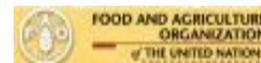# STREAM

The STREAM initiative

Support To Regional Aquatic Resources Management

Promoting participation, communication, and policies that support the livelihoods of poor aquatic resource users in the Asia-Pacific

Memorandum

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ACRONYMS

AARM	Aquaculture and Aquatic Resources Management Programme of AIT
ACIAR	Australian Council for International Agriculture Research
ADRA	Adventist Development and Relief Agency
APHEDA	Australian People for Health, Education and Development Abroad
ADB	Asian Development Bank
AIT	Asian Institute of Technology
ASFA	Aquatic Science & Fisheries Abstracts
CAGES	Cage aquaculture for greater economic security
CAR	Royal Government Council for Administrative Reform
CASD	Centro Alti Studi per la Difesa
CBFM	Community based Fisheries Management
CBNRM	Community based Natural Resource Management
CCFC	Christian Children's Fund Canada
CIDSE	Catholic International Cooperation for Development and Solidarity
CG	Consultative Group
CRS	Catholic Relief Services
CSP	Country Strategy Paper
CWS	Cooperative Wholesale Society
DANIDA	Danish International Development Agency
DELIVERI	Decentralised livestock services in the Eastern regions of Indonesia
DFID	Department for International Development
DG	Director General
DoF	Department of Fisheries
EIRFP	East India Rain fed Farming Project
EU	European Union
FAO	Food and Agriculture Organisation
FFP	Fourth Fisheries Project (Bangladesh)
FIAT	Fishery Management and Administration (FIAT) Law – Cambodian fishery law
FIGIS	Fisheries Global Information System
GAP	Governance Action Plan, Government of Cambodia
GDP	Gross Domestic Product
GTZ	Gesellshaft fur Technichezusaminarbeit
IDRC	International Development Research Centre
IUCN	International Union for Conservation of Nature
HDI	Human Development Index
HEPR	Hunger Eradication and Poverty Reduction Strategy, Government of Vietnam
HH	Household
ICLARM	"The Fish Centre"
INCODEV	EU research programme on development
INGO	International non-government organisation
INTERFISH	Integrated Rice Fish Production Strategies Projects in Bangladesh
IWDA	International Women's Development Agency
JICA	Japanese International Co-operation Agency
MAFF	Ministry of Agriculture, Fisheries and Forestry, Government of Cambodia
MARD	Ministry of Agriculture and Rural Development, Government of Vietnam
MCC	Mennonite Central Committee
MOFI	Ministry of Fisheries, Government of Vietnam
MOLISA	Ministry of Labour, Invalids and Social Affairs, Government of Vietnam
MoE	Ministry of Environment, Government of Cambodia
MPI	Ministry of Planning and Investment (Vietnam)
MRAG	Marine Resources assessment Group, Imperial college London
MRC	Mekong River Commission
MRD	Ministry of Rural Development, Government of Cambodia

NACA	Network of Aquaculture Centres in Asia-Pacific
NFEP	Northwest Fisheries Extension Project, Bangladesh
NGO	Non-government organisation
NORAD	Norwegian Agency for International Development
NOVIB	Oxfam (Netherlands)
PADEK	Cambodian NGO
PM	Prime Minister
PRA	Participatory Rapid Appraisal
PRASAC	EU development programme
PROFOUND	Cambodian NGO
RDC	Regional Development Committee
READ	Rural Extension for Aquaculture Development
RGC	Royal Government of Cambodia
RIA	Research Institute for Aquaculture, Vietnam
RNRRS	Renewable Natural Resources Systems
RUA	Royal University of Agriculture (Cambodia)
SAMADHI	NGO in Cambodia
SAMAKEE	NGO in Cambodia
SAPA	Sustainable Aquaculture for Poverty Alleviation Strategy
SAPL	School of Agriculture at Prek Leap (Cambodia)
SCALE	Cambodian NGO
SCoT	Shell Company of Thailand
SIDA	Swedish International Development Agency
SPARK	'The Sharing and Promotion of Awareness and Regional Knowledge'
STREAM	Support to Regional Aquatic Resource Management
TAC	Technical Advisory Committee
TCDC	Technical cooperation between developing countries, FAO
TSP	Target Strategy Paper
UNICEF	United Nations Children's Fund
UoS	University of Stirling, Institute of Aquaculture, Scotland
UNDP	United Nations Development Programme
USD	United States Dollars
VAT	Value Added Tax
VDC	Village Development Committee
VSO	Voluntary Service Overseas
WB	World Bank
WFP	World Food Programme
WWW	World Wide Web

CONTENTS

SUMMARY

1.1.1 Throughout the Asia-Pacific region capture fisheries and certain less intensive forms of aquaculture can and do play a vital role in livelihoods management, food security, and health and nutrition. Knowledge and experience exist that could be more effectively used in policy for poverty alleviation.

1.1.2 Although successful aquatic resource management case studies are available in the region, there is little documentation of lessons learned, few opportunities for dialogue and mutual learning, and sometimes poorly coordinated efforts to inform policy makers of the benefits of these approaches. As a result, awareness of successful practice among policy-makers, government agencies, regional institutions, non-government workers and natural resource users is low. These problems are compounded by the fact that much of the current information available on poor people's livelihoods and natural resource management issues tend to be disseminated within limited networks.

1.1.3 Aside from technology, many key aquatic resource management issues relate to resource access and control, the livelihoods of poor people, and governance. A key challenge must now be to establish support agencies and institutions that (i) utilise existing and emerging information more effectively, (ii) better-understand poor people's livelihoods, and (iii) enable poor people to exert greater influence over policies and processes that impact on their lives. To meet this challenge, the policies and processes of mediating institutions, and their capacity to (a) identify aquatic resource management issues impacting on the livelihoods of the poor, (b) monitor and evaluate different management approaches, (c) extend information, and (d) network within and between sectors and countries, need to be developed.

1.1.4 STREAM is designed within NACA's 5-year Work Programme cycle to support stakeholders to achieve these long-term objectives. It is a regional initiative that will:

- Support capacity building among local government institutions, NGOs, and community groups involved in aquatic resources management, including the provision of training and long-term practical support in livelihoods analyses and participatory approaches, support to poor aquatic resource users to participate more effectively in policy-making processes, and encouraging the development of more responsive government institutions.

- Support a number of new community-based learning initiatives, the practical experiences from which will combine with lessons learned from existing case studies and feed into STREAM's communication strategy to influence policy and practice in the region.

- Develop a regional communications and learning strategy to realise the considerable potential that exists to facilitate lesson-learning and improved co-ordination between current aquatic resource initiatives in the region, increase the participation of poor aquatic resource users in decision-making processes (through the use of innovative communication approaches), and ensure policy-making is informed by lesson learning

- Support on-going policy and institutional changes in the region, by facilitating policy development at the national level, increasing exposure to lessons and experience at the community level, maximising utilisation of the existing regional knowledge base, and providing capacity-building support to the change process.

1.1.5   The initiative is based around partnerships, involving at the outset a coalition of founding partners (DFID, VSO, FAO) supporting the Network of Aquaculture Centres in Asia-Pacific (NACA). It will adopt an inclusive approach, reaching out to link stakeholders engaged in aquatic resources management and supporting them to influence the initiative's design, implementation, and management.

1.1.6   Partnership working will be co-ordinated at the national level through National Co-ordinating Teams (linking a wide range of national stakeholders) and at the regional level through the STREAM Strategic Management Team). A communications matrix will link interactions and partnership activities around the STREAM objectives.

1.1.7   STREAM implementation will be an iterative process, piloting in year one in Cambodia and Vietnam only, where opportunities exist to tackle poverty and promote good governance. In the longer term, STREAM is committed to expanding to other countries as experience is gained, lessons are learned, impact is demonstrated, and additional funding is secured. STREAM's communication strategy will help to increase impact, by ensuring that the region's existing knowledge and expertise informs the on-going change processes in Cambodia and Vietnam, and that the lessons learned in these two pilot countries are disseminated throughout the 15 NACA member countries.

1.1.8   STREAM will not duplicate structures but operate through existing networks and institutions, strengthening their capacity where there is a need to do so. For example, in Vietnam, STREAM will operate through the SAPA Implementation Unit, and in Cambodia, a government-NGO coalition (The Community Fisheries Bureau of the Department of Fisheries and the localising NGO SCALE). In other countries, embryonic national co-ordination initiatives might be supported, e.g., in Laos, the coalition proposed by the RDC.

1.1.9   STREAM will follow a process approach managed by a Strategic Management Team that is integrated into the NACA Secretariat, and provided with resources to support activities by civil society and government that deliver the initiative's four outputs. It will follow on from the intensive preparatory work that has taken place between the coalition of partners over the last eighteen months.

1.1.10 NACA will establish a STREAM Initiative Trust, which will be administered by the STREAM Strategic Management Team.

1.1.11 External monitoring and evaluation will be carried out on an annual basis and contracted out to an independent organisation approved by and working on behalf of all donors to the STREAM trust fund. This will remove the administrative burden from donors and provide a single transparent mechanism for the coherent evaluation of the initiative.

2   LOGICAL FRAMEWORK

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Goal			
To secure and enhance the livelihoods of poor people in the Asia-Pacific region			
Purpose			
To develop capacity for poor and vulnerable aquatic resource users in the Asia-Pacific region to pursue their livelihood objectives	• Incorporation of best practice policies, processes, and institutional arrangements into national aquatic resources plans. • Poor aquatic resource users actively involved in the development, M&E of policies, processes and institutions.	• Programme M&E • Reports of M&E	
Outputs			
1. Poor and vulnerable aquatic resource users identified & livelihoods understood	• Studies that identify poverty and aquatic resource users completed in at least 4 countries by year 2. • Livelihood analyses completed in at least 4 countries by year 3. • Findings widely disseminated at national and regional level	• Study reports • Programme M&E • Study findings incorporated into database • Livelihood analysis reports • Programme M&E • Results incorporated into database	• Processes that identify poor aquatic resource users, understand their livelihoods, and highlight their capabilities and objectives, are strengthened • Appropriate strategies, practices and processes that demonstrate poor people can manage their aquatic resources are identified
2. Appropriate strategies, practices and processes identified	• Compilation of current and best practice involving at least 4 countries by year 2 • Accountable grants scheme established • Community pilots initiated by year 3 • Poor aquatic resource users actively involved in development and M&E of pilots	• Reports • Programme M&E • Findings incorporated into database	• Regional communication and learning between poor aquatic resource users, line agencies, civil society, researchers and the private sector is improved
3. Communication promoted to share knowledge, skills and policy; build links across the region	Networking • 2 national communication hubs functioning by year 2 • Functioning website well used by year 2 • Feedback from all levels of stakeholders appears in newsletter by year 2 • National users rate communications hubs as useful by year 2 M&E • Participatory M&E systems records significant changes in four STREAM country partner countries by year 3 Extension • Access surveys completed in 2 countries by Yr2 • 2-page journal evaluated as useful by all categories of stakeholders by year 3 • Target audiences adopt messages from novel extension trials	• User statistics • Presence of database • Programme M&E	• Policy and institutional changes designed to better support the livelihoods objectives of aquatic resource users, are supported

| 4. Regional and national policy and institutional changes supported | • Adopted regional policy guidelines on poverty alleviation in the aquatic resource sector informed by best practice support of CCRF by year 4.
• Adopted national aquatic resource sector plans, incorporating institutional arrangements, by at least 2 STREAM partners by year 4.
• STREAM judged to play significant role in regional planning by broad coalition of stakeholders by year 4. | • NACA Governing Council reports, briefs and policy statements
• Report of meetings of regional bodies, such as ASEAN, SAARC, MRC
• Programme M&E
• Findings of policy impact studies using standard formats | |

Activities		Inputs	
Activities to achieve Output 1: 1.1 Conduct studies of the nature and distribution of poverty and use of aquatic resources by poor people 1.2 Develop processes and learning materials for capacity building in livelihood approaches		• Refer to Annex 14	
Activities to achieve Output 2: 2.1 Collate, review and document strategies, practices and processes for managing aquatic resources and learning and communication 2.2 Establish & monitor new approaches for managing aquatic resource use in community pilots via accountable grants			
Activities to achieve Output 3: 3.1 Survey current access to information and additional needs 3.2 Build network of national communication hubs 3.3 Develop and launch STREAM Web-site 3.4 Develop and launch STREAM newsletter 3.5 Instigate media monitoring/issue alerting monitoring 3.6 Develop *significant change* monitoring and evaluation of approaches 3.7 Support development of novel extension mechanisms 3.8 Launch 2-page journal[1] 3.9 Continuous broad-based national and intra-regional networking sharing knowledge via communication matrix 3.10 Annual regional meetings 3.11 Translate media into local language 3.12 Regional workshops 3.13 National workshops			
Activities to achieve Output 4: 4.1 Identify entry-points/opportunities for regional and national policy and institutional change 4.2 Host strategic research & development planning 4.3 Monitoring and evaluation of approaches			

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[1] A journal in simple language of key issues written by scientists for aquatic resource users and support provided to community level partners to produce documentation on their (successful) experiences. Each article is up to 2-pages.

3   RATIONALE

3.1   BACKGROUND

The importance of aquatic resources to the poor

3.1.1   Throughout the Asia-Pacific region capture fisheries and certain less intensive forms of aquaculture can and do play important roles in securing and enhancing the livelihoods of poor people. Asia-Pacific region accounts for over 90% of the world's aquaculture production, more than 75% of which comes from low-income food-deficit countries. Smallholder farm communities cultivate most of this using low-value inputs and traditional technologies.

