries research to the improvement of the SLs of inland fishing communities.

Box 5: Example of contribution of fisheries research to policies and to the SLs of communities (Case of Mali)

Technologies and knowledge leading to the establishment of local rules on fisheries resources management (Local and regional fishing agreements in 5th region, in force since 1988)

i) Techniques and fishing gear in the Niger river and its tributaries
ii) Fishing Observatory in the Inner delta of Niger

Technologies leading to income enhancement of communities and their associations (co-operatives)

i) Techniques for Fish farming in coastal waters
ii) Pond fish farming Techniques
iii) «Chorkor»Oven-smoking of fish has given rise to an increase in the selling price of smoked fish (from 500 to 1,250 CFAF/Kg)
iv) Extraction and conservation techniques for «Tinéni» oil have led to improved product quality and longer length of conservation from 2 months to 2 years.

Various technologies and knowledge leading to political decisions on regulation and development

i) Local and regional fishing agreements in the 5th region in 1987
ii) Decree N°95-032/PRM and Application Decree
iii) Master Plan for the development of fisheries and fish farming in Mali in 1997
iv) Selingué Lake Fishing Agreement , currently being drafted

Source: Mali national report
1US $ = 740 FCFA

As regards the generation of technologies in particular, a difference in areas of activity seems to be appearing between the public and private research institutions. In most cases, the private research institutions (the NGOs namely) invest more in research activities or research action linked to community livelihoods, whereas the public institutions are those also considering aspects of basic research which, despite their contribution to the SLs, require more time for implementation. Boxs 6 and 7 illustrate services offered by these two categories of institution.

(b Links between fisheries management and improvement in SLs. Some believe that this is the main point of departure for research. The data presented in the 6 studies are insufficient to make an in-depth analysis of such an assumption here.

(c) Building technical capacities in the communities. This technical training is designed to permit better value to be derived from innovations developed. The commitment of fisheries research institutions to technical capacity building compensates for the low level of involvement by agricultural extension institutions in this field.

This notwithstanding, it should be noted that the role of fisheries research institutions in organisational and institutional capacity building in fishing communities is still marginal compared to other services provided. *Providing various advice (advisory-support) to communities* for the selection of the best operating techniques, appropriate inputs

Box 6: A public agricultural research institution: The Institute for Agricultural Research for Development (IRAD) of Cameroon

Type and Mandate

i) A public administrative establishment (PAE) with a national mandate for programming and implementation of research in diverse areas: agriculture, environment, agro-allied, agro-industrial, fisheries….
ii) Institution under the double supervision of the Ministry for Scientific and Technical Research and the Ministry of Economics and Finance (financial supervision)

Subjects broached in the area of fisheries (artisanal and industrial)

i) Resource evaluation
ii) Biology and dynamics of species harvested
iii) Development
iv) Conservation of balances in eco-systems
v) Socio-economics of fisheries
vi) Technology of fish processing
vii) Fish farming

Scientific staff (discipline): 07 researchers out of a total of 230 in the institute

i) Biology: 03
ii) Socio-economics: 01
iii) Fish technology: 01
iv) Pollution: 01
v) Aquaculture: 01

Links with policies and communities (Users)

i) Absence of a formal framework (institutional platform Research – Policy – Fishing professionals)

Capacities in development research

i) A regional institution with centres and research stations covering the agro-ecological regions of the country.
ii) Some partnerships with the Ministries in charge of extension work and with some development organisations. (SOWEDA)
iii) Absence of an enabling environment for demand-driven research (poor motivation for developing the participatory approach)

Source: Cameroon national report

Box 7: A Non Governmental Organisation conducting Fisheries Research: CREDETIP – in Senegal

Type and mandate

i) A sub-regional non-governmental organisation (NGO) (Burkina Faso, Côte d'Ivoire, Gambia, Guinea, Guinea-Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone) - Institution with a mandate for research and development

Subjects broached in the areas of fisheries. (artisanal inland and inshore fishing)

i) Support for the development of exchanges of artisanally processed goods in local and sub-regional markets
ii) Promotion and utilisation of efficient technologies
iii) Diagnostics, institutional support and research and development

Personnel (discipline)

Economy and management: 01; Sociology: 01; Social services: 01

Links with communities and policies

i) Involvement in numerous exchange and decision processes in the field of fisheries: National Quay Management Committee, national consultations on fisheries
ii) Preparation of themes (Bonga, Economy and Humanism, Samudra, Fisheries and development, Galgui…)
iii) Support for the emergence of professional fisheries organisations (CNPS)

Development research capacities.

i) Existence of an output based incentive system for staff
ii) Development of various partnerships with public research and funding institutions (CRODT, ITA…)

Source: Senegal national report

As regards PIPs in particular, it goes without saying that it is the field in which fisheries research has contributed the most in the different countries, and this is despite the slim resources often allocated to the sector.

Some research institutions like IMROP have even been established with a mandate to provide the supervisory Ministry facts to assist in decision-making. The example of the contribution of Fisheries Research to policies, institutions and processes is illustrated in Boxes 5 and 8 with the cases of Mali, Senegal and Nigeria.

Box 8: Examples of contribution of social sciences

Case of Nigeria: Contribution of socio-economic research to political decision-making

The provision of knowledge and technologies has assisted decision-making in the area of management and regulation of the exploitation of fisheries resources

i) Recommendations made by the NIFFR for the use of «3 inch. Mesh-Size» led to the drafting of regulations on inland fishing in 1983
ii) Recommendations made by the NIOMR on fishing zones taken into account during drafting of decrees on fisheries in 1992
iii) GTZ in collaboration with NIFFR was behind the review and signing of the law promulgating sustainable management fisheries resources of Lake Kainji in the States of Niger and Kebbi and in other water bodies.

Case of Senegal: Contribution of socio-economic research

The generation of a critical mass of knowledge and technologies contributed to the SLs of communities and provided assistance in decision-making.

i) Knowledge about costs and revenues in artisanal fishing enabled the identification of factors impacting the profitability of investments in this sub-sector.
ii) Knowledge about shortcomings in the management of purse seiners and long liners
iii) Information on constraints related to rational landings. This led to the preparation of marketing aid projects.
iv) Monographs on major distribution markets. This permitted the identification of key factors in product price formation and the socio-economic characterisation of marketing officers.
v) Information on constraints hindering the development of the processing sectors
vi) Bi-annual statistics from fishing units and fisheries-related infrastructures
vii) Information on cephalopod based fisheries. This led to the establishment of a data bank on major macro-economic aggregates dating back to the origins of this type of fishing in Senegal.
viii) Information on macro-economic policies. This informed decision-making regarding increased Government support to the fisheries sector.

Source: Nigeria national report and Senegal national report

In all the participating countries, fisheries research played a role by contributing technologies and information necessary to enable politicians to take decisions in matters pertaining to the regulation of the exploitation and management of the resource and the fisheries. This has often been reflected in concrete terms by the passing of laws, decrees or various texts and also through clarifications given during negotiations of fishing agreements.

6.2. Particular contribution of social sciences

The scientific disciplines, which are grouped under social sciences, are, for example, sociology, economy, anthropology, law, political and institutional analysis. Each of these disciplines has potential influence on decision-making in the area of fisheries management and/or livelihoods improvement. But the capacities in social sciences of research institutions in the countries studied are generally limited.

The importance of social sciences (taken in the widest sense of the term considering all socio-economic aspects) in fisheries research institutions varies depending on the country. This variability takes into account situations in which social sciences seem to play a background role (as is the case in Cameroon), and

situations where despite relative marginalisation, the social sciences make a valuable contribution to the research mechanism (this is the case for Senegal).

Generally speaking, and whatever the situation, social sciences have gathered an enormous amount of information on wide range of areas: fishery production systems, statistics, product marketing, product processing …. These achievements have not only led to direct improvement in the living conditions of the communities but have also contributed to decision-making at the policy formulation level.

An illustration of the contributions of social sciences is found in Box 8 with the cases of Nigeria and Senegal.

6.3. Links between FR and the needs of artisanal fishing communities: Partnership between Fisheries Research and Artisanal Fishing Communities

In the framework of this study, some examples of partnership between Research and the fishing communities have been analysed. From the point of view of procedure, such partnerships are generally built around an expressed «request» from the users and on the basis of which organisation is put in place by the research institution with a view to providing an appropriate response.

In the framework of this study, the few partnership cases analysed (see details in Annex 4) give rise to the following:

(a) The «requests» or needs, basis of partnerships often come through intermediary organisations represented by projects or development societies (case for example of SOWEDA in Cameroon, OPM in Mali or PNBA in Mauritania) NGOs (case of SAILD in Cameroon, OCEANIUM and UICN in Senegal), or even research institutes. This situation encountered in most countries partially indicates the low capacities of professional fisheries organisations to clearly formulate a request and to contract services.

(b) Some partnerships have been built on the basis of clearly expressed «demands» of the users. This is the case of Mali with the RCU on «Tinéni» oil extraction and conservation techniques in Nigeria in collaboration with NIFFR – communities for the development of low-energy technologies for smoking and drying of fish, and from Senegal with the collaboration of CREDETIP – CNPS for the development of the «mutualist» system, the partnership CNCR-MANOBI for the establishment of information systems on markets. These partnerships illustrate situations where the communities through their professional organisations possess a real capacity to analyse their environment, production and negotiation with a view to contractualisation of services. Box 9 illustrates the concrete examples of this type of partnership in Nigeria and Senegal.

(c) But in most cases, there are very few direct partnerships Research – Communities in the fisheries sector. This situation (experienced in some countries like Guinea) reflects the existence of negative factors, inter alia:

i) The low capacities observed within professional fisheries organisations, more especially, at the grassroots level. More often than not this is due to inadequate organisational, institutional, strategic capacities (ability to analyse and develop a vision for the future), and for negotiation with other partners. This was all exacerbated in many countries by the extremely high rate of illiteracy within the artisanal fishing communities.

ii) The absence or inadequacy of national development research policy. This situation observed in the area of fisheries appears somewhat paradoxical in some countries like Guinea where «Demand driven research» is already in full swing at the level of agricultural research. (This is case with numerous partnerships and service contracts between the Institute for Agronomic Research in Guinea – IRAG and professional organisations of producers such as the Federation of Fouta Djallon Farmers – FFDF or the National Federation of Coffee Planters of Guinea – NFCPG).

iii) The inadequacy, end in some cases even absence, of formal mechanisms by which fishing communities ensure management of research activities. .

iv) The absence of appropriate mechanisms for the dissemination of fisheries research results: extension mechanisms often absent in the area, traditional extension structures taking little account the concerns of the fishing sector, perception on the fact that it is extension work that is to assure linkages with the users. To this should be added human resource constraints at the research level.

Box 9: Examples of partnership Research – Fishing Communities

Case of Nigeria: Partnership between NIFFR and the fishing communities along the Kainji and Jebba Lakes for the introduction of solar dryers and ovens for smoking fish.

Relevance of the operation

i) A request from fishing communities
ii) The request constitutes a real concern of communities confronted by the degradation of forestry resources and the reduction in the availability of firewood.

Relevance of the approach

i) A participatory approach was used at all stages of the process
ii) The research institute (NIFFR) played the role of an observer and a support role, thus giving the communities the precedence

Impacts and sustainability

i) The partnership led to the development (adaptation) of technologies for cheaper processing with much lower consumption of firewood.
ii) The appropriation of the results of the partnership by the communities constitutes a sign that it can be replicated in other contexts (especially in the Sahel) where the problem of availability of firewood is acute.

Case of Senegal: partnership between the CREDETIP, CNPS and the CMS for the development of «mutualism» to the benefit of the CNPS

Relevance of the Operation

i) The request comes from a well organised, well-structured professional organisation
ii) The request reflects a need felt by the members of the CNPS for funding of their fishing activities

Relevance of the Approach

i) The requesting professional organisation has played an active role in the process of this research –Action, providing training and sensitisation for GIEs
ii) Other actors (CREDETIP, CMS) have played a support role, namely, as regards IEC (Information, Education and Communication) , and dissemination of results of the research-action

Impacts and sustainability

i) The results of the partnership have led to autonomy of the CNPS in the crucial area of funding its fishing activities.
ii) The operation is sustainable because it is based on a priority need of the profession. It can be repeated in contexts where professional organisations possess real capacities for organising and mobilising its members.

Sources: Nigeria national report and Senegal national report

6.4. Factors influencing the contribution of fisheries research to the SLs of communities, and policies

Despite the performances recorded in most countries in the study, fisheries research still encounters enormous difficulties limiting its contribution to the improvement of livelihoods of fishing communities and to policies.