3.1.2   The management of lacustrine, riverine and rice field fisheries and the use of aquatic resources by poor people play a vital role in livelihoods management, food security, and health and nutrition. Although people's livelihoods and aquatic resources are seasonally and spatially highly variable, the sale and consumption of products derived from aquatic resource systems are critical to livelihood strategies (particularly coping with vulnerability) and are not easily substituted in the diet (especially of children and pregnant and lactating women).

3.1.3   In some parts of South East Asia, aquatic resources comprise a large proportion of the animal protein intake of poor households. Whilst households catch and consume significant quantities of fish and other aquatic products, there is evidence that access to wild aquatic resources is increasingly limited and that the resource itself may be declining. Annex 1 outlines some indicators of the role of aquatic resources in food security in the South East Asia region.

Sharing existing social and human capital

3.1.4   Support to aquatic resources management has so far been in a sectoral context, and focused mainly on research and technology development. Many aquaculture technologies that can contribute to poverty alleviation are already in place (see, for example, Annex 10Technical and environmental appraisal), whilst research on the major fisheries is advancing well and could influence resource use in the Mekong sub-region (e.g., MRC and DFID Fisheries programmes, DANIDA RUF, EU INCODEV).

3.1.5   It is often wrongly assumed that a lack of technical knowledge is a key constraint to poor people's management of natural resources. Evidence is increasingly showing that poor people have an enormous store of 'indigenous technical knowledge', such as the use of medicinal plants, water harvesting structures, fishing sites, etc, but this knowledge is often undervalued or completely ignored.

3.1.6   Successful aquatic resource management case studies do exist in Laos, Indonesia, the Philippines and Thailand, for example. However, there is little documentation of lessons learned, few opportunities for dialogue and mutual learning, and sometimes poorly coordinated efforts to inform policy makers of the benefits of these approaches. As a result, awareness of successful practice among policy-makers, government agencies, regional institutions, non-government workers and natural resource users is low.

3.1.7   These problems are compounded by the fact that much of the current information available on poor people's livelihoods and natural resource management issues tend to be disseminated within limited networks. Information gathering and dissemination has been mainly in print, often in English, and usually packaged for presentation to a fairly well defined audience. Most of these audiences have acquired a specific vocabulary and know all of the related language conventions surrounding its use (e.g. Scientific publishing: the call for papers, submission of abstracts, use of language, etc.; Conferences and symposia: short oral submissions [often accompanied by MS PowerPoint presentations], polite behaviour during opening addresses, conventions for questioning, etc).

3.1.8   These factors often take away locality and prevent natural resource users from participating in existing networks, because most poor people tend to share knowledge through local language text, and oral and visual communication systems.

Addressing broader livelihoods and governance issues

3.1.9   Aside from technology, many key aquatic resource management issues relate to resource access and control, the livelihoods of poor people, and governance. There is a growing recognition of the importance of socio-economic issues, and widespread discussion of 'livelihoods'. As the Sustainable Livelihoods framework becomes more readily accepted there is a greater understanding that:

- More effective participation of poor resource users in all stages of the policy-making process is not only a means for more effective development, but is a development objective in itself

- Viewing poverty alleviation in a more holistic framework argues the need for more effective co-ordination between the aquatic resource and poverty alleviation sectors, and across other sectors.

3.1.10 Therefore, a key challenge must now be to establish support agencies and institutions that (i) utilise existing and emerging information more effectively, (ii) better-understand poor people's livelihoods, and (iii) enable poor people to exert greater influence over policies and processes that impact on their lives.

3.1.11 To meet this challenge, the policies and processes of mediating institutions, and their capacity to (a) identify aquatic resource management issues impacting on the livelihoods of the poor, (b) monitor and evaluate different management approaches, (c) extend information, and (d) network within and between sectors and countries, need to be developed.

3.2 POLICIES

3.2.1 A detailed analysis of the institutional policy environment is provided Annex 9 (Institutional appraisal).

Government Policy

3.2.2 This section outlines key government policy in STREAM's two pilot countries, Cambodia and Vietnam (see 3.3.27), and highlights current policy changes and opportunities for STREAM to influence these processes[1].

<u>Vietnam</u>

3.2.3 The Hunger Eradication and Poverty Reduction (HEPR) strategy under the Ministry of Labour, Invalids and Social Affairs (MOLISA) has been recognised in Vietnam and internationally as a successful framework for decentralised decision-making in relation to local poverty reduction objectives. Inter-ministerial co-operation under the HEPR is coordinated by MOLISA with each line ministry responsible for formulation of policy, the mechanism by which this is implemented, and to provide implementation guidance at the local level.

3.2.4 The intention for 2001-2010 is to expand the poverty alleviation content of HEPR and to enact policies that encourage communication of appropriate technologies, strengthen and diversify capital assets, and reduce the vulnerability of the poor. The Ministry of Fisheries (MOFI) played a limited role in the first decade of the HEPR strategy, as its focus was more on industrial and commercial scale development, especially of aquaculture. However, there is now strong agreement amongst government and many donors that aquaculture and improved aquatic resources management can make a significant and direct impact on poverty reduction and hunger eradication in Vietnam (see Annex 10).

3.2.5 To address the key policy issue of better support to poor and vulnerable groups who depend on or could make use of aquatic resources, MOFI has prepared the "Sustainable Aquaculture[2] for Poverty Alleviation" strategy – SAPA. The strategy was born out of a broad ranging strategy dialogue[3], and forms part of the HEPR. Its strength lies in its emphasis on a process approach that will build further on the understanding derived from sustainable livelihood analyses and local pilots.

3.2.6 SAPA recognises that there is a need for:

- Awareness raising and better communication of the role of aquaculture and aquatic resources in sustaining poor people's livelihoods

- Improved understanding of participatory approaches

- Improved institutional capacity with a pro-poor focus

- Addressing the gap that exists between farmers/fishers needs and the services offered by extension institutions

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[1] When selecting other STREAM countries, identifying potential policy influence opportunities will be a key factor.
[2] The term 'aquaculture' in the government document refers to the culture of aquatic organisms and management of aquatic resources.
[3] This included: 100 representatives from MOFI, MPI, MOLISA, and the Ministry of Agriculture and Rural Development (MARD), as well as provincial government agencies and people's organisations; international organisations and donors, including NORAD, DFID, FAO and NACA who played a key role in planning and facilitating of meetings, as well as AIT, DANIDA, ACIAR and UNDP, WB, ADB and many representatives from the Embassies.

- Appreciating the wide range of stakeholders involved in aquatic resource management

- Addressing the issues of access to markets and financial services by the rural poor.

3.2.7 The challenge now is to operationalise the new policy and to implement it successfully. This will involve a great deal of orientation and capacity building in the livelihoods approach at a number of levels.

3.2.8 The MOFI sees a significant opportunity to link national aquatic resources development through the SAPA strategy with regional networking through STREAM. The SAPA strategy document, which became government policy in May 2001, suggests that the SAPA implementation unit within the ministry be developed as the national STREAM agency in Vietnam (see 4.1.6). This provides a strong basis for learning from other experiences of implementing livelihoods-based and CBNRM approaches in the region, and for sharing Vietnam's experiences of managing significant policy change in fisheries with others.

Cambodia

3.2.9 The primary policy objective of the Cambodian Department of Fisheries is the management and administration of the fisheries domain, i.e., all permanent and temporary water bodies, including flooded forests and all living animals and vegetation able to reproduce, which are considered property of the state. This includes the management and administration of 15 sanctuaries.

3.2.10 For many years the main focus of Cambodian fisheries policy has been exploitation of the fishery resource through a system of auctioning fishing concessions or lots for revenue generation. However, advocacy for change by and on behalf of large numbers of local people excluded from the resource has resulted in dramatic changes in policy over the last 12 months, the appointment of a new Director of Fisheries, and further reforms planned for the future (see Box 6).

3.2.11 These changes provide opportunities to tackle poverty and promote good governance. The key vehicle for change is institutional change and the reformulation of the fisheries law, which is taking place in 3 main ways:

- A complete revision of the existing FIAT Law

- The urgent development of key sub-decrees covering key topics

- Plans to undertake analyses and learning initiatives to inform strategic change in policy (over a necessarily longer timeframe).

3.2.12 If poverty is to be eliminated through the promotion of sustainable livelihoods, a significant constraint in Cambodia is the limited knowledge of the livelihoods of poor rice farmers, the landless, and the category of fishers known in law as 'subsistence' or 'family-scale fishers'. This is crucial because it affects the policies, approach and appropriateness of extension to these groups. More importantly, it also affects the legal status of fishing by the poor, with current policy effectively legislating against their capacity to escape from poverty through increased fishing effort.

3.2.13 The Secretary of State of the Ministry of Agriculture, Fisheries and Forestry (MAFF)[1] and Director of the Department of Fisheries[2] are seeking support from STREAM to better-inform the strategic changes that are required to consolidate this momentum already generated. This includes capacity building in livelihood approaches and analyses, and lesson learning in fisheries administration (especially co-management). Specifically:

- The Director of the Department of Fisheries has reiterated that capacity building support in livelihood analysis and piloting analyses is a priority, so that the reformulation of Article 15 will better-reflect the livelihood strategies of poor fishers and guide sustainable practices. (Article 15 still refers to 'subsistence fishing' and currently precludes trading in fish by this group, many of whom are landless and trade fish for rice and other commodities.)

- Following the rapid preparation of a sub-decree on community fishing and Articles 76, 77 and 78 of the revised fisheries law regarding co-management, the Secretary of State and Director of the Department of Fisheries have articulated an urgent need to learn lessons from initiatives in similar social and resource systems to avoid continued conflict and unsustainable exploitation.

- Aside from legal reforms, there are key institutional change objectives that were discussed at the CG meeting in Paris, and which are relevant to fisheries as well as other sectors. This includes devolving budgetary authority to line ministries and directors of provincial departments, and implementing a strategy to rationalise expenditure on, and the management of, human resources[3]. An alternative way forward is being sought with donors and the Department to support the development and operation of a common human resources management policy for Fisheries[4].

3.2.14 Longer-term strategic initiatives are needed to provide the depth of understanding required to protect poor people and allow them to participate in the management of their aquatic resources. Currently in Cambodia the institutional structure is extremely weak outside of the capital. An opportunity exists for STREAM to facilitate greater bottom-up planning and prioritisation, by building links between the Ministry of Rural Development (MRD), with its mandate to encourage participation through the creation of decentralised institutions that support development actions carried out by Village Development Committees (VDCs), and the embryonic development of livelihoods-based approaches within the DoF.

Policies of start-up partners

3.2.15 This section outlines the key institutional policy environment behind the coalition of partners supporting the start-up of STREAM, NACA, DFID, VSO and FAO.

Network of Aquaculture Centres in Asia-Pacific (NACA)

3.2.16 The Network of Aquaculture Centres in Asia-Pacific (NACA) is an intergovernmental agency of fifteen member Asia-Pacific countries. Its mission is to assist member

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[1] HE the Secretary of State May Sam Oeum

[2] Nao Touk

[3] If donors *projectise* and carry out key government tasks, opportunities for capacity building and institutional strengthening may be adversely affected. For example, *ad hoc* assignments and temporary positions within projects can compromise career paths, and competitive salary support from donors undermines opportunities and incentives for resource sharing and other possible synergies.

[4] A proposal for working towards an agreement between the DOF and donors, which supports a human resource development system in the context of multi-donor funding, has been prepared by the AIT AARM Co-ordinator and STREAM, which has been received favourably by the Director of the Department of Fisheries.

governments to improve opportunities for sustainable aquaculture and aquatic resources management development, and to contribute to social and economic development in the Asia-Pacific region.

3.2.17 Recognition during the mid-1990's of the fundamental role of aquatic resources in the livelihoods of poor people in the Asia Pacific region led NACA to strengthen its focus on poverty alleviation and improving the livelihoods of people living in rural areas. The 9th NACA Governing Council meeting (held in December 1997) agreed to develop a regional aquatic resources management programme that would address the issues of poverty alleviation and food security.

3.2.18 The Secretariat, with assistance from DFID, FAO and VSO, proposed an inclusive regional initiative that reached out to link stakeholders engaged in aquatic resources management, and adopted a livelihoods approach. The 12th NACA Governing Council Meeting (held in December 2000) endorsed this as a major new initiative, entitled 'Support to regional aquatic resources management' - STREAM. This endorsement from the governments of the region provides a very strong mandate for STREAM implementation.

3.2.19 Following close liaison with the DFID Aquatic Resources Management Programme and a major participatory policy review within NACA, rural development has become the core business of the intergovernmental network. STREAM will support NACA to operationalise this new focus of its work plan for 2000-2005, by building on the well-respected technical and networking experience of the past two decades.

Department for International Development (DFID)

3.2.20 The Department for International Development (DFID) is responsible for promoting development and reducing poverty. The DFID South East Asia office recently ended an extended period of support to aquaculture in the region through a regionally focussed academic institution and is reviewing its objectives for aquatic resources management support in the context of its livelihoods approach. The substantial and increasing support by DFID to the sub-sector in Asia highlights the importance it attaches to the role of aquatic resources management in the livelihoods of poor people.

3.2.21 The policy and resource planning of DFID South East Asia is shaped by British government policy on international development, which is set out in two White Papers (November 1997 and December 2000). In addition, DFID has devoted considerable intellectual resources to producing Target Strategy Papers (TSPs), which present understanding of best strategies for achieving the international development targets and priorities for DFID action.

3.2.22 STREAM is a livelihoods approach to poverty reduction. It specifically addresses a number of priority analyses and action commitments within DFID's 'Halving World Poverty' TSP (Annex 2), whilst the best practices that will be promoted through STREAM's communications strategy are strong practical deliverables of the policy described by the White Paper (Annex 3).

3.2.23 DFID produces Country Strategy Papers (CSP's) for countries where there are bilateral agreements, including Cambodia and Vietnam. STREAM's objectives are mutually supportive of the strategic priorities set out in DFID's CSP for Cambodia and Vietnam (Annex 4).