Although the nature and the importance of these limiting factors vary from one country to another, the general analysis reveals the following:

(a) Factors relating to institutions and policies. These have been identified as being the most important and include, inter alia:

i) The absence or inadequacy of sustainable funding mechanisms for research institutes. The excessive dependence of institutions on external funding diminishes the Institution's ability to act and also affects the focus of some research enterprises (often far removed from the real concerns of the communities).

ii) In many countries fisheries research institutes are given a low level of priority. This leads to infrastructural, human resource, material and financial inadequacies which affect the responsiveness of research institutes to requests from the artisanal fishing communities.

iii) In some cases, the inappropriateness of the constitutions of fisheries research institutes vis-à-vis concerns about development-focused research. Provisions under the PAE do not permit the encouragement of an entrepreneurial approach nor ensure flexibility in management. This constitutes a serious limitation for some fisheries research institutes.

iv) The inconsistency of some policies, namely those relating to fishing agreements. This sometimes favours further over-capacities in fisheries, the dysfunctionality of the system of inter-fisheries management (spatial competition between artisanal and industrial fishing), breakdown of the marketing mechanism.

v) The low-level, even absence, of development of linkage mechanisms between **Research**, **Communities**, and **Policies**.

vi) The institutional instabilities observed within some research institutes weaken their organisation and makes the establishment of a coherent research policy impossible.

vii) Absence of specific relay structures with a mandate to promote the exploitation of fisheries research results for the benefit of fishing communities.

(b) Organizational problems within communities

This concern, found in almost all countries, does not facilitate the adoption of development-focused research.

Similarly, and following the disengagement of the Government from certain functions, the inability of professional fishing organizations to manage issues of funding, supply of factors of production, marketing of products, does not aid in the development of technologies developed by research.

Another important reason for the ineffective direct partnerships between **Research** and Fishing **Communities** is also due to the poor organizational capacity of the latter.

7. LESSONS AND IMPLICATIONS

7.1. Key Lessons

From the results obtained in the course of this study the following main lessons can be drawn:

(a) Positive and interesting trends within research institutions

Beyond the shortcomings documented, it cannot be denied that policies have during the past few years, underscored improvement in the effectiveness of research institutions (including those related to fisheries research). One of the notable facts induced by the PIPs has been the transformation of certain institutions into legal structures (PSTE), which has improved their effectiveness and ensured the promotion of an entrepreneurial approach (system of promoting officers on the basis of output) and development-focused research. While their current structure still appears inadequate, especially at the level of fisheries research institutions, the trend seems encouraging.

(b) Encouraging local regulations for management of fisheries resources

Even if this trend is not generalised it should nevertheless be mentioned. This is the case, for example, with local agreements drawn up in the 5th region in Mali with the direct involvement of the communities through their professional organisations and local authorities (territorial collectivities). This is an approach which is more empowering and guarantees the implementation or application of rules on the exploitation and management of resources.

(c) Low capacity of professional fishing organisations

The low capacities of professional organisations is a concern noted in most countries (with the exception of Senegal). Compared to the dynamic change in other sectors of activity (agriculture, livestock breeding) this situation seems disturbing and reflects the low level of attention allocated by fisheries support bodies in the field.

d) Contribution of fisheries research to the SLs of communities and to PIPs

Results show that despite certain objective constraints, fisheries research through innovations and knowledge generated, has been a major contributor to fisheries livelihoods. The most remarkable contribution of research concerns the provision of decision-making assistance at the political level. Such a contribution should be enhanced through the establishment of institutional platforms between **Research**, **Professionals** and **Policies**, as well as the improvement in capacity for action of the research institution.

(e) Possibilities for capitalising on socio-economic research in the framework of capacity-building for fishing communities.

Beyond knowledge and innovations for decision-making, socio-economic research could also be used profitably for the generation of organisational and institutional innovations to boost the capacities of professional fishing organisations. Similarly, they could make an interesting contribution to the enrichment of the SL approach and to the search for methods or mechanisms promoting development-centred research.

(f) Low priority given to fisheries research in some cases

This illustration has been made on the basis of resource allocation to the sector. This also reflects the problem of prioritising amongst various issues which is a process that several countries, subject to structural adjustment, are currently encountering. This question raises the basic concern of promoting sustainable funding mechanisms. This is not a new issue given the current experiments underway in the area, namely in Senegal with the FNRAA. It is however a thorny issue for policies at country level.

Thus, beyond the procurement of funds, it is also necessary to seek appropriate mechanisms to attain a deeper involvement of users, both in the direction and funding of research activities. Experiments are also on-going on the issue of the emergence of semi-private institutions where users hold the major capital share (case for example of CNRA in Côte d'Ivoire). However these are mechanisms that cannot be applied in a blanket fashion but whose common denominator remains the existence of professionals who are sufficiently organised and who possess the appropriate capacities (including financial capacity).

(g) Difficulties of fisheries research institutions in developing a demand-driven approach among the fishing communities.

Most countries have experienced difficulties with the development of a demend driven research agenda. As indicated earlier, considerable efforts have been invested but much work remains to be done in this area of fisheries research. This often appears paradoxical if one compares it to what is happening in the agricultural research field. This situation is often linked to the youth of certain fisheries research institutions and the reasons for their establishment, (in some cases, the desire was simply to provide useful information to the technical supervisor to assist in decision-making). This partly explains the inadequacy of a policy to promote a participatory approach as well as difficulties in introducing frameworks or mechanisms to facilitate partnership with users.

(h) Very few direct partnerships between research and users in the fisheries sector.

This situation has been noted in most of the countries and is largely due to the poor abilities of professional community organisations and the climate within certain research institutions (absence of incentive structure) which is not conducive to the establishment of such partnerships. However, analysis demonstrates that it is the capacities of the professional organisations which constitute the determining factor here. The examples analysed show that the professional organisations with the appropriate capacities are even in a position to contract various services from the private sector, as is the case with professional organisations in Senegal.

(i) A lack of mechanisms or support measures for the communities to capitalise on results of fisheries research

This situation, experienced in most of the countries, reflects not only the unsuitability of some current measures of dissemination for taking into account the specific needs of the sector but also the absence of a global policy in the area.

(j) Incoherence of some policies introduced and affecting the Livelihoods of the communities

This is illustrated in some countries by the need of the Government to promote artisanal fishing as a means of effectively alleviating poverty on the one hand. While on the other, the concern of these same Governments to rake in the maximum amount of foreign exchange through industrial fishing. This problem is clearly an issue in some countries and is illustrated by the dearth of attention given to artisanal fishing in spite of its major contribution to income generation and rural job creation. There is therefore a need to strike a balance, with a view to encouraging the contribution of artisanal fishing to poverty alleviation strategies

7.2. Concrete actions to improve the contribution of fisheries research to artisanal fishers livelihoods

Table 3 summarises the main actions foreseen at country-level with a view to improving the contribution of fisheries research to the SLs of communities and to policies.

An analysis of these actions reveals a number of concerns, which, if taken into account, will improve the contribution of fisheries research to artisanal fishing communities livelihoods.

The study only covered a sampling of six countries out of 25 countries associated with SFLP. Theses ideas for action are therefore based on the issues arising from the sample survey but constitute a basis for the positioning of each country, each on the basis of its own context and realities. Four major categories of priority actions can be identified.