Voluntary Service Overseas (VSO)

3.2.24   Voluntary Service Overseas (VSO) is an international development agency, which builds capacity through the placement of professionally qualified and experienced volunteers. Support to STREAM is consistent with the key directions set out in VSO's Corporate Strategic Plan, *Increasing the Impact*, namely, prioritising the needs of the more disadvantaged, facilitating more effective sharing of skills and capacity building, and promoting new forms of partnership to achieve common goals and increase policy influence.

3.2.25   VSO has recently signed a three-year 'Programme Partnership Agreement' with DFID, which encourages closer DFID-VSO collaboration. VSO support to STREAM is consistent with this agreement, particularly in terms of joint programming, shared learning and influencing policy.

3.2.26   At the national level VSO produces Country Strategic Plans, including Cambodia and Vietnam. VSO support to, and the objectives of, STREAM are mutually supportive of the strategic priorities set out in VSO's CSP for Cambodia ('To contribute towards meeting the needs of the poor by increasing VSO's input into agriculture and the environment', and, 'To form strategic partnerships that allow VSO Cambodia to realise their potential in meeting the needs of the most disadvantaged') and Vietnam ('We will help more disadvantaged people make sustainable and appropriate use of natural resources').

Food and Agriculture Organisation (FAO)

3.2.27   The Food and Agriculture Organisation of the United Nations (FAO) has a long history of support to NACA. This includes facilitating NACA's establishment in 1990, supporting the Sustainable Aquaculture for Rural Development (SARDev) programme, and sponsoring the Conference on Aquaculture in the Third Millennium, which was held in Bangkok in February 2000 and resulted in 'The Bangkok Declaration'. In the aquatic resources management sub-sector, the FAO currently collaborates with NACA and DFID to implement the Code of Conduct for Responsible Fisheries, and the Sustainable Aquaculture for Poverty Alleviation (SAPA) strategy in Vietnam.

3.2.28   The FAO fully supports and endorses the catalytic development of STREAM initiative. FAO and NACA have already collaborated in rural aquaculture development initiatives in the region and envisage to continue collaboration on addressing the aquatic resources management and rural livelihoods issues of the region. FAO's Technical Co-operation Programme (TCP) is a funding mechanism that has been frequently channelled through NACA in the past for work in the aquatic resource management sub-sector in the region. Amongst other things, TCP funding is able to FAO member countries to support 'Training and advisory services', and the 'Promotion of inter-country co-operation'. Additional criteria for TCP support includes 'Increased production or income', 'Priority of the governments', 'Play a catalytic role', and 'Complementary of other sources of assistance'. STREAM fits each of these criteria well. NACA, on behalf of its member governments, will request FAO for TCP assistance in support of initiating some STREAM activities. FAO is hopeful that TCP assistance could be provided to bring STREAM activities forward.

3.3 APPROACH

3.3.1 The STREAM approach is embodied in the mission statement and guiding principles set out in Box 1. To put these principles into practice the STREAM initiative will follow a regional approach, build capacity to understand and secure livelihoods, increase participation in communication, and facilitate lesson learning in policy development. STREAM's framework of support is illustrated in Annex 5. There are four outputs:

- Processes that identify poor aquatic resource users, understand their livelihoods, and highlight their capabilities and objectives, are strengthened

- Appropriate strategies, practices and processes that demonstrate poor people can manage their aquatic resources are identified

- Regional communication and learning between poor aquatic resource users, line agencies, civil society, researchers and the private sector is improved

- Policy and institutional changes, which are designed to better support the livelihoods objectives of aquatic resource users, are supported.

Box 1   Mission statement and guiding principles

Mission statement
STREAM seeks to build capacity to understand and secure the livelihoods of poor aquatic resource users, accelerate communication and learning between stakeholders, and facilitate policy-making that supports the interests of the poor throughout the Asia Pacific region.

Guiding principles
Policy change
The active development of policies, institutions and processes that work for and include the poor is necessary to breakdown the inequity of power that constrains poor aquatic resource users from realising livelihood opportunities.

Securing effective participation and sustainable livelihoods
Aquatic resource management will be both appropriate and sustained, if those whose livelihood strategies depend on aquatic resources are fully involved in the definition of objectives and policies.

Centrality of communications
Dialogue and collaboration between stakeholders will increase awareness and skills for livelihoods support for and by poor people, and the sustainable management of aquatic resources.

Open process and partnerships
An open process promoting collaboration and partnership among institutions and agencies will facilitate support for the livelihoods of poor people. STREAM will provide a platform for cooperation and an opportunity for more effective institutional collaboration towards common development goals that support poor people.

Coalition of partners

3.3.2 STREAM will adopt an inclusive approach, reaching out to link stakeholders engaged in aquatic resources management and supporting them to influence the initiative's design, implementation, and management. The diverse coalition of partners that will support the start-up of STREAM (Annex 6) have worked together over the last 18 months to negotiate a shared vision, input different experiences and expertise into the

planning process, and implement pilot activities in Cambodia and Vietnam. One important outcome of this collaborative process is this shared memorandum. This coalition will increase in size and diversity as STREAM expands into other countries, and awareness and understanding of the initiative increases among other stakeholders.

A regional approach

3.3.3   People, water and living aquatic resources are interconnected at a very local level, administered nationally, but commonly are trans-boundary in nature. The planning and management of aquatic resources is necessarily local, national and regional. STREAM will therefore take a regional approach.

3.3.4   The regional dimension is especially relevant because of the degree of commonality in the problems and solutions across the region. There will be efficiencies and economies of scale in having a wider regional platform for learning and sharing experience. In addition to more information and greater access to experience, support and positive examples from other countries strengthens the effectiveness of advocacy, by providing legitimacy and policy influence from national governments and/or intergovernmental bodies.

3.3.5   A substantial aquatic resource management knowledge base already exists in the region, much of which is based on indigenous knowledge. A regional approach will maximise the use of this information, ensure the regional expertise is optimised, and provide greater opportunities for south-south dialogue and mutual learning.

Box 2   Example of support - Enabling Cambodian stakeholders to attend a regional CBNRM workshop in The Philippines

VSO is implementing a five-year natural resource management programme (The Sharing and Promotion of Awareness and Regional Knowledge - SPARK), which aims to promote community-based approaches to natural resource management in South East Asia. The programme focuses on Indonesia, The Philippines, and Thailand.

SPARK will hold a regional workshop in the Philippines in November 2001 on 'Managing Tensions and Conflict in Natural Resource Management'. The objective of the workshop is to provide a forum for CBNRM practitioners in the region to share and analyse different approaches and to stimulate the development of learning tools in relation to tensions and conflicts in natural resource management.

The workshop will focus on the practical on-the-ground experiences of community-based groups and support organisations. Case examples from different countries, ecosystems, and sectors will be presented and discussed, and lessons learned documented, translated into local languages, and disseminated through VSO's network of community-based and district level partners.

STREAM will support representatives from two of VSO's aquatic resource sector partners in Cambodia (the NGO, SCALE, and the Community Fisheries Bureau of the Department of Fisheries) to attend this workshop. This will increase their exposure to, and opportunities to learn from, the experiences of others in the region, add a new dimension to SPARK by facilitating input to/from a fourth country, contribute to SPARK's objective of increasing networking between CBNRM practitioners in the region, and provide an appropriate entry point for increased co-operation between the SPARK network and STREAM.

Network of Aquaculture Centres in the Asia-Pacific (NACA)

3.3.6   STREAM will operate through the Secretariat of the Network of Aquaculture Centres in Asia-Pacific (NACA), an intergovernmental agency of 15 member Asia-Pacific countries. Following close liaison with the DFID Aquatic Resources Management Programme and a major participatory policy review within NACA, rural development has become the core business of the intergovernmental network. STREAM will support NACA to operationalise this new focus of its work plan for 2000-2005, by building on the well-respected technical and networking experience of the past two decades.

3.3.7   NACA is funded by contributions from member governments. As such, it represents a well-used and effective vehicle for regional networking. NACA has a long-term presence and strong ownership by national line agencies that wish to pursue a rural development remit, broader networking, and the implementation of STREAM. The endorsement of STREAM from the governments of the region at the 12th NACA Governing Council Meeting (held in December 2000) provides a very strong mandate for its implementation.

Building capacity

3.3.8   STREAM will support capacity building among local government institutions, NGOs, and community groups involved in aquatic resources management. It will provide training and long-term practical support in livelihoods analyses and participatory approaches, support poor aquatic resource users to participate more effectively in policy-making processes, and encourage the development of more responsive government institutions.

3.3.9   To better understand and secure livelihoods, STREAM will support partners to (i) better identify aquatic resource management issues of poor people, (ii) increase their awareness of livelihoods approaches, (iii) improve livelihoods analyses, and (iv) institutionalise livelihoods approaches.

3.3.10 STREAM's communication strategy (3.3.13) will include an important capacity building element, particularly in terms of (i) increasing the capacity of organisations to utilise learning and share knowledge, (ii) supporting the documentation of learning initiatives, (iii) supporting disadvantaged aquatic resource users to document their experiences, and (iv) increasing the capacity of networking organisations to disseminate information.

3.3.11 STREAM will enable partners to better-identify and disseminate best-practice, by providing support to monitor and evaluate different aquatic resources management approaches, and address the gap that exists between farmers/fishers needs and services offered by extensionists.

Box 3	Example of support - Capacity building in Cambodia and Vietnam

Training in sustainable livelihoods approaches
In February 2001, DFID organised two sustainable livelihoods training workshops, one in Cambodia and one in Vietnam. The objective of the workshops was to increase awareness of the sustainable livelihoods framework and to develop sustainable livelihoods analysis action plans that would be piloted by four livelihoods teams in each country.

Participants included representatives from the Department of Fisheries, Ministry of Women's Affairs, INGOs, and local NGOs. To increase effectiveness and promote inclusivity, the workshops were held in local languages and in English. Considerable time was spent clarifying differences in meaning between English and the local language, and within the local language itself. Though time-consuming, the benefits of common understandings are now very evident.

Since these workshops, the four livelihoods teams (each of which contain representatives from different government departments and the non-government sector) have undertaken sustainable framework analyses in different contexts in each country, with follow-up support from DFID. Using the lessons learned from these pilot experiences to inform the process, STREAM will replicate this process on a larger scale with the objective of supporting the institutionalisation of livelihood approaches in each country.

The provision of long-term practical support
VSO has recently placed two volunteers with aquatic resource management stakeholders in Cambodia. The first is a Management Advisor working with the Department of Fisheries, under AIT's Aqua Outreach Programme the objective of which is to improve information sharing management systems, both within the Department and with external stakeholders.

The second is a Community Development Advisor working with the Cambodian NGO, SCALE, the objectives of which are to support livelihoods analyses of communities dependent on aquatic resources, and the preparation and implementation of community plans based on the capabilities, livelihoods objectives, and participation of the local community.

STREAM will provide long-term practical support through volunteer placements such as these, using the lessons learned by VSO to inform the process.

Learning initiatives

3.3.12 Though successful aquatic resource management approaches exist in the region, the number that can contribute to STREAM's four outputs is limited. To increase the number of successful approaches from which lessons learned can influence policy changes, STREAM will support a number of new community-based learning initiatives. The practical experiences of these demonstrations will combine with lessons learned from existing case studies and feed into STREAM's communication strategy to influence policy and practice in the region.

Improving communication

3.3.13 STREAM will develop a regional communications and learning strategy to increase the participation of poor aquatic resource users in decision-making processes and ensure policy-making is informed by lesson learning (see Box 5). Key STREAM communication opportunities are summarised in Annex 7 and Annex 8.

3.3.14 The STREAM communication strategy will realise the considerable potential that exists to facilitate lesson-learning and improved co-ordination between current aquatic resource initiatives, as well as other initiatives that work with rural people dependent on aquatic resources but which address issues such as health and nutrition, community forestry, and good governance.

Box 5   Levels of Communication and the hierarchy of participation

Discussions with stakeholders in the Asia-Pacific, including on-going projects, line agencies and civil society groups, clearly indicate that there are various understandings of the term 'communication'. This includes:

Dissemination of research findings and project activities, largely between similar organisations. Considerable research has been conducted in the region and beyond, but it has not been made adequately available. The impact of disseminated information on policy is very difficult to monitor.

Exchange of information, primarily reports, periodicals and web pages, and largely between similar organisations. There is a need for more effective exchanges of information between policy-makers and resource users, between different sectors, and between similar activities (often working in the same region).

Co-ordination to be aware of what other projects and institutions are doing and/or have done. This is becoming an increasingly important issue as interest in aquatic resource issues rises among diverse sectors.

Networking as a mechanism to secure more effective partnerships. Existing networks exist at many levels (between ministries, farmers, researchers etc) but there is considerable potential for strengthening.

Networking as a mechanism to strengthen **civil society's** organisation and representation. There have been some efforts towards this but some do not appreciate the implications of such approaches, as it is not regarded as within the policy-making process.

Advocacy. Presenting evidence and arguments to policy makers, donors and other stakeholders, generating interest through the public media, making people aware of their legal rights and providing mechanisms for them to represent themselves. This is usually in the form of NGO initiatives, or of wider environmental campaigns.

Lesson learning. The sharing of practical experience through task-oriented activities through, for example, interactive forum, workshops, field visits, exchanges, etc. This is overwhelmingly considered to be the most effective approach to communication and influencing policy.