(a) Building capacities of fisheries professional organisations (organisational, institutional and especially strategic capabilities)

This is a vast area of intervention already having been examined and having led to the preparation of national action plans to strengthen farmer's organisations. The activities foreseeable in the framework of SFLP will therefore be constrained by the existing process (this issue has already been discussed by some NCU like Mali which was the basis for success in all fisheries-related activities). Activities in the field would touch upon practical training in particular including study tours, exchange visits between professional organisations. Issues relating to illiteracy are important as they determine the basis for capacity-building of professional organisations. This constitutes one of the primary responsibilities of the Government and further studies in this matter are required.

(b) Building partnerships between research and fishing communities

This area of intervention determines the importance of the contribution of research to fisheries livelihoods. Activities foreseen in the field are multiple and comprise:

i) The creation of an enabling environment within research institutions promoting the conduct of demand-driven research. This takes into consideration of aspects relating to the system of incentives to researchers and evaluation criteria for output. In some cases, namely within institutions developing along the lines of the PSTEs this type of issue is often taken into account. However, it must be noted that these are issues implicating decision-makers in each country; the programme response at this level could be to continue reflection encouraging a qualitative development of fisheries research institutions in all countries.

ii) Building the capacity of research teams in participatory approaches to development. Actions have already been initiated by the Programme in this area; here the idea is to strengthen such initiatives by widening the target group for such training (to representatives of professional organisations) and contributing to the preparation of training manuals in this area.

iii) Creating mechanisms by which fishing communities can influence research programmes. Such mechanisms are part and parcel of the restructuring that is on-going or completed in some of these institutions. Practical experience however demonstrates that the drawback of such measures resides in the non-sustainability of funding for the running of operations. A relevant activity in this area is to seek sustainable mechanisms for funding these arrangements while at the same time guaranteeing their functionality and appropriation by the actors involved.

iv) Encouraging participatory development activities in partnership between **Research** and Fishing **Communities**. The results of the study show that some research institutions are not used to, or prepared to, operate within a demand-driven set-up. The same is true of professional organisations whose capacities do not allow for the establishment of such partnerships. Thus the development of pilot initiatives in each country gives an opportunity to initiate training both within fisheries research institutions and at the level of professional association level. In some countries, the process of contracting out research will boost initiatives already underway. The promotion of such partnership operations has already been undertaken in the agricultural sector and has given producer organisations the opportunity to familiarise themselves with request and research contract services.

(c) Building capacity in fisheries research institutions

As outlined above, this issue goes hand in hand with the priority given to this sector and the issue of the need to focus these institutions on development needs.

As regards the experiences noted throughout this study, some key activities are to be expected:

i) Encouragement of sustainable mechanisms for funding DR. This issue is also of relevance to agricultural research as a whole. The fisheries sector, however, does have a certain number of assets: the fact that research contributes directly to policies is a factor for sensitisation of decision-makers on the issue; similarly, the fact that fisheries produce is to a large extent evaluated in monetary terms also offers possibilities of interesting the profession on this subject.

Furthermore, in addition to on-going experiments in some countries such as Senegal, the introduction of other areas of reflection involving both decision-makers and the professionals also seems relevant. As a basis for such reflection, it is important to undertake other activities the contribution of research to the SLs of communities, as well as an impact evaluation related to the contribution of research to PIPs. The framework of this study has not been wide enough for a consideration of these factors which are nevertheless important both for policies and the profession. These evaluations could be conducted in each country.

ii) Boosting the scientific capacities of research institutions (human and material resources). This is an issue inseparable from that of sustainable funding of research institutions With particular regard for human resources and taking into account the situation observed within research institutions, particular attention will have to be given to enhancing social science skills (socio-economic aspects) and a participatory approach.

(d) Strengthening the contribution of research institutions to policies and to SLs of communities

Several activities are foreseeable but those relevant to the results of this study are the following:

i) The creation of an institutional platform for linkage between **Research**, **Policies** and **Profession** (Communities). In countries where professional organisations (PO) have sufficient capacity as in Senegal, such mechanisms have been established by PO lobbying. It seems from these experiences that the sustainability and functionality of such measures depend to a large extent on the existence of strong POs. Just as for the restructuring of research institutions, this is an issue implicating primarily the main actors concerned at each country. As for the concern for improvement in the contribution of research institutions to decision-making at the political level, the Programme action could contribute to the sensitisation of national authorities on the issue as well as to awareness in the area.. Just as for partnership mechanisms Research – Communities, the search for sustainable systems could become a relevant concern.

ii) The promotion of mechanisms to capitalise on research results with a view to improving the SL of communities. The unsuitability of actual measures for dissemination justify the relevance of such an activity. Beyond institutional aspects pertaining to decision-making at national level, programme action could cover the following aspects: capacity-building for research teams in drafting techniques, presentation of research results to communities and decision-makers (including local authorities), support for the establishment of mechanisms to exploit results (information systems on innovations, for example).

Table 3. Synthesis of major actions envisaged at country level

Actions	Country					
	Cameroon	**Guinea**	**Mali**	**Mauritania**	**Nigeria**	**Senegal**
1. Creation of an institutional platform Research – Policies - Communities	X	X	X	X		
2. Capacity-building (capacities for negotiation, institutional, organisational, for analysis of their productive environment……) for organisations or institutions linked to fishing communities: professional organisations, agricultural associations, local authorities, unions…	X	X	X	X	X	X
3. Building researchers' capacities in participatory approaches and institutional capacities to develop research in social sciences	X	X		X	X	
4. Establishment and strengthening of mechanisms by which fishing communities ensure directing of research programmes: participation in definition and focus	X	X	X	X		
5. Promotion of sustainable funding mechanisms for research activities	X	X	X		X	
6. Strengthening of partnership between research service providers: Development of a national system of fisheries research.	X					X
7. Creation of an enabling environment (policy) promoting the status of the researcher and assuring the encouragement of development centred research (Promotion and strengthening of Research-User partnerships)	X	X	X	X		
8. Establishment of institutions or supervisory structures for fishing communities and dissemination of research results		X				
9. Encouragement of research contracts			X			
10. Introduction of a strategy of communications between researchers and users. More information on research and dissemination of results.		X		X		X
11. Encouragement of micro-finance (credit) with a view to enhancing the exploitation of technologies by artisanal fishing communities				X		
12. Development of a national strategy to promote artisanal fishing: National forum on holistic planning on the future of artisanal fishing					X	
13. Decentralisation of the decision-making process with a view to real participation of grassroots communities					X	
14. Establishment of structures to disseminate and exploit research results		X			X	X
15. Promotion of a policy on the development of human resources within fisheries research institutions: recruitment of specialists corresponding to development and training needs		X	X		X	X

7.3. Recommendations

This study on the contribution of fisheries research to fisheries livelihoods led to the identification of a certain number of positive facts and opportunities that would enable research to meet the needs of users. Furthermore a number of shortcomings have been identified as limiting to the contribution of fisheries research to the SLs of communities. As regards these shortcomings, ideas for actions have been identified. In the same vein, some recommendations are necessary in order to attain the objectives of the study.