These approaches to communications are not mutually exclusive. Moving along the scale is likely to be both more participatory and to have more easily identifiable impacts on policy outcomes, as represented in the diagram below.
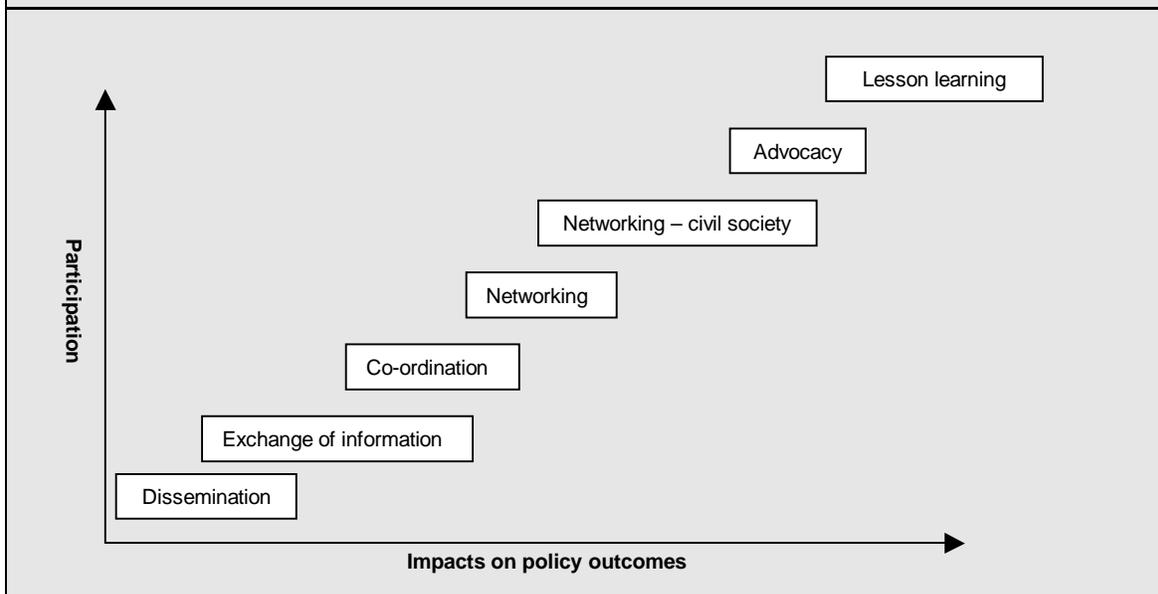
3.3.15 The STREAM communication strategy will also contribute to and extend the reach of existing networks in the region, as well as existing partnerships between government agencies, NGOs, community organisations and resource users. Extending the reach of networks between poor resource users will be particularly important, since they are an essential mechanism for enabling civil society to demand responsive government institutions and processes.

3.3.16 Although there is a considerable wealth of aquatic resource-related information in the region, it is not always readily available or available in appropriate formats. STREAM will consider a number of innovative communication approaches to ensure information is disseminated in user-friendly practical forms that promote effective lesson learning and policy change. This will include case studies/trials as learning initiatives (see 3.3.12), workshops and field visits, translation of materials into local languages, use of the public media and the internet, discussion groups, pictorial communication, etc.

3.3.17 To support lesson learning, STREAM will organise well-focused workshops and field visits that are based on practical, applied experience, and which bring together a wide range of partners from poor aquatic resource users to policy-makers. These will provide poor aquatic resource users with a good opportunity to influence policy-makers and an important mechanism to build their capacity and strengthen their networks. Areas of interest are likely to focus on co-management, small-scale aquaculture (including building linkages with other sectors), sustainable livelihoods, and linking aquatic resource management to governance and decentralisation.

3.3.18 The public media are essential instruments of civil society and therefore have considerable potential to generate debate, involve poor aquatic resource users, and support advocacy campaigns, thereby facilitating greater influence on key issues and policy discussions. To maximise this opportunity, STREAM Communications Unit will establish a Media sub-Unit to gather information and coordinate relations. The Unit's tasks will include a press clipping service, facilitating field visits for local journalists, and preparing guidelines for conducting press conferences and preparing press releases.

Policy and institutional changes

3.3.19 STREAM will support on-going policy and institutional changes in the region, by facilitating policy development at the national level, increasing exposure to lessons and experience at the community level, maximising utilisation of the existing regional knowledge base, and providing capacity-building support to the change process.

3.3.20 More reliable data concerning the production and socio-economic value of capture fisheries and small-scale aquaculture technologies is now available. However, it is increasingly apparent that the provision of such information does not in itself necessarily lead to policy outcomes. Likewise, many 'policy influencing strategies' are often based on assumptions of how policy processes work and the relationship between these strategies and policy outcomes are not always clear. The current policy review in Cambodia is a timely example (Box 6).

3.3.21 STREAM will develop a strategic understanding of the relationship between information, communication, and policy outcomes through analyses of policy-making processes in the region. This will ensure the STREAM communication strategy has an impact at the policy level. The communication strategy will promote methods of data

gathering, analysis, and dissemination that support the effective participation of poor resource users, and institutionalise their role in communicating with policy makers.

Box 6   The current fisheries policy review in Cambodia

The current policy review and surrounding debate in Cambodia raises many issues that are relevant to STREAM. The dramatic policy change was largely unexpected. Even now, there are many different interpretations as to why it happened as it did.

It is apparent that many factors contributed, including public protests, pressure from civil society organisations, and regular reporting in English and Khmer newspapers. It is significant to note that several projects and programmes that have been operating in Cambodia for many years did not predict these changes, and still struggle to explain the political process by which they happened.

It is clear from this issue that many forces influence policy decisions, and that such dramatic decisions are not always based on information or scientific evidence, as many projects documents often suggest are the case.

As the DOF in Cambodia now attempts to come up with an appropriate legislative framework, there is increasing interest in developing a model of co-management. This is an area where there is considerable experience in the region, including, for example, DFID's work in Bangladesh.

STREAM will facilitate the policy making process in Cambodia, by supporting Cambodian government and non-government stakeholders to draw on this knowledge base, and by providing capacity-building support to implement the change process.

3.3.22 It is often assumed that policy only refers to official pronouncements and legislation, rather than what is implemented. It is possible to influence policy through local level implementation that is later supported through official policy[1], rather than wait for appropriate legislation. STREAM will support this approach to policy influence through the implementation of learning initiatives (see 3.3.12).

Partnerships

3.3.23 The initiative is based around partnerships, involving at the outset a coalition of founding partners (DFID, VSO, FAO) supporting the NACA network of15 Asia Pacific country partners. Partnership working will be co-ordinated at the national level through National Co-ordinating Teams (linking a wide range of national stakeholders) and at the regional level through the STREAM Strategic Management Team). A communications matrix will link interactions and partnership activities around the STREAM objectives.

3.3.24 The key elements of partnership working will include:

- Piloting country partnerships with Cambodia and Vietnam and expanding over time the number of STREAM country partners.

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[1] This was the approach adopted in community forestry in Cambodia. While the debates have continued about appropriate legislation, local level implementation has continued with provincial support and has fed into the lesson learning process that has informed the policy discussion.

- Promoting, and in some cases instigating, national networking amongst broad ranging national stakeholders within STREAM country partners.

- Building and supporting teams to develop and test participatory and livelihood approaches to inform service provision and policy development in STREAM country partners.

- Linking national networks and knowledge sharing nodes, through facilitated web-based links and a network of STREAM communication co-ordinators.

- Developing a mechanism for the sustained influence of partners over the management and strategy of STREAM.

3.3.25 A system of accountable grants will be established to support STREAM's communication strategy (workshops, field visits, discussion groups, translation of materials into local languages and appropriate formats, etc) and the learning initiatives. This fund will support the development of partnerships with civil society organisations, national and local government, and aquatic resource associations that strategically contribute towards aquatic resource policy and practice in the region. Work supported by accountable grants must be:

- Designed managed, and owned by partner organisations and their beneficiaries

- Coherent with the work of other development organisations in the locality

- Financially, technically, socially and environmentally sustainable

- Contain identifiable objectives within a limited timeframe and indicators of achievement to measure progress and impact.

3.3.26 Potential policy partner categories will include poor people in communities, those who influence opinion and bring together other stakeholders and those who make official policy or have significant policy influence. Partner selection criteria will include:

- A capacity to provide services to poor and vulnerable aquatic resource users

- A willingness to work with local communities using participatory

- An ability to contribute to STREAM's outputs

- An ability to learn from experience and share lessons learned with others

- An ability to work effectively with policy makers

- A willingness to make their own contribution (including in-kind) to the proposed work

- Be able to prove that they have the operational, administrative and financial capacity to undertake the proposed work

- Not discriminate in terms of ethnicity, religion, gender, race, disability, etc.

The Strategic Management Team will confirm final partner selection criteria and detailed administrative arrangements in participation with the National Agencies.

Iterative start up

3.3.27 STREAM implementation will be an iterative process, piloting initially in a small number of NACA member countries only, but with a commitment to expand to others

as experience is gained, lessons are learned, impact is demonstrated, and additional funding is secured.

3.3.28 In year one of implementation, STREAM will pilot in Cambodia, and Vietnam only, where opportunities exist to tackle poverty and promote good governance. These were selected by NACA using transparent selection criteria, including:

- The importance of the aquatic resources sector to the country's national economy and the livelihoods of poor people

- The potential for STREAM to add value to on-going policy changes in the country

- The country's willingness to share their experiences with others in the region

- The country's position on the HDI

- The country strategic priorities of STREAM's founding partners.

STREAM is likely to expand to Laos and Nepal in year two (and thereafter to India and Sri Lanka), though this will depend on a review of the first year of implementation and new expressions of interest that arise from other NACA member countries in year one.

3.3.29 In year one, STREAM will focus on building capacity, implementing learning initiatives, and supporting policy and institutional changes in Cambodia and Vietnam. STREAM's communication strategy will help to increase impact, by ensuring that the region's existing knowledge and expertise informs these processes, and that the lessons learned in Cambodia and Vietnam are disseminated throughout the 19 NACA member countries.

3.4 APPRAISAL ISSUES

Institutional

3.4.1 A detailed institutional appraisal, which focuses on the situation in STREAM's pilot countries (Vietnam and Cambodia) and considers the role of regional organisations, is provided in Annex 9.

3.4.2 Giving the poor greater access to aquatic resources and supporting the sustainable management of wild and cultured resources requires major reform of aquatic resources governance and service provision. The constraints are numerous, complex and inter-related, and relate to policy, legislation, administration, rules of the game, and the relative power of different actors, many of which cannot be addressed by an initiative the size of STREAM.

3.4.3 Despite these formidable challenges, several on-going changes in the region provide opportunities for STREAM to facilitate reform that will spread the benefits of the region's aquatic resources more widely and provide greater livelihoods opportunities for the poor.

Vietnam

3.4.4 In Vietnam, the government's Hunger Eradication and Poverty Reduction (HEPR) strategy has been recognised as a successful framework for poverty reduction. Within this overall strategy, there is now general agreement amongst government and many

donors that aquaculture and improved aquatic resources management can make a significant and direct impact on poverty reduction and hunger eradication in Vietnam. To address this issue, the Ministry of Fisheries (MOFI) has prepared the 'Sustainable Aquaculture for Poverty Alleviation' strategy[1] – SAPA.

3.4.5   SAPA was born out of a broad ranging strategy dialogue[2], and its strength lies in its emphasis on a process approach that will build further on the understanding derived from sustainable livelihood analyses and local pilots. The key challenge now is to operationalise SAPA and to implement it successfully. This will involve a great deal of orientation and capacity building in the livelihoods approach at a number of levels.

3.4.6   The MOFI sees a significant opportunity to link national aquatic resources development through the SAPA strategy with regional networking through STREAM. The SAPA strategy document, which became government policy in May 2001, suggests the implementation unit within the ministry be developed as the national STREAM agency in Vietnam. This provides a significant opportunity for Vietnam to learn from the experiences of implementing other livelihoods-based and CBNRM approaches in the region, and to share their experiences of managing significant policy change in fisheries with others in the region.

Cambodia

3.4.7   In Cambodia, the Ministry of Rural Development (MRD) is mandated to mobilise local potential and encourage participation through the creation of decentralised institutions that support village development actions carried out by Village Development Committees (VDCs). There is some convergence of opinion among donors, international NGOs and government that the Village Development Committees (VDCs) are an appropriate first step in facilitating greater bottom-up planning and prioritisation. An approach by UNDP/CARERE, involving PRA training for the VDC and support to commune planning, is emerging as a dominant decentralisation model.

3.4.8   Following recent unrest in relation to fisheries administration, the new Director of the Department of Fisheries has ushered in a new era of rapid changes in fisheries policy especially changes to fisheries law and the administration of commercial fishing. Some key events and current issues are:

- The fisheries law has been revised. A first complete draft is now out for consultation, with Provisional Fisheries and Agriculture Directors. Consultations will follow over the next 4 months, with a workshop planned for August-September as the culmination of the consultation process.

- Aquatic resources management by the poor are referred to in law as *subsistence fishing*. Article 15 of the draft now refers to subsistence fishing and currently precludes poor people from trading in fish.

- Following the PM recommendation, 12 sub-decrees have now been finalised releasing fishing lots. All lots valued at less than 30 million riel have now been abolished as well as some lots up to a value of 300 million riel where a lot of conflict over fishing had existed. Following consultations involving the Ministry,

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[1] The term 'aquaculture' refers to the culture of aquatic organisms and the management of aquatic resources.
[2] This included: 100 representatives from MOFI, MPI, MOLISA, and the Ministry of Agriculture and Rural Development (MARD), as well as provincial government agencies and people's organisations; international organisations and donors, including NORAD, DFID, FAO and NACA who played a key role in planning and facilitating of meetings, as well as AIT, DANIDA, ACIAR and UNDP, WB, ADB and many representatives from the Embassies.

provincial fisheries and lot operators, a draft sub-decree detailing the new bidding process for fishing lots is now finalised.

- Articles 76, 77 and 78 of the revised fisheries law regarding co-management and a new sub-decree on community fisheries is with the Ministry Agriculture, Fisheries and Forestry, prior to its passage to the PM for signing. A sub-decree dealing with the establishment of a new Bureau of Community Fisheries Development is currently with the MAFF.

3.4.9 The Secretary of State for MAFF and the DG of Fisheries have emphasised that Article 15 requires reformulation to better reflect the livelihood strategies of poor fishers and to guide sustainable practices, and have reiterated that capacity building in livelihood analysis and piloting analyses is a priority. They have also emphasised a desire and requested support to learn lessons from initiatives in other areas, emphasising the experience of DFID in Bangladesh and opportunities for learning and sharing through STREAM.

3.4.10 Despite these developments in each country, there remains a lack of understanding amongst key government stakeholders. This combines with inefficient (and sometimes resistant) government agencies to prevent institutions from responding effectively to local needs and priorities. In addition, a lack of awareness at the grass roots as to the roles, responsibilities, and tools associated with CBNRM prevents the development and replication of approaches by communities.

3.4.11 These are all areas where STREAM can add value to the on-going change process in each country, by providing support mechanisms that:

- Change attitudes through increased awareness of current issues and approaches

- Build consensus/shared understanding

- Demonstrate to all groups that it is feasible to have aquatic resource management by local groups in the interests of a broader group, including the poor

- Empower a wide range of stakeholders through strengthened communication channels.

Regional organisations

3.4.12 There is a clear potential for STREAM to facilitate regional information exchange in partnership with selected organisations that have a regional presence in the aquatic/natural resources management sector. This includes, but is not limited to, the Mekong River Commission (MRC), Food and Agriculture Organisation (FAO), Network of Aquaculture Centres for Asia-Pacific (NACA), AIT Aqua Outreach, other DFID programmes (particularly Bangladesh and Fisheries Research Programmes), and Voluntary Service Overseas (VSO).

3.4.13 Although regional networking is not a current strength or paramount amongst other regional players, it is none-the-less an objective of all. Each of the above institutions view STREAM as a vital element in regional communication, with a clear potential to link policy makers, information providers, poor resource users, and those engaged in advocacy for the poor. Each also has a key role to play in information generation and other dimensions of regional interaction.

3.4.14 Although at an early stage, through a process of dialogue and consensus building, there is now growing momentum for DFID, FAO, NACA, and VSO to work together to support STREAM to become an effective instrument for support to poor aquatic resource users. Current joint working with MRC, by NACA, FAO, DFID and AIT on documenting current status of and recommendations for aquaculture development over the next decade also augers well for donor collaboration and effective joined up working under the STREAM initiative.

Technical and Environmental

3.4.15 A detailed technical and environmental analysis is provided in Annex 10.

3.4.16 Livelihood diversification is a survival strategy of many rural households in developing countries. As a diversification option, aquaculture is sometimes incorrectly perceived as a high-risk investment, outside of the scope of the poor. Yet aquatic resources management is not only a useful compliment to land-based livelihoods but can represent a technologically simple, low-risk activity that provides a quick return, to fund other activities and build confidence to diversify.

3.4.17 There are many successful examples from around the region of policies, processes, and technologies that support sustainable aquatic resources management by poor people. A number of these are of special relevance to the STREAM initiative and have been collated by the DFID Aquatic Resources Management Programme. These are summarised in Table A.10.1 (Annex 10), which includes powerful examples of where aquaculture represents a useful entry-point for sustainable rural development.

Economic

3.4.18 A detailed economic appraisal is provided in Annex 11.

Cambodia

3.4.19 In Cambodia, inland fisheries, and to a lesser though still important extent, aquaculture and marine fisheries, provide a central source of food, employment, trade and economic well-being. Annual freshwater fish production is currently estimated to be 290,000-430,000 tonnes, representing a contribution of 8.8-10.3% to GDP.

3.4.20 Half of this total production is estimated to contribute directly to the livelihoods of the poor, one-third of which is from so-called family fishing and 15-25% from rice field fisheries. The average annual per capita consumption of fish is estimated at 23-31 kg. Including the per capita consumption from aquaculture of about 1.2 kg, this is far larger than the consumption of other protein sources such as beef (3.3 kg), pork (8.5 kg) and chicken (2.8 kg).

3.4.21 Aquatic resources management by poor people in Cambodia is divided geographically into fish capture around the Tonle Sap and the Mekong corridor, and aquaculture as a diversification strategy in 'sugar palm-rice complex' farming systems in upland areas. STREAM will support increased understanding of the livelihoods of these people, and provide opportunities for upland farmers to expand diversification through small-scale aquaculture, and fishers to influence those local and national policies and practices that affect the sustainable management of and their access to the resource.

3.4.22 STREAM will support poor community fishers to capture increased economic benefits from Cambodia's aquatic resources (which is the 4th largest inland fishery in the world), by facilitating policy changes in the country, increasing awareness of successful aquatic resource co-management initiatives in the region, and increasing capacity to implement co-management systems in the Cambodian context.

Vietnam

3.4.23 Vietnam has made remarkable progress in economic growth and development since the beginning of economic reforms in the early 1980s. Since 1988, aggregate GDP has increased on an annual basis by an impressive 8-10% in real terms, putting Vietnam among the 10 fastest growing economies. Industrial sector growth has been rapid (13% per annum), whilst the well-established agriculture sector has grown at an annual rate of 4.5% during 1992-1998.

3.4.24 The performance of the agricultural sector has led to a dramatic improvement in the incomes of rural households, which have risen by 61% over the five years between 1993 and 1998, increasing the share of agriculture in rural incomes to 47%. However, there is concern that the limit to increased rice production based on further expansion of the area under cultivation has been reached. Apart from the Central Highlands, most land suitable for agriculture is already cultivated and new settlers have to do with less fertile land.

3.4.25 These concerns, taken together with the vulnerability of the world market for rice, reinforce the need for appropriate forms of agricultural diversification. Operationalising the SAPA strategy linked with the STREAM initiative will offer support to poor aquatic resource users and support opportunities to diversify.

Social

3.4.26 A detailed social appraisal is provided in Annex 12.

Governance and conflict

3.4.27 The proper management of fishing from the perspective of sustainable natural resources management and equitable rural development is a special and complex policy issue in the region. Cambodia is a specific example. Nearly 10 million people live in rural areas, of which 4.3 million live on less than US$113 per year. Rural landlessness and loss of access to traditional fishing grounds are an increasingly common phenomenon, yet the fish resource is one of the worlds largest.

3.4.28 At the local level, institutional deficiencies can be magnified by interference from other local authorities such as military units or police. Widespread conflicts are reported in Cambodia. Access to common water bodies is prevented, and intimidation, harassment, threats to physical security, and rape are all used as weapons of social control.

3.4.29 STREAM cannot address the issues of governance and conflict but will provide mechanisms for poor people to highlight their situation, express their views and share their objectives, through the use of innovative communication approaches such as video and film diaries, and extending the reach of networks, which don't yet include these groups. STREAM will also complement increased communication potential, by building capacity amongst support agencies to understand the livelihoods of poor resource users so that policy and practice can better reflect reality.

<u>Ethnicity</u>

3.4.30 Ethnicity is an important issue in the context of aquatic resource management. In Cambodia, historical ethnic cleansing of Khim, selective patrolling in relation to Cham and Khim ethnic groups, the predominance of Khmer in the DoF, and different competencies and perceptions of the various groups, impacts on the development and implementation of legal and policy issues. In Vietnam, fish culture is traditional among some ethnic groups (e.g., Tai and Muong) and appears to have spread to others[1]. In Cao Bang, a northern province of Vietnam near the border with China, few wild fish exist and few are available in the market. However, a local variety of common carp is a staple part of the diet and trade in the fish and their seed are a key component of local livelihoods.

3.4.31 Through livelihood analyses, which highlight plurality in customs and ways of living, and the selective impacts of institutions and policies on different ethnic groups, the STREAM initiative will aim to promote equity by increasing transparency. By institutionalising greater analyses and understanding of diverse livelihoods, the STREAM initiative will also highlight indigenous knowledge and facilitate greater diversity and suitability in approaches to support.

<u>Gender</u>

3.4.32 Access to aquatic resources is more limited for women than for men. In extreme cases, men are using sexual assault and the threat of sexual violence to restrict women's mobility and access to natural resources[2]. Laws dealing with rape and sexual harassment are still to be passed in some countries, e.g., the Government of Cambodia[3]. The absence of legal protection is a barrier to women's full participation in access and control of natural resources. This impacts especially on families headed by women (sometimes comprising one in five rural households, either on a seasonal or permanent basis[4]). It further obstructs the fundamental right of all women to live without the fear of violence both inside and outside of the home.

3.4.33 Political power often accumulated via patronage systems disadvantages women, as they are often unable to amass the economic and social resources necessary to sustain such relationships. For lasting and effective rural development it is necessary to confront these cultural and structural barriers that inhibit the transformation of existing gender inequalities and inequities.

3.4.34 STREAM will work with mixed gender teams to analyse livelihoods to maximise the sharing of issues of relevance to women and men. The formation of livelihood teams from the provincial Department of Women's Affairs and the Department of Fisheries in Cambodia, and the Vietnamese Women's Union and the Department of Agriculture and Rural Development in Vietnam, underlines this commitment amongst STREAM partners.

<u>Nutrition and human capital</u>

3.4.35 Good health and appropriate nutrition are fundamental to the use of other capital assets. Fish and other aquatic products play an important role in health and nutrition, are widely in demand, and cannot be easily substituted.

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[1] (Little, Tuan and Innes Taylor, 1997)
[2] In some areas the armed guards patrolling fishing lots have used rape as a weapon of social control.
[3] Beijing +5 Working Group 2000
[4] Mehta, M. 2000, *Community Development and Landlessness. Mini Case Study 8.* Oxfam GB Cambodia Land Study Project: Phnom Penh.

3.4.36 Well-managed aquatic resources not only provide opportunities for food security and income generation but also locally supplied animal protein and a range of vitamins and essential trace elements, which are found in few other foods. In particular, it contains appreciable quantities of lysine, an essential amino acid found in only small amounts in local cereals, rice, wheat and maize, which form the basis of the diet of many low-income groups.

3.4.37 Tiny shrimps, crabs and green aquatic vegetables, available even amongst many of the poorest families, have been shown to reduce second and third degree malnutrition in children under 3[1]. Importantly, fish (especially small fish eaten whole) is a valuable source of calcium, iodine, iron and Vitamin A. Their increased availability to pregnant mothers and young children helps to counter public health problems such as goitre, maternal anemia and night-blindness, which are prevalent in the region.

3.4.38 According to WHO (1999), as many as 125 million children are currently at risk of Vitamin A deficiency in S E Asia. Though the countries in the region have launched short-term Vitamin A deficiency prevention programmes, such as supplementation with Vitamin A capsules, a more sustainable solution would be to encourage dietary diversification and ensure higher dietary intake of Vitamin A-rich foods, such as fish.

3.4.39 STREAM will highlight the value of aquatic resources to poor people, especially to planners and managers outside the fisheries sector, through networking and improved dissemination. This will help to emphasise the role of nutrition in human capital asset building and the role of aquatic resources in the nutrition of poor groups.

Stakeholder analysis

3.4.40 The main stakeholders, their interests, and the potential impact of STREAM is presented in Table A.12.1 (Annex 12). The initiative has at its core an inclusive learning and communications platform that will link a diverse range of stakeholders in order to shape opinion, strategically plan, and learn from 'pilots and learning initiatives'. The initiative will allow groups to participate in presenting their own perspectives, views and aspirations in relation to aquatic resources management in the region.

3.4.41 Stakeholders have been classified in Table A.12.1 into potential policy partner categories:

> P1: Poor people in communities who depend on aquatic resources who are important but have little influence

> P2: Those who influence opinion, link and bring together others stakeholders, and who shape ideas or concepts about aquatic resources management

> P3: Government and private sector organisations who make official policy or have significant influence in policy formulation or on day-to-day practice.

STREAM will support a learning and communication platform to empower those without influence and inform policy makers. P1's will increasingly influence as participatory methods and livelihood approaches are institutionalised. All partners will generate and receive information facilitated by the STREAM communications strategy. There will be greater learning through better sharing of the activities of P2's, and through specific learning initiatives. As opportunities arise, STREAM will be able to influence and support P3's to act on behalf of P1's.

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[1] Save the Children, 1998

<u>Issues of primary stakeholders</u>

3.4.42 STREAM's primary stakeholders are poor people who depend on aquatic resources. Aquatic resources are of particular importance in the livelihoods of the landless (e.g. those who trade fish for rice and other commodities), the rural poor (whose livelihoods commonly depend upon aquatic resources, forest resources and a small amount of rice land), and ethnic minorities (where low-input aquaculture has successfully supported livelihoods, e.g., in Vietnam).

3.4.43 Because of the paucity of reserves (i.e., savings and food stocks, especially for poor households), common property resources, especially aquatic resources, are of pivotal importance in ensuring food security. In some parts of South East Asia, aquatic resources comprise a large proportion of the animal protein intake of poor households, and whilst households catch and consume significant quantities of fish and other aquatic products, there is increasing evidence that wild aquatic resources are declining.

3.4.44 The management of ubiquitous small-scale water bodies is of particular interest to communities. These play an important role in subsistence needs and income generation, and fisheries technologies exist to increase the standing stock and returns to fishing effort. However, initiatives to enhance the management of such systems, which catalyse changes in use patterns and access, raise important issues about managing the process, and whether benefits accrue to the poor.

<u>Sustainable Livelihoods policy and partners</u>

3.4.45 An e-mail conference[1] and reports of aquatic resources use and poverty in Cambodia and Vietnam co-ordinated by DFID Aquatic Resources Management Programme have highlighted the diverse livelihoods associated with aquatic resources management. Many communities derive benefit from individual fishing, foraging for aquatic resources, culturing fish, fish catching and processing, supplying commodities to fishers, fish farmers, distributing and selling products.