Nevertheless it is obvious that the Programme cannot respond to all concerns. Therefore, the recomendations presented here are the priority issues upon which the Programme could act in partnership with each of the countries involved.

1. The publication of a synthesis of this study and its dissemination by SFLP in the 25 countries associated with the Programme. Results could also be published on the web.
2. Study results could also be disseminated via sub-regional seminars. 2 to 3 of these could bring together representatives of countries, which have not participated, in the study (research, representatives of the profession, NGOs, Private sector, support and dissemination services….). The aim of these workshops is to analyse the implications of such a study in terms of actions to be undertaken to improve the contribution of research to SLs of fishing communities. These regional workshops could be held in partnership with other sub-regional or international networks.
3. Support for experimentation of demand-driven research systems in some countries. This consists in promoting (by placing funds) pilot partnership actions between **Research** and **Community** bodies for the participatory development of technologies (based on the expressed needs of users during the study (See country reports).
4. Support for capacity building in research institutions in the area of participatory approaches. Such support could be organised directly in the countries where a need is expressed.
5. Capacity-building in research institutions in the area of communication with the aim of ensuring a better exploitation of fisheries research results.
6. Capacity-building for countries in analysing impact of fisheries research. To this end, a partnership could be developed with regional institutions like the Inter-State Committee for Drought Control in the Sahel through the Sahel Institute
7. Support to government for national aimed awareness raising at promoting a system of development-centred fisheries research and finding sustainable funding mechanisms for fisheries research.

8. FOLLOW-UP TO THE STUDY

In order to better exploit the results of the study different activities have been identified for implementation at various levels. Responsibilities have also been defined with a view to facilitating implementation.

8.1. Regional Level

Priority actions defined at this level are the following:

(a) Editing, publication and distribution of the synthesis of the study in all countries

Objectives: Foster wider awareness of the results of the study in all countries, both those involved in SFLP and others.

Strategies: Editing and publication in various formats: Document on paper, CD-ROM and posted on the Web.

Period/Time Frame: July – September 2002

Responsibility: USR – Cotonou

(b) Sharing lessons of the study in other countries associated with the Programme by organising 2 to 3 sub-regional seminars.

Objectives: To share study results and consider the implications in terms of actions to be undertaken to improve the contribution of research institution to SLs of fishing communities.
These workshops could be held with the support of sub-regional or international networks.

Participants: Representatives of the 19 other countries (Research, Support and Dissemination structures, decision-makers, representatives of professional fisheries organisations, NGOs, individuals….)

Duration of each seminar: Two (02) days

Period/Time Frame: September – October 2002

Responsibility: USR – Cotonou

(c) Identification of priority actions to be implemented in different countries

Objective: Enable the implementation of priority actions identified in the framework of the study.

Strategies: This activity will comprise two stages: the first being devoted to the choice of priority actions for implementation by each country and the second focusing on arbitration (on the basis of means and concerns) at the regional level by the RSU and the country interest groups.

Period/Time Frame: October – December 2002

Responsibilities: USR – Cotonou

8.2. For countries having participated in the study

The following priority actions are be foreseen:

(a) Editing and publication of national reports

Objectives: To encourage a wider dissemination of the study results in the countries that participated in the study.

Strategies: Editing and publication as a paper document

Period/Time Frame: July 2002

Responsibilities: NCU of each of the 6 countries

(b) Preparation and Transmission of the Note to Decision-Makers on the implications of the Study

Objective: This note, a preliminary draft of which was prepared by countries at the validation seminar, is intended to facilitate a better grasp and a correct assessment of the outcomes of the study in each country.

Strategy: It is directed at different categories of decision-makers with the intention of engendering necessary changes or transformations. These notes would therefore serve as a foundation for the identification of priority actions, the determination of strategies to exploit the outcomes of the study, and for the implementation of priority actions identified in each country by research partners.

Time Frame: By the end of July 2002

Responsibilities: Each focal fisheries research institution and the NCU

(c) Organisation of national reflection on the implications of the study

Objective: To permit the identification of priority actions for the countries and to reflect on modalities of implementation and the responsibilities of each actor. These national workshops will be an occasion to discuss the sequel to the Notes for Decision-Makers and the strategy to be adopted

Participants: Each national meeting will bring together actors involved in the execution of the study (maximum of 30 participants) (research, support and dissemination structures, bodies and development projects, representatives of professionals, NGOs, individuals…)

Period/Time Frame: September – October 2002

Duration: Two days

Responsibilities: NCU of each country.

9. CONCLUSION

This study was commissioned by the the SFLP to respond to one of its thematic concerns. It has been designed and implemented using a participatory approach in the six countries. The interest aroused in the different countries reflects the relevance of the subject matter, which has been conveniently termed «the contribution of fisheries research to livelihoods of artisanal fishing communities». The level of commitment of beneficiary countries from the preliminary reflections on the choice of methodology, up to the collection of data and its processing, is a good illustration of the fact that the work is a response to a topical need.

The process of internal validation implemented in all the countries proved very constructive and represented a real appropriation of the results of the study. Furthermore, one of the positive factors to be considered in the outputs of the study is that it was an opportunity to forge and enhance the skills and abilities of the teams to work in a multi-disciplinary, multi-institutional team while analysing livelihoods.

From the study outputs it appears clear that research institutions do contribute to the improvement of livelihoods of fishing communities through the generation of technologies and information relating to their activities, the strengthening of their technical and institutional abilities, as well as the provision of all kinds of advice. Without doubt, it is at the PIPs level that research institution have made the most significant contribution, generating knowledge and innovations that have allowed politicians to take decisions in the form of laws and decrees on regulation, exploitation and management of fisheries research.

In spite of this contribution, it has been shown that fisheries research does not recieve an appropriate level of attention in all countries. The priorities born of structural adjustment policies have constrained some Governments to relegate fisheries research to a more peripheral status. The field now subsists largely on external funding for financing. Furthermore, fisheries research has taken a lot of time to adaptat and promote a truely development centred research agenda. All these are factors have limited the contribution of fisheries research to livelihoods in artisanal fishing communities. The situation has been further exacerbated by the poorly developed capacities of professional fishing organisations which, up to recent times, have been unable to handle tasks of supplies of factors of production (materials and fishery inputs), funding of activities (credit) and marketing of products.