3.4.46 Commercial fishing on a large scale (e.g., in Cambodia) limits the availability of aquatic resources to poor communities. Coping strategies have led in some cases to waged labour in legal and illegal activities. At the same time, the resource is being exploited unsustainably. Alternative strategies and access to other sorts of capital assets are limited. Many communities are geographically isolated from markets and suppliers. Social assets like traditional institutions and networks, as well as human assets like the community knowledge base, have been eroded by poor governance and pressure on the aquatic resource. Lack of access to aquatic resources aggravates the vulnerability of communities to trends and shocks and stresses.

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[1] Aquatic Resources Management for Sustainable Livelihoods of Poor People Proceedings of the DFID-SE Asia Aquatic Resources Management Programme E-Mail Conference, June 2000 Edited by Graham Haylor

4 IMPLEMENTATION

4.1 MANAGEMENT ARRANGEMENTS

4.1.1 STREAM's human resource management structure is detailed in Annex 13.

Strategic Management Team

4.1.2 STREAM will follow a process approach managed by a Strategic Management Team that is integrated into the NACA Secretariat, and provided with resources to support activities by civil society and government that deliver the initiative's four outputs. The team will comprise a STREAM Co-ordinator, a Senior Support Officer, a Support Officer, and a NACA core staff member (Rural Development Specialist). Other NACA staff (e.g., Computing and Database Specialist) and external consultants will support the team as and when necessary. It will follow on from the intensive preparatory work that has taken place between the coalition of partners over the last eighteen months. The Strategic Management Team will be responsible for reporting to the NACA governing council.

Communications management - a matrix approach

4.1.3 STREAM will adopt a matrix approach to communications management to ensure effective communication between the initiative's diverse range of stakeholders spread over a wide geographical area (Box 7). This will include the use of e-mail, telephone, printed documentation, and national and regional team meetings. There will be three principle lines of communication:

- **At the national level**, STREAM Co-ordinating Teams will co-ordinate national capacity building and the national sharing of information. These teams will comprise representatives from community groups, government ministries and departments, provincial and district authorities, NGOs, research and training organisations, and donor initiatives, with the aim of uniting broad groups of national stakeholders to better share knowledge and increase collaboration within countries. A Team Co-ordinator will be elected by team members to co-ordinate communication between national stakeholders, with other National Co-ordinating Teams, and with STREAM's Functional Units (see below).

- **At the regional level**, STREAM co-ordination will be the responsibility of the Strategic Management Team. The initiative will be co-ordinated through five Functional Units, Poverty and Livelihoods, Information Resource Development, Communications, Policy Development, and Special Issues. These relate to STREAM's four outputs, whilst the 'Special Issues' Unit is designed to ensure that STREAM responds to emerging opportunities and constraints in a timely manner. These Units will facilitate regional capacity building and the regional sharing of information. They will operate under the guidance of the Strategic Management Team, with different members of the team being responsible for the co-ordination of each Unit (Annex 13).

- STREAM will support the development of communication lines **between National Co-ordinating Teams** through the initiative's learning initiatives and elements of the communication strategy (study tours, exchanges, etc). Where identified as necessary, STREAM will provide other forms of support to build upon the links established through these activities.

4.1.4 The communications management matrix illustrated in Box 7 represents the minimum level of commitment required of the National Co-ordinating Team, i.e., to communicate STREAM-related information effectively with a wide range of stakeholders at the national level, and at the regional level through STREAM's Strategic Management Team.

4.1.5 This approach to communications management will be piloted in year one in Cambodia and Vietnam only, with a view to expanding it to other target countries as lessons are learned and experience gained. Workshops are planned over the coming months in the two pilot countries, at which a diverse range of stakeholders will agree selection criteria for National Co-ordinating Team members, and transparent, cost-effective communication and organisational mechanisms. This will ensure these mechanisms are culturally appropriate to each country and nationally owned. For some of these stakeholders, implementation will be a smooth transition from the intensive preparatory work over the last eighteen months.

4.1.6 STREAM will not duplicate structures but operate through existing networks and institutions, strengthening their capacity where there is a need to do so. For example, in Vietnam, STREAM will operate through the SAPA Implementation Unit, in Cambodia, a government-NGO coalition (The Community Fisheries Bureau of the Department of Fisheries and the localising NGO SCALE). In other countries embryonic national co-ordination initiatives might be supported e.g. in Laos, a coalition proposed by the RDC.

4.1.7 To ensure the existing knowledge and expertise from the region informs change processes in Vietnam and Cambodia, and that the lessons learned in Cambodia and Vietnam are disseminated more broadly, STREAM's communication strategy will operate beyond the two pilot countries. It will achieve this by working with potential National Co-ordinating Team members in other countries (e.g., the RDC in Laos, DFID in Bangladesh, and VSO's SPARK programme in Indonesia, The Philippines and Thailand) as and when opportunities arise to do so.

Consultant support

4.1.8 A number of international and local consultant team members will support the Strategic Management Team and National Agencies, by conducting research with partner organisations to gain a strategic understanding of policy-making processes in the region, identify appropriate points of influence, and recommend action that STREAM can take to promote policy changes which better-support the livelihoods objectives of aquatic resource users. Consultants will also be recruited to work on 'Special Issues' as and when necessary.

Box 7   Communications management - a matrix approach
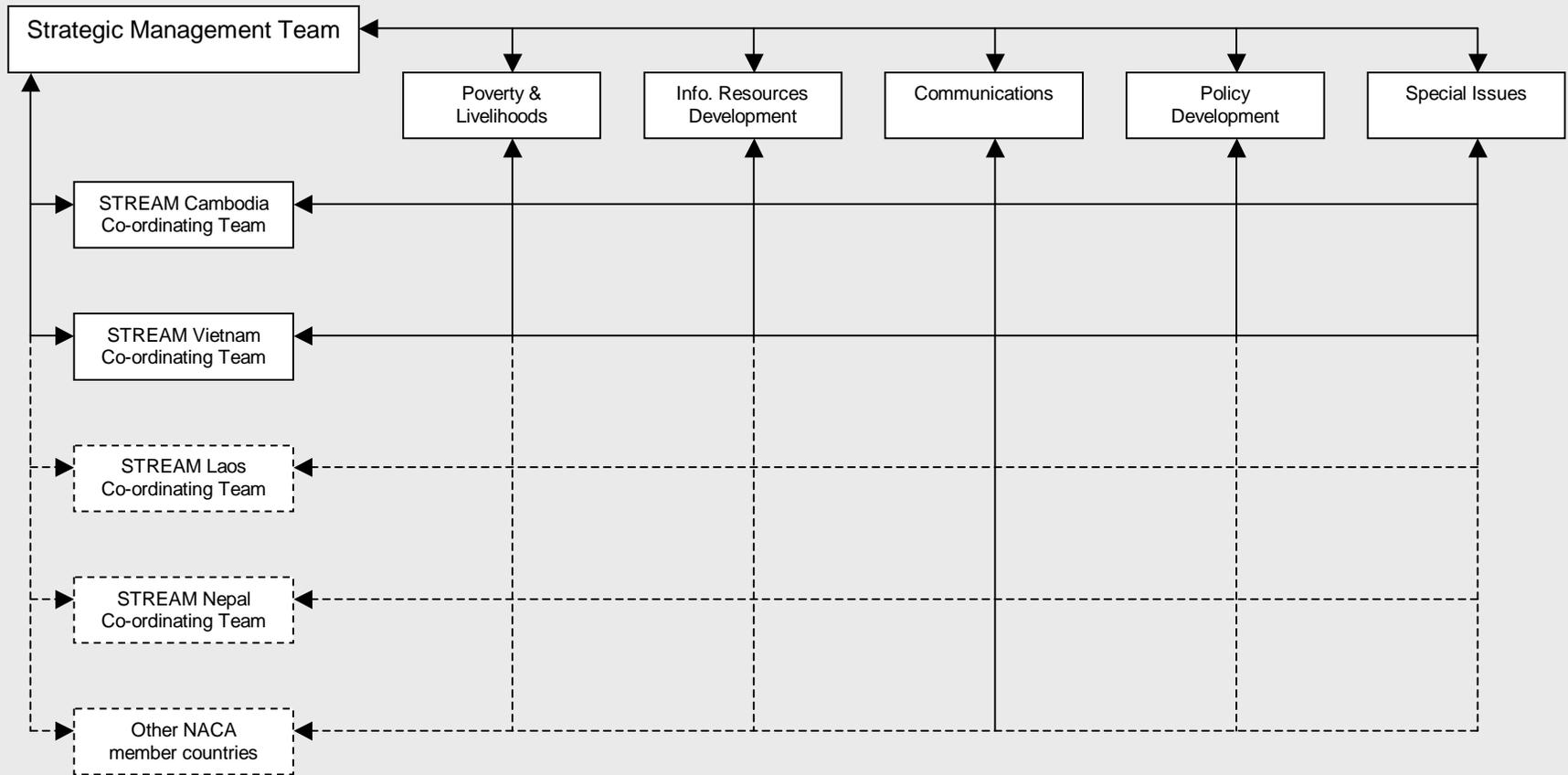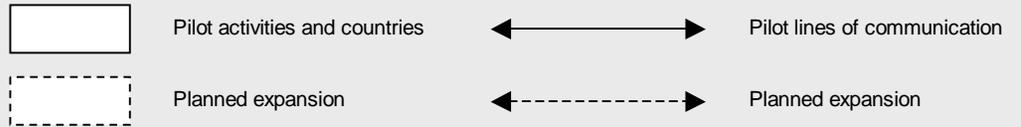
Accountable grants

4.1.9 During the preparation period accountable grants have supported partnership activities as detailed in Annex 13. These lessons have informed the preparation of this memorandum, reflecting the process approach adopted by STREAM.

4.1.10 The STREAM Senior Support Officer will support the National Agencies to oversee the appraisal and approval of partnership proposals. The Officer will manage fund dispersal, and co-ordinate the monitoring of implementation and evaluation of impact. Administrative systems will be developed in consultation with the national teams.

4.2 TIMING

4.2.1 A Gantt Time Chart with milestones is provided in Annex 14.

4.2.2 STREAM follows on immediately from the participatory preparation process, which was initiated at the end of 1999 and draws to a close at the end of 2001. There will be a seamless transition from preparation to implementation. Indeed, many pilot activities have already been implemented in Cambodia and Vietnam over the last year. The initiative is designed as a five year flexible learning process but it is recognised that longer may be needed to see through the process of change in the region.

4.3 INPUTS

4.3.1 STREAM's inputs are presented in Annex 14.

4.4 CONTRACTING AND PROCUREMENT

4.4.1 STREAM's Strategic Management Team will be responsible for adapting NACA procedures to ensure transparent, cost-effective contracting and procurement in consultation with STREAM National Co-ordinating Team members. Implementing these procedures will be a key agenda item at the first STREAM regional meeting, which will be held during the middle of the first year of implementation and attended by the Strategic Management Team and representatives of the National Co-ordinating Teams from the two pilot countries.

4.5 ACCOUNTING

4.5.1 STREAM's Strategic Management Team will be responsible for adapting NACA procedures for transparent, cost-effective administration of core-funds, accountable grants, and start-up funding. Applying these procedures and building capacity to implement them will be another key agenda item at the first STREAM regional meeting (4.4.1).

4.5.2 NACA will establish a STREAM Initiative Trust, which will be administered by the STREAM Strategic Management Team.

4.6 MONITORING AND EVALUATION

4.6.1 External monitoring and evaluation will be carried out on an annual basis and contracted out to an independent organisation approved by and working on behalf of

all donors to the STREAM trust fund. This will remove the administrative burden from donors and provide a single transparent mechanism for the coherent evaluation of the initiative.

4.6.2   Internal monitoring and evaluation is central to the STREAM process and poses special challenges owing to the complex nature of the changes supported, and the geographical spread of partners. There is provision for an independent organisation to work with the Strategic Management Team and National Co-ordinating Teams to design systems and procedures that keep track of progress against objectives, and which are owned by the initiative's partners. These systems will inform STREAM's annual regional meetings, which will provide an opportunity for stakeholder representatives to reflect on achievements and discuss the future strategy of the initiative.

4.6.3   STREAM's logical framework (2) will form the basis of the initiative's monitoring and evaluation system. Participatory reviews of the logical framework will be conducted at the start of implementation and at the end of years one, two and three with each STREAM National Co-ordinating Team and at the annual regional meetings. The intention is to produce a revised logical framework that each stakeholder is signed up to, and which can be used to develop detailed work plans for the coming year.

4.6.4   The current logical framework is an outcome of this process, and follows extensive dialogue between STREAM's start-up partners. STREAM will continue this learning process throughout the life of the initiative.

4.6.5   The core team and key stakeholders will hold annuals meetings to assess progress with activities, outputs, the manner of implementation, and the selection of additional STREAM countries. These will review changes in the wider policy environment, including the backward and forward tracking of important policy changes, analyses of local and national level policy linkages, and the potential for STREAM to support changes in other countries. Against this background, the annual reviews will consider the progress and continued relevance of:

- Implementation of activities

- The achievement of outputs, the balance between the four outputs, and their relevance to (and lessons learned for) the evolving policy environment

- The operation and effectiveness of partnerships with the three stakeholder groups, the balance between them, and the extent of participation

- The strength of links with donors and prospects for working towards a common framework for supporting aquatic resources management in the region

- The way the initiative is being implemented (effectiveness of facilitation, effectiveness of communications management, effectiveness of partnerships, scope for joint funding with other donors)

- Existing STREAM countries and potential new ones.