The outputs of this study that were validated by the workshop held in Cotonou, Benin, from the 12th to the 14th of June 2002 (participants list in Annex 6), constitute a basis for the strategic planning of actions in the artisanal fisheries sector and more particularly the contribution of research. Hence, several actions to improve the livelihoods of the communities have been identified and focused recommendations formulated. Apart from the dissemination of these finding amongst other countries, which were not involved in the study, it is incumbent upon SFLP, in collaboration with all countries, to explore possibilities of implementing the priority actions. The usefulness of this study therefore resides in the operationalization of the actions identified as follow ups to this study.

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Annex 1: Methodology and Outputs

i) The different outputs expected from each national study

1. Identification of key livelihood groups in the small-scale fishing industry, in each country, their strategies and the vulnerability context within which they are evolving. Presentation of socio-professional organisations in the small-scale fisheries sector.
2. Identification of various research providers in the small-scale fisheries sector and an analysis of their performances including key factors affecting the contribution of service providers to the SLs of communities making a living from artisanal fisheries.
3. Case studies prioritising lessons from experiences in collaboration between fisheries research and small-scale fishing communities.
4. Analysis of the influence of PIPs in research on sustainable livelihoods of small-scale fishing communities and alleviation of their poverty, as well as prospects for better contribution of research to PIPs.
5. National Summary Report resuming the elements referred to below, and integrating suggestions for actions to improve links between research and users in the sector.

ii) Indicative methods for data collection in the framework of the SFLP study on the Research-User link

Methods	Examples of themes or data to collect (see the analytical table)	Targets focused
Secondary data/Review of literature	All themes – identification of groups («Livelihood groups»)	Not applicable
Semi-structured Interviews (SSI) with key indicators from a pre-established interview-guide	Identification of groups, roles and research structures, case studies on liaison or partnerships, PIP, etc	Respondents at ministerial departmental level, research institutions or organisations, representatives of NGOs, the private sector etc.
SSI and group discussions («Focus Group»)	Details on the research systems, partnerships, PIP, etc.	Communities/Population groups using fisheries resources, processors, traders, etc.
Other PRA tools if required to obtain information on case studies. Ex : Venn Diagram, Impact Matrix, wealth classification……	Case studies on partnerships, relative importance of links between institutions, impact of research on livelihoods, identification of links between the poor and research.	Communities, local organisations locales, livelihood groups. Traders, fishermen, processors, both men and women …
Methodology for analysis SFLP/Framework for analysis	PIP	Various targets

Annex 2: Responsibilities and roles of study partners

Distribution based on roles and responsibilities adopted at the workshop in October 2001 in Cotonou

RSU	NCU	National Study Team	International Consultants
1. To organise logistics for the entire study and for supervisory/support missions by international consultants	1. To facilitate the work of the national team in charge of the study and that of international consultants throughout the duration of the study.	1. To identify and contract specialists who are to join the national team (task of the institution leader)	1. To supply and develop the global methodology and the work plan for the study
2. To arrange contracts for national teams	2. To follow the progress and give the results from the national team to the RSU and to international consultants	2. To organise the implementation and/or the conduct of the study in keeping with the methodology adopted at the planning workshop held in Cotonou	2. To advise national teams on implementation and analysis
3.Provide and monitor necessary funds		3. To give regular reports to the NCU and the RSU who are jointly responsible for monitoring the progress of the study.	3. To conduct short supervisory missions to each country during the course of the study (according to the planning done in Cotonou)
4. To organise regional workshops		4. To organise supervisory missions for the international consultants and integrate them into the work schedule of the team	4. To prepare materials and facilitate the kick-off and final review workshops in Cotonou
5. To ensure sharing of information on preliminary and final results between country teams, the NCUs and international consultants		5. To consider the suggestions for improvement or amendment offered by international consultants	5. To prepare a preliminary summary report taking into account key lessons and the recommendations arising from the outputs of national teams
6. To monitor national teams and international consultants and their progress in achieving the outputs of the study		6. To respect deadlines and work plans adopted	6. To finalise the final summary report, highlighting recommendations and the activities foreseen at national and regional levels (RSU programme)
7. To provide all translation services required		7. To provide the outputs of the country study to the NCU, the RSU and the international consultants within the time frames drawn up in the work plan	
8. To assure the general co-ordination of studies conducted in the 6 countries			
9. To approve, publish and disseminate the final outputs			
10. To identify and facilitate the implementation of activities which will emerge from the study			

Annex 3: Overview of scientific skills available within some public fisheries research institutions

Discipline	Countries and Institutions								
	Cameroon (IRAD)	Guinea		Mali (IER)	Mauritania (IMROP)	Nigeria		Senegal	
		CNSHB	CERESCOR			NIOMR	NIFFR	CRODT	ITA
Biology	3	10			7	2	5	8	1
Micro-biology						2	3		
Genetics – Biotechnology							1		
Ecology							8		
Socio-economy & Anthropology	1	1		1		3	6		
Sociology					1			2	
Economy					3			1	
Fish Technology	1		6			9	1		2
Pollution	1								
Aquaculture – Fish farming	1			1	1	26	5		
Geography		1				2			
Fisheries		1							
Ichthyology – Hydrobiology		4	10	2					
Zootechnics		6							
Agricultural and soil sciences		1							
Oceanography physique			18		2	3			
Geology – Geophysics. - Environment			7			3			
Energy			11						
Zoology						4			
Educational Psychology				1					
Forestry Resources				1					
Veterinary Medicine					7	1	5		
Fisheries Engineering					5	1			
Chemistry					1	2			
Bacteriology					1				
Mechanic – Engine Technology					2				
Statistics					1				
Extension work – mass communication						2			
Nutrition						3			
land surveying						1			
TOTAL DISCIPLINES	7	24	52	6	31	64	34	11	3

IRAD: Institute for Agricultural Research for Development; CNSHB: National Centre for Fisheries Research , Boussoura; CERESCOR: Centre for Scientific Research of Conakry – Rogbanè; IER: Institute for Rural Economics; IMROP: Mauritanian Institute for Oceanographic Research and Fisheries; NIOMR: Nigerian Institute for Oceanography and Marine Research; NIFFR: Nigerian Institute for Freshwater Fisheries Research; CRODT: Centre for Oceanographic Research Dakar-Thiaroye; ITA: Institute for Food Technology