4.6.6   The first annual meeting will contain seven main elements:

- Collection and analysis of information on the points listed above, and any other relevant information

- Discussion between the core team and key stakeholders on the implications of this information for achievement of STREAM's outputs

- Identification of any changes required to keep STREAM on track

- Dialogue with other donors on developing a common approach to supporting aquatic resources management in the region

- Assessment of budget requirements in the light of progress and consideration of case for scaling activities up or down

- Assessment of two potential new STREAM countries (at this stage, thought likely to be Laos and Nepal)

- A review of information needs and planning for the Output to Purpose review at the end of year two.

4.6.7 An Output to Purpose review will take place at the end of year two. It will cover the same ground as the first annual review, as well as an assessment of prospects for achieving the purpose and expanding to other countries. It will also look ahead and develop preliminary ideas for sustaining the outputs and impact beyond the end of the initiative.

4.6.8 The outcome of the annual meetings and findings from monitoring and evaluation will be reported to the governments at the annual meeting of the NACA Governing Council.

4.6.9 To ensure these reviews are informed by practical on-the-ground experience, STREAM will use *significant change* approaches to monitoring and evaluating changes at the community and district levels, providing capacity building support to local level partners where there is a need to do so. STREAM will build on the experiences of VSO, LFS in Laos, the Christian Commission for Development in Bangladesh and other practitioners who have used this bottom-up monitoring and evaluating approach to record changes at the grassroots. Implementation of the approach will also act as a useful learning tool for all STREAM partners.

4.7   RISKS AND UNDERTAKINGS

Risks

4.7.1 The STREAM initiative is ambitious. It aims to address the key issue of limited communication regarding aquatic resources management between stakeholders at all levels, from within and outside of the sector. Its mechanism for achieving this involves facilitating a change in paradigm, in which inclusion of the poor is a development goal in itself. The need for more livelihoods-based approaches is appreciated by STREAM's partners in Cambodia and Vietnam, as too is the necessity for large-scale capacity building, especially at key provincial and district levels.

4.7.2 The key risks to achieving STREAM's purpose are those associated with the wider reform process underway in partner countries. These include:

- In Cambodia, large-scale demobilisation, the proposed trials associated with the Khmer Rouge leadership, weak governance and financial administration and accountability, and conflict between stakeholders about aquatic resources (especially access). Within the government sector, rapid and unpredictable changes could confound strategic approaches based on understanding livelihoods.

- In Vietnam, risk in the wider reform context includes liberalisation and decentralisation, especially providing opportunities for the poor to engage with, and contribute to, sustainable economic growth. Within the government sector the risk is that centrally planned, technically focused 'solutions' will prevail over empowering poor aquatic resource users.

4.7.3 Policy change processes are complex and poorly understood. Therefore although learning, communications and inclusion will facilitate policy change opportunities (e.g. those identified currently in Cambodia and Vietnam), such processes do not guarantee pro-poor policy change outcomes. STREAM is designed to address these risks; the learning and communications actions supported by the initiative are those at the request of and approved by the fisheries sector line agencies within governments of the NACA, and the capacity building actions are designed to encourage, support and strengthen inclusive policy change processes.

Undertakings

4.7.4 The following undertakings have been agreed in Cambodia:

- That Article 15 of the new fisheries law that precludes poor people from trading in fish requires reformulation to better reflect the livelihood strategies of poor fishers. That livelihood analyses should inform the reformulation of article 15. That to this end, the Department of Women's Affairs and the Department of Fisheries will pursue jointly capacity building in livelihood analysis and piloting analyses as a priority.

- That increased opportunities and incentives for resource sharing and other possible synergies amongst government departments, NGOs and donors will be sought through the STREAM initiative.

- That a concept for working towards an agreement between the DoF and donors on human resource strategies for the Department of Fisheries will be developed.

- That opportunities for sharing experiences of community fisheries management, including experience from DFID Bangladesh and elsewhere, will be sought by the new Bureau of Community Fisheries.

4.7.5 The following undertakings have been agreed in Vietnam:

- That government SAPA policy on pro-poor aquatic resources management will be a process approach to support poor aquatic resource users, and will build on the understanding derived from sustainable livelihood analyses and local pilots.

- That the SAPA Strategy forms part of the Government umbrella 'Hunger Eradication and Poverty Reduction' strategy.

- That the implementation of SAPA will be executed by an Implementation Support Unit (ISU), which will be part of the MOFI, provided office space in the Ministry, and use a Sector Committee to guide the overall development of the strategy.

- That the SAPA ISU will be the national focal point for linkage with STREAM.

- That appropriate focal points at provincial, district and commune levels will be selected for communications and information exchanges, and the communications network will be gradually expanded during implementation of the SAPA strategy. The focal points at the commune level will implement the

day-to-day activities, assisted by the provincial and national networks. SAPA implementation will be decentralised, with support as necessary from the ISU.

ANNEXES

ANNEX 1 INDICATORS OF THE ROLE OF AQUATIC RESOURCES IN FOOD SECURITY

	NORTH EAST THAILAND	CAMBODIA	LAOS	VIETNAM
1. ROLE OF AQUATIC RESOURCES IN THE DIET	• 72-82% of animal protein consumed in the wet season in Yasothon province comprises of wild aquatic resources derived from rice fields	• Fish and fish products account for 70-75% of the dietary protein intake of the population of Cambodia	• Fish had traditionally contributed 85% of animal protein intake. • A recent survey in Luang Prabang Province found fish to represent 50-55% of animal protein intake. • Fish still represents the largest component of animal protein in the diet.	• Fish in An Giang Province contributes nearly 76% of the average person's supply of animal protein. • The role of aquatic resource in the diet of northern provinces is much less.
2. FISH PRODUCTION & CONSUMPTION ESTIMATES	• Average consumption for North East Thailand is 30-34 kg per capita per year according to three independent studies. • Fish availability in the hungry season is highly valued.	• Average consumption is 28-41 kg per capita per year. • However, in eight provinces around the great lake and the Mekong (a population of 4.1 million out of a nation population of 10.5 million), household sample surveys suggest the consumption of fish and processed fish to be at least 67kg per capita per year. • Some rice fields outside of the above provinces provide families with 62 kg per ha.	• Average consumption 11-22kg per capita per year in poor villages in Savanakhet Province. • In some parts of Luang Prabang Province in the north consumption is 22 kg per capita per year. • Some small water bodies contribute 66kg hectare per year to production in Savanakhet. • Average HH catches in parts of Laos can range from 40-108 kg (US$ 80-215 - the average value of a rain-fed rice crop is US$100).	• Production and consumption is greater in the south than in the north. • In the northern mountains several kg per capita per year is common. • In the south, e.g., Long An Province, farmers catch 531 kg per HH per year, and average fish consumption is 60 kg per capita per year. • In An Giang Province, the average wet rice fish catch is 835 kg per HH per year, and consumption is 78 kg per capita per year (50 kg fresh fish and 28 kg fisheries products).
3. CURRENT TRENDS IN AVAILABILITY	• In North East Thailand there has been a steady decline in natural fish catch over the last 6 years in all water resources. • Availability is strongly correlated with rainfall.	• Evidence suggests the resource in Cambodia has been under-estimated. • An issue for the poor is access, constrained by the sale of fishing lots (and in some cases the exclusion of local fishers), and the reduced quantity and size of fish migrating.	• The Laotian riverine fisheries have declined by 20% over recent years • Production in lakes and reservoirs has declined by 60% in the past 15 years. • Catches from small water bodies can make up 74% of annual fish catch.	• There are indications that the catches from the Red River delta and the Mekong River system have declined considerably over the last 10-15 years.

Sources: The above data is derived from recent reports and the Aquatic Resources Management Programme e-conference 2000 on 'Aquatic Resources Management for sustainable livelihoods of poor people'. (Haylor, G, 2000)

ANNEX 2 PRIORITY ANALYSES & ACTION COMMITMENTS ADDRESSED BY STREAM[1]

PRIORITY ANALYSES FOR DFID
1. Understand better the livelihood strategies of poor people and identify their options and opportunities for sustainable improvements
2. Invest in research on poverty and sustainable development to develop our knowledge of the causes of poverty and approaches to poverty reduction
3. Give high priority to monitoring trends in poverty, publicising these trends and generating international media interest and debate
PRIORITY ACTIONS FOR DFID

1. Pursue pro-poor growth policies
   I.   Work with developing country and international institutions to develop integrated approaches to poverty reduction
   II.   Engage decision makers and other influential groups more strongly in the debate about pro-poor policies
   III.   Support the incorporation of gender equality goals into national and local policy frameworks

2. Make markets work better for the poor
   I.   Tackle legal, institutional and social issues which prevent the poor gaining secure access to assets, labour markets and essential infrastructure and services, including strengthening involvement in land and land tenure reform, creating secure property rights for the poor
   II.   Secure greater livelihood security, access to productive assets, and economic opportunities for poor people, with particular attention to gender issues

3. Improve the overall effectiveness of public resource use at country level for poverty reduction
   I.   Strengthen public expenditure management and promote the use of Medium Term Expenditure Frameworks
   II.   Promote and support stronger analysis of the poverty incidence.

4. Promote empowerment and accountability
   I.   Support a stronger voice for poor people in the formulation of policy including at national level, through more widespread use of participatory approaches and through political organisation
   II.   Mainstream the empowerment of women in all development activities
   III.   Work to increase transparency and reduce corruption
   IV.   Look for new mechanisms for collaboration between development agencies, government and their civil and political societies in better defining government agendas and uphold the rights of poor people
   V.   Find new ways to support the provision of essential skills training.

5. Ensure that transfers and social protection reach the poorest
   I.   Ensure that social protection policies are structural and mainstreamed into development policy.
   II.   Learn lessons from examples of successful targeting of social protection.
   III.   Ensure that social protection policies do not undermine the functioning of markets, particularly local agricultural markets.

7. Increase the resources for development and channel them to maximise poverty reduction   I.   Reduce the administrative burden on developing country governments by working with international community to strengthen joint working including providing resources through common funding mechanisms

8. Reduce the impact of shocks, including conflict on the poorest countries
   I.   Work with others to improve the international mechanisms for settling disputes and preventing conflict
   II.   Increase the policy focus on mitigating risks facing poor people

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[1] Source: DFID TSP "Halving World Poverty"

ANNEX 3 EXAMPLES OF BEST-PRACTICE PROMOTED BY STREAM

IDENTIFIED BEST PRACTICE SYSTEMS[1]	DFID PRINCIPLES, CONCEPTS AND TARGETS [2]
1. PROMOTION OF DECENTRALISED PRIVATE SECTOR FISH SEED PRODUCTION (For example, facilitated transport and trading of brood fish and 'spawning inducing' chemicals, and developed a spawning network)	• Improve services and access to knowledge that people need to make best use of their assets • Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development • Opportunities to explore new forms of relationship with the private sector
2. SUPPORTING THE DEVELOPMENT OF DECENTRALISED RESEARCH SYSTEMS WITH FARMERS AND LOCAL EXTENSION AGENTS (A dynamic process where recommendations are transitory assessments of best practice that change and develop with the capacity of users and support organisations)	• Improve services and access to knowledge that people need to make best use of their assets. Proper stewardship of natural resource systems that meet the needs of present and future generations. • Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development
3. FACILITATING COMMUNITY FISHERIES MANAGEMENT IN SMALL WATER BODIES	• Supporting community participation in the management of common property resources particularly in allocation of access and collective regulation
4. FACILITATING EXTENSION THROUGH ENGAGEMENT WITH NOVEL EXTENSION AGENTS (For example, training and supporting fry traders as extension agents)	• Opportunities to explore new forms of relationship with the private sector • Improve services and access to knowledge that people need to make best use of their assets
5. PROMOTING THE DEVELOPMENT OF A NETWORK OF FARMERS NURSING FISH FRY TO FINGERLINGS (See Box A 7.1)	• Improve services and access to knowledge that people need to make best use of their assets • Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development
6. SUPPORTING FISH PRODUCTION & IPM IN IRRIGATED AND RAIN FED RICE (For example, promotion of various participatory learning methods including farmer field schools)	• Resource systems that meet the needs of present and future generations • Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development
7. PROMOTING FARMER-EXTENSION COLLABORATION IN UNDERSTANDING LIVELIHOODS (i.e., promoting the development of diverse recommendations for diverse-complex-risk prone systems)	• Improve services and access to knowledge that people need to make best use of their assets • Supporting the most substantial source of income from conservation and sustainable management of fish stocks • Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development
8. PROMOTING THE SHARING AND DEVELOPMENT OF ROBUST TECHNOLOGIES MORE WIDELY IN THE REGION	• Entrepreneurial activity at artisanal level in food producing sectors are targets for partnership development • Supporting the most substantial source of income from conservation and sustainable management of fish stocks

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[1] Source: Haylor, G (2000): Eight successful systems for promoting sustainable livelihoods through developing aquatic resource management systems that benefit the poor in S E Asia. Aquatic Resources Management Programme Briefing Paper 2. DFID SEA.
[2] Highlighted in the first DFID White Paper (November 1997) and confirmed by the second (December 2000)