Annex 4: Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General key points
		Type of collective structure involved in research	**Origin of request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research response mode**	
Cameroon	1	Key actors in PNVRA: . Extension and . Research (IRAD)	(a) Need for collaboration identified at national level in the framework of agricultural services (b) This is not a request generated by users	Functional working relationships to improve the delivery of agricultural services to users	Development partners (BAD, WB …….)	(a) This is an international inter-institutional (b) Research worked directly in collaboration with Extension	(a) Most cases are indirect partnerships between Research and fishing communities and via another actor (Extension, NGO, Development Society) (b) Requests for collaboration often come from support partners (Research, Extension, NGO, Development Society….) (c) In most cases partnership was not concretised by agreements (d) Most collaboration was established not with organised groups of actors (professional organisations of fishermen, women processors …) but with the community
	2	Small-scale fishing community via a development project (SOWEDA)	Development society (SOWEDA) acted on behalf of communities and submitted its request to Research	(a) Research plays the role of service provider by offering responses (training, innovation….) at the request of communities through SOWEDA (b) No formal and direct relations between Research and the Communities	Development partners (BAD)	Institutional response: The research institute organises a response to the request	
	3	A non governmental organisation (SAILD) acts on behalf of the community	Common Initiative Groups The request made indirectly via an NGO	Here there are informal relationships between the NGO and the IRAD researchers No institutional character	NGO funding	(a) No institutional response (b) Informal response by individual researchers	
	4	The fishing communities of Idenau, Limbe, Londji and Kribi-Mbouamanga	Collaboration stemming from a need among credit institutions for information on the financial capacities of communities. The request does not originate from the communities	Working relationship drawing on the communities' expertise for obtaining socio-economic information		Research has developed a participatory approach to collection of socio-economic data	

Annex 4 (contd): Partnerships - General Situation

Country	Case	*Characteristics of partnerships or collaborations*					Key General Points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the colletive structures involved**	**Main sources of funding**	**Research response mode**	
Guinea	(a) Absence of direct or indirect Research – Communities partnerships (b) Many factors limiting the establishment of partnerships or collaboration ON THE PART OF COMMUNITIES (a) Very high illiteracy rates among small-scale fishing communities: Problem of communications giving rise to difficulties in understanding the part played by Fisheries Research not to mention the possibilities of service contracts (b) Low organisational, negotiation or dialogue skills among professional organisations in the fisheries sector. Low level of openness to the outside world. No strategic vision for day-to-day management. ON THE PART OF RESEARCH SERVICE PROVIDERS (a) No appropriate mechanisms to exploit research results: Presentation of results exclusively in French.. No communications strategy (b) Poor training of researchers in participatory approaches (c) No formal framework for collaboration: Mechanisms for linking and involving communities in the identification and management of research programmes and the dissemination of results. ON THE PART OF INSTITUTIONS AND POLICIES (a) No national policy on demand-driven-research in the fisheries sector (paradoxical situation because such a process is ongoing in the agricultural sector) (b) Inadequacy or lack of appropriate channels of communication between Research and Users. No appropriate mechanisms for reporting results of fisheries research to fishing communities. (c) Over-centralisation of administrative services which hampers effective action at grass roots level: Absence of a framework for the expression of users' needs from research service providers; Absence of support structures to support extension of fisheries research results (d) No formalised document on a national policy for scientific and technical research.						
Mali	1	Namaradagam fish processors	(a) Requests originate from the fish processors (b) Need arising from a study trip to Ghana	A working relationship has been established between Research and the Fish Processors – the relationship has not been formalised by a contract	Development partners (USAID)	An institutional response has been organised given the requests of the fish processors – The research organised a response	(a) Existence of partnership based on user requests (case for example of the Research-CRU partnership.

Annex 4 (contd): Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General Key points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research response mode**	
Mali (Cont.)	2	Female fish processors via the RCU (Regional Committee of Users of Research Results)	Request from users through their regional organisations (RCU)	A service contract has been established between Research and the CNRA acting on behalf of the RCU	Development partners (BM, USAID)	An institutional response was organised at the request of Users	(b) But most partnerships are organised around requests submitted by intermediary structures (Research, Extension, NGO, Development projects….) on behalf of the fishing communities (c) Poor exploitation of partnership gains due to: . Low level of organisation at the grass roots . Slow transfer of skills to territorial collectivities (d) All factors affecting: . Negotiating abilities . Management of issues relating to supply of factors of production . Ability to access to credit
	3	Socio-professional organisations, territorial collectivities	The need arose from a concern to render professional organisations and local authorities more responsible (b) The pressure or request is not from socio-professional organisations, but has been imposed by the socio-political environment.	A participatory work process has been initiated between the communities and other technical actors, the administration and civil society	Development partners	Institutional response from Research and other actors	
	4	The development project (OPM) acted on behalf of fishing communities	The request emanates from the development project (OPM) (on the basis of a concern of the communities as regards the product from processed fish)	Preparation and signing of a contract between the financial partner (FED) and the project	Financial partners (FED)	Institutional response from Research and the development project	
	5	Socio-professional associations and territorial collectivities	The need was generated by development actors (Technical extension structures, political authorities, NGOs)	A participatory work process has been initiated between the communities and other actors.	Development partners (FAO, BADEA, BAD, PNUD, EDM…)	Institutional response from different actors	

Annex 4 (contd): Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General Key points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research Response Mode**	
Mauritania	1	A project (PNBA) acted on behalf of communities grouped into 8 pre-co-operative fishing units	Request for collaboration with Research (IMROP; ex. CNROP) came from PNBA	A formal working relationship was established between Research, the Communities and the Project	Development partners (FIDA)	An institutional response was given by Research; the research team organised itself internally to respond to the request	(a) Most partnerships have been based on requests or needs emanating from development projects, acting on behalf of fishing communities (b) There is no direct partnership Research – Users based on community requests; the situation is due to: b1. the absence of a partnership policy Research – Community; IMROP being perceived as an instrument providing decision-making assistance at policy formulation level – Very little direct interaction with fishing communities b2. Poor organisation of fishing communities
	2	A development project (ACGEBA) acted on behalf of the communities	The collaboration initiative comes from the development project, acting on behalf of the communities – the request was not submitted directly by the communities	A working relationship was established between Research, the Project and the communities	Development partners (AFD)	Research is internally organised to respond to requests: institutional response	
	3	Female fish processors via a development project supported by the FAO	The request comes from a development project acting in the name of the communities	Working relationship between research (IMROP) and the project in response to the request	Development partners (FAO)	The research team organised itself to respond to the request	

Annex 4 (contd): Partnerships - General Situation
Annex 4 (contd): Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General Key points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research response mode**	
Nigeria	1 (NIOMR)	Fishing communities (Female fish processors) (Magbon-Alade)	Collaboration was initiated in the framework of a development project	Formal collaborative relationship between search and the communities	Technical and development partners (CRAT, CRDI)	The research institution (NIOMR) organised an internal response to the request	(a) Partnerships or collaboration were not often built around professional organisations (b) In some cases this meant that the partnership spin-offs were not capitalised on, for example: b1. Low rate of loan recovery b2. Non-application of measures relating to the use of resource-friendly fishing gear
	2 (NIOMR)	Fishing communities (net makers, fishermen, leaders)	The request emanates from the research institution (NIOMR) acting on behalf of fishing communities (net makers, fishermen, leaders)	Participatory working relationship between Research and the Communities		The research institution (NIOMR) organised an internal response to the request	
	3 (NIOMR)	Fishing communities (fishermen and leader within the community)	The request, focus of the collaboration, emanates from a project	Working relationship between research and the communities	Development partners (FAO, NORAD)	The research institution organised internally to respond to the request	

Annex 4 (contd): Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General Key points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research response mode**	
Nigeria (cont.)	4 (NIFFR)	Fishing communities from 2 villages (Monai et Shagunu)	Request for purchase of inputs came from Fishing communities	Working relationship between Research (NIFFR) and the communities		Research (NIFFR) organised internally to find a response	(c) Some partnerships based on requests from fishing communities and the implementation of most of these was effected in a project framework
	5 (NIFFR)	Fishing communities	Request for alternative low wood consumption technologies, the focus of the collaboration comes from the Fishing communities	Working relationship between Research (NIFFR) and the communities	Development partners (GTZ)	Research (NIFFR) organised internally to find a response to the community's request	
	6 (NIFFR)	Fishing communities around the Lake Kainji area	Request for preservative materials, focus of the partnership, comes from the fishing community	Working relationship between Research (NIFFR) and the users	Development partners (GTZ)	Research organised a response to the request.	
	7 (NIFFR)	Lake Kainji fishing communities	The request was submitted by fishing communities in relation to the damage caused by water hyacinth – This request was submitted via Research (NIFFR)	Formal working relationship between Research (NIFFR) and the communities of Lake Kainji	Development partners (GTZ)	Institutional response of research to the communities' requests	

Annex 4 (contd): Partnerships - General Situation

Country	Case	Characteristics of partnerships or collaborations					General Key points
		Type of collective structure involved in research	**Origin of Request**	**Type of links between research and the collective structures involved**	**Main sources of funding**	**Research response mode**	
Senegal	1	Partnership initiated by an international NGO (ENDA TM) and formulated jointly with Research (CRODT) – It is not a Research – Users partnership based on a request from the latter .	The request is from an international NGO (ENDA) acting on behalf of the communities	Implementation of a participatory work approach between different research and development institutions.	Development partners	The main research institution (CRODT) joined partners to find a response to the request.	(a) It was more a situation of joint projects between Research and the other partners than real Research – Fishing Community partnerships built on requests from the latter. (b) Apart from research, partnerships were also established between professionals in the fisheries sector and other actors from the private sector (c) In the case of Research – Fisheries Professionals partnerships requests often emanate from users, reflecting the existence of certain capacities
	2	An international NGO (UICN) acted on behalf of fishing communities	The request was formulated by UICN on behalf of the fishing communities	Working relationship between the main research institution (CRODT), the service requestor (UICN) and the other actors involved	Partners (UICN…)	Research acted as service provider and found an internal response to the demand	
	3	Partnership between research institutions (CRODT, CREDETIP, UCAD) in the framework of a sub-regional programme – It is not a Research-User partnership.	The request is based on a research need (acquisition of scientific skills)	Working relationship between the main institutions involved and the foreign ones	Development partners	This was collaborative research and each research institution contributed its expertise	
	4	Partnership initiated by research (CRODT)	Several development partnerships have submitted requests – This is not a request from users	Working relationship between partners involved (CRODT, DOPM, OEPS)		The main partners organised themselves to find a response to the request	

	5	Farmer organisation (National Council for Rural Cooperation and Dialogue) on behalf of its members	Request submitted by a farmer organisation (FENAGIE-Pêche to an individual (MANOBI)	Formal relationship between the PO and the service provider (MANOBI)		The individual mandated to provide the service found an internal response to the problem	
	6	A farmer organisation (National Council of Artisanal Fishermen of Senegal-CNPS)	The farmer organisation (CNPS) submitted the request to Research (CREDETIP)	Functional working relationship between Research, the PO and the mutual (credit company in Senegal)	External financial partners	(CREDETIP), the research institution organised internally in collaboration with other partners to respond to the request	
	7	Small-scale fishing professionals via an Association (OCEANIUM)	The Association (OCEANIUM) submitted a request on behalf of fishing professionals	Functional working relationship between the association (OCEANIUM) , the professionals and the other actors using a participatory approach	External financial partners	The main institution (OCEANIUM) organised an internal response to the request	
	8	Partnership initiated by an international NGO (WWWF)	Request submitted by the international NGO (WWF) – The need is not on the part of fisheries professionals	Implementation of a reflective participatory approach	External financial partners	The lead institution which initiated the partnership organised with the professionals (PENAGIE-Pêche) and other actors to find a response to the request	
	9	Female fish processors GIE via a Research Institution (Institute for Food Technology – IFT)	Request from professionals (GIE) via a research institute	working relationship between Research (ITA), the professionals (GIE) and other partners	External financial partners	The lead institution (ITA) found an internal response to the request	

Annex 5: Terms of reference for the Study

Activities foreseen in the framework of the study of linkages between research and users of fisheries resources.

1. Evaluate the available research potential, its development id the course of the last few years and its possible contribution to SLA;
2. Identify the skills and research in traditional knowledge bases and resource management;
3. Study the impact of Policies, Institutions and Processes (PIP) in the area of research into fishing community livelihoods, using the methodology developed by SFLP, and highlighting the participation of actors in the decision-making process including management;
4. Analyse the links which exist between research, public policies and communities totally or partially dependent on fisheries;
5. Evaluate the contribution of research, including social science based research, on the decision-making process in fisheries management and the improvement of fishing community livelihoods;
6. Analyse the linkages existing between fisheries research institutes and other institutions conducting research in social sciences (research centres, NGOs, universities etc);
7. Make a diagnosis of the problems facing research in the context of improving fishing community livelihoods, and identifying options for improvement;
8. On the basis of the results of work conducted in each country, prepare proposals for activities to strengthen the contribution of research to poverty alleviation in small-scale fishing communities;
9. Organise a review and validation workshop on the outcomes of the study.

The review workshop bringing together the 6 countries covered will permit a comparison of the outcomes of different countries and bring activities to a close. This workshop will bring together representatives of technical ministries and research, decision-makers, representatives of the profession and NGOs.

Annex 6: List of participants to the planning workshop

12-14 June 2002 Cotonou, Benin

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