JULY 2001

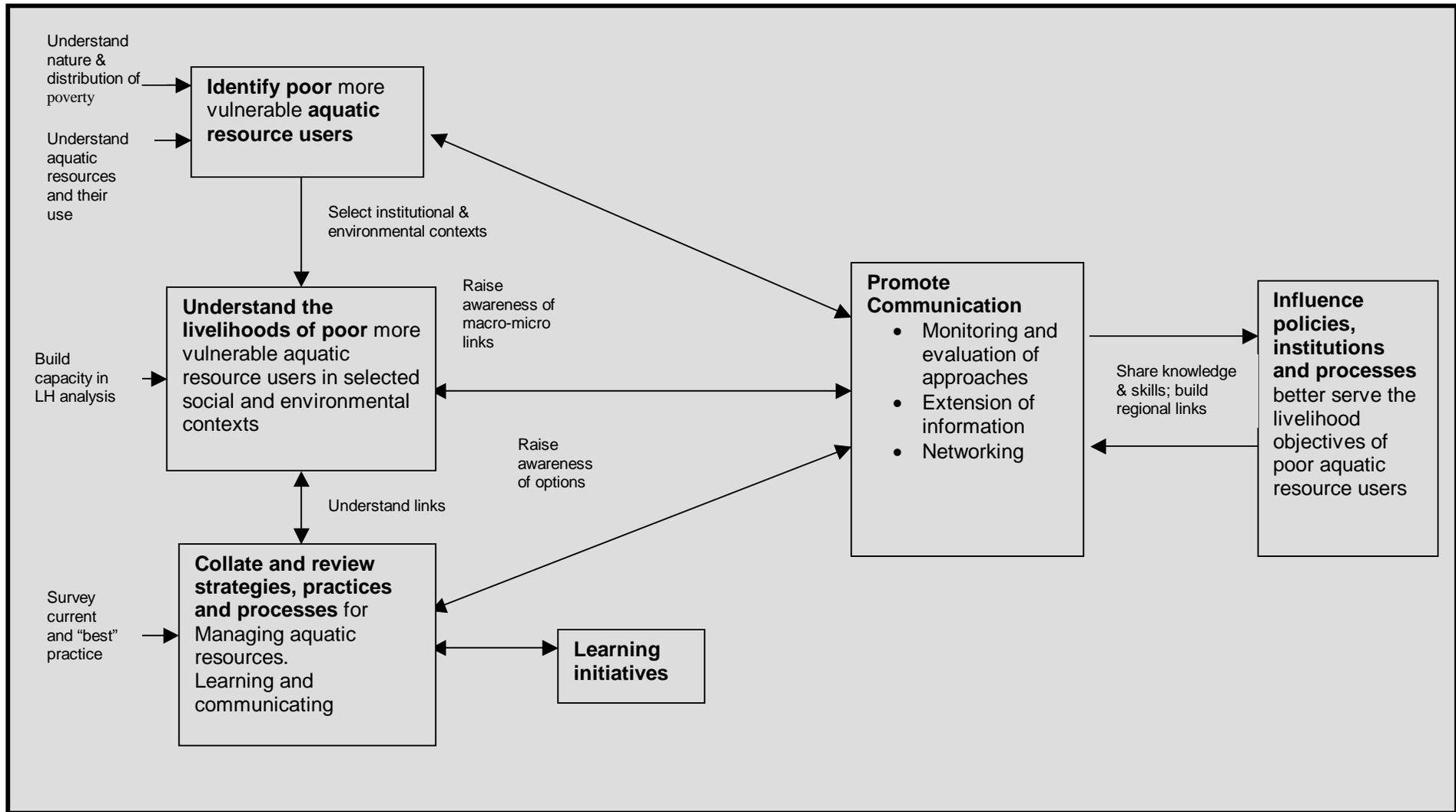# ANNEX 4 STREAM AND DFID CSP FOR CAMBODIA AND VIETNAM

STREAM	Cambodia CSP[1]
1. A regional approach	• Not a narrow bi-lateral programme
2. Multi-donor support	• Only develop interventions that complement a wider programme of multi-donor support
3. A flexible pooled-funding approach	• Focus on flexible programmes and reduce the burden of DFID procedures (e.g. pooled funding programmes)
4. Institutionalising livelihoods approaches with DoF and DOWA	• Institutionalise processes to learn from what DFID or others are doing
5. Joint design and development of initiative and a communications and learning platform	• Promote a new way of working for donors
6. Learn lessons about how policies and institution act as constraints on rural people.	• Encourage broad based rural development that empowers the disadvantaged
7. Capacity building in livelihood approaches and analyses to inform reformulation of the law and institutional change	• Enhance government capacity to plan and implement pro-poor policies
8. Supporting improved national and regional communication, linking poor people with policy makers	• Support improved policies and systems which enable the state to guarantee the equitable provision of basic services

STREAM	Vietnam CSP[2]
1. Uniting a small coalition of donor/NGO/international organisation/government service providers	• Play a catalytic role. Build effective partnerships with Vietnamese, civil society and multilateral partnerships
2. Development of poverty focused policy with coalition of government ministries, peoples committees, donors	• Effective interaction with government and other donors
3. Development of a national and regional communications and learning platform	• Ensuring lessons leant inform new approaches
4. Institutionalising livelihoods approaches with DARD and Vietnamese Women's Union	• Building local professional capacity

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[1] From Cambodia CSP Strategy, implementation and resources
[2] From Vietnam CSP Implementing the new development strategy.

ANNEX 5 FRAMEWORK OF SUPPORT

ANNEX 6 FRAMEWORK OF COALITION SUPPORT FOR STREAM START-UP

OUTPUTS	PARTNERS		
	DFID	FAO	VSO
1. Processes that identify poor aquatic resource users, understand their livelihoods, and highlight their capabilities and objectives, are strengthened	• Facilitate a review of existing information in Vietnam and Cambodia • Seek opportunities to raise awareness of livelihood approaches in Vietnam and Cambodia • Contribute to awareness raising of STREAM and the livelihoods approach in all NACA member countries • Build capacity to understand livelihoods, and participatory approaches and planning in Cambodia and Vietnam • Expand capacity building in other selected countries in the region in collaboration with FAO TCDC • Pursue opportunities in Vietnam and Cambodia to raise awareness of macro-micro links • Support team building and managing pilot analysis related to policy development	• Facilitate with DFID & VSO reviews in several other countries • Contribute to awareness raising of STREAM and the livelihoods approach in Asia. • Collaborate with DFID to facilitate replication of capacity building and analyses in several Asia countries through TCDC, national level training, and workshops	• Link partners to DFID's studies and FAO support, as appropriate • Build capacity to implement livelihood analysis, participatory approaches and planning at provincial and community level, through DFID and other donor support to volunteers in selected countries • Provide long term support at the provincial and community level to implement livelihood analyses through DFID support. As appropriate, link partners with FAO support
2. Appropriate strategies, practices and processes that demonstrate poor people can manage their aquatic resources are identified	• Facilitate on-going process to share information from on-going research and development projects/ programmes	• Provide access to databases, publications and links to FAO and partners	• Establish and facilitate a process to share information from provincial and community level through DFID support
3. Regional communication and learning between poor aquatic resource users, line agencies, civil society, researchers and the private sector is improved	• Facilitate a review of access to information and needs in Vietnam and Cambodia • Manage and contribute to a process of identifying scope & methods for M & E of strategies, practices and processes, extending information and networking for the region, with surveys in Cambodia and Vietnam • Support phased mobilisation of network(s) • Support development of prototype database • Develop process for research organisations to contribute and support information needs	• Facilitate a review of access to information and needs in several countries in the Asia-Pacific region • Support regional expansion in line with need • Support regional expansion in line with need • Support regional expansion in line with need • Highlight STREAM approach & outcomes of in international for a • Develop and promote regional guidelines, based on 'Code of conduct for Responsible Fisheries'	• Contribute to reviews, by surveying access to information and needs of provincial and community level partners • Input lessons learnt through SPARK. • Contribute to process of identifying scope & methods for M & E of strategies, practices and processes, extending information and networking for the region • Provide field level support to new community learning initiatives • Support networking activities • Support development of database through capacity building of resource persons
4. Policy and institutional changes designed to better support the livelihoods objectives of aquatic resource users, are supported	• Support the formulation and implementation of on-going policy changes in Vietnam and Cambodia	• Support regional expansion in line with need	

ANNEX 7 COMMUNICATION OPPORTUNITIES: IMPROVING CO-ORDINATION BETWEEN SECTORS AND ENSURING PARTICIPATION OF POOR RESOURCE USERS

TYPE	EXAMPLES OF CURRENT STATUS	OPPORTUNITIES FOR STREAM
1. DISSEMINATION	• A Clearly identified need for more effective dissemination, well targeted and to a wider audience • Main media for dissemination are in Catch & Culture (MRC), NAGA (ICLARM), AARM (AIT-AOP), Aquaculture Asia (NACA) • Several web-sites already operational	• Dissemination of previous research experience, e.g., DFID research • Dissemination of current activities across different sectors, particularly between poverty alleviation and aquatic resource management sectors • Dissemination of experience from outside the region, particularly from areas of DFID experience • Dissemination of DFID Sustainable Livelihoods material
2. INFORMATION EXCHANGE	• Clearly identified need for more effective information exchange • Personal contacts are often the main basis for contact, and as such tend to be unreliable and incomplete • In order to ensure more clearly identified impacts on policy outcomes, there is a need for well-targeted and well-presented information, and for a wider network for exchange	• Supporting information exchange across a wider range of ARM, poverty alleviation, livelihoods, co-management, and governance initiatives • Establishing means of exchange between similar initiatives • Facilitating information exchange from and between policy-makers and resource users • STREAM must add value rather than merely exchange existing information • Web sites and e-mail circulars • Field visits, workshops, exchange visits based on demonstration
3. CO-ORDINATION	• Co-ordination within sectors is often weak with several projects unaware of the existence of similar projects, even when with the same institutional partners. Co-ordination across different sectors is particularly weak • Examples of coordination include TCU, donor meetings, MRC National Mekong Committees, and the NGO Forum	• Improving co-ordination between aquaculture activities within DOF • Strengthening small-scale aquaculture and aquatic resource management planning within decentralisation initiatives (such as SEILA) • Improve co-ordination between projects and between donors
4. NETWORKING	• Several innovative networks exist, e.g., AOP Nursing networks • When spreading the reach of existing networks there is a risk of overwhelming existing capacity and resources	• Supporting networks of projects and institutions • Networking of project managers with similar and overlapping interests • Networks of small-scale producers, e.g., seed & fingerling producers • Networking of community based organisations
5. NETWORKING FOR CIVIL SOCIETY	• NGO Forum • SCALE • Several NGO Networks	• Support to community based organisations, farmers and fishers organizations • Support the role of resource users in the monitoring and assessment of the resource base, and provide an institutional mechanism for co-ordinating with local and national policy makers • Support to watershed management institutions, including downstream and cross border networks • Support linkages between policy-makers and resource users
6. AWARENESS	• Oxfam USA's Mekong Initiative • TERRA	• Support for public media campaigns, including through radio, papers & TV • Lobbying with international donors, particularly concerning large-scale water management initiatives
7. LESSON LEARNING		• Support to STREAM activities, particularly case studies and on-farm trials as the basis for learning initiatives • Field/exchange visits and focused workshops with clearly identified outputs

ANNEX 8 COMMUNICATION OPPORTUNITIES: ADDRESSING POVERTY ALLEVIATION

KEY ISSUES	EXAMPLES OF KEY CURRENT STATUS	OPPORTUNITIES FOR STREAM
1. ACCESS TO AND CONTROL OF RESOURCES	• Support to establish community based resource management • Support to networks of local resource users • Support to local resource users to monitor and assess the fishery, and wider environment • Decentralisation of development planning	• Lesson learning from around the region • Support to planning workshops/ trials to ensure effective participation of resource users and government in developing co-management policy • Institutionalisation of local monitoring activities • Support resource user communication and networking strategies, particularly for those around the same catchment area or cross-border • Support to implement co-management regimes as basis for lesson learning
2. CONSERVATION & PROTECTION	• International treaties • Research and awareness building • Establishing protected areas • Developing wise-use practices based on demonstration sites	• Lobbying for addressing livelihoods and aquatic resource issues • Support to protected area & wise-use initiatives • Support for resource users communication & networking
3. THREATS FROM LARGE-SCALE DEVELOPMENT SCHEMES, (WATER MANAGEMENT)	• Studies of impacts of such schemes on environment and local livelihoods • Public awareness campaigns • Lobbying key donors	• Support to collection and dissemination of relevant information, strengthening participation and voice of resource users • Support processes of public consultation and communication • Support to lobbying processes that include resource users, particularly targeted at donors
4. GOVERNMENT INSTITUTIONS AND PROCESSES	• Capacity building & training, including poverty focused extension, and participatory and livelihoods approaches • Decentralisation initiatives • Establishment of socio-economics units • Establishment of centralised research institutes	• Lesson learning initiatives based on wider DFID/NACA experience • Support regional lesson learning • Emphasis on Sustainable Livelihoods approaches • Small-scale aquaculture extension • Co-management
5. LEGISLATIVE FRAMEWORK	• Reviews of fishing legislation (e.g., lot system in Cambodia) • Reviews of land laws • Oxfam/legal aid support in land disputes • Legislation for wetland management and community forestry • International agreements • Devising methods of implementation	• Support the process of negotiation and debate of legislation through support to civil society and governance initiatives • Support to demonstrate co-management and wise-use regimes • Facilitate co-ordination across involved sectors
6. CROSS SECTORAL CO-ORDINATION	• Establishment of inter-ministerial working groups (e.g. for management of Tonle Sap Biosphere) and support to National Mekong Committees • developing largely informal networks across sectors	• Donor co-ordination concerning ARM and poverty alleviation • Promoting ARM in decentralisation • Support existing communications & networking strategies between resource users, local government, NGOs and academics
7. TARGETED EXTENSION OF APPROPRIATE TECHNOLOGIES	• Capacity building, particularly extension & identifying poor people • Breaking up the production cycle to provide entry points for poor people • Establishing networks of poor resource users	• Support networking & exchanges based on experience of small-scale aquaculture initiatives – AOP (Lao & Cambodia), FAO Lao, SCALE, READ • Co-ordination & institutionalising small-scale aquaculture within the DOF's
8. INCREASED AWARENESS OF ARM & S/SCALE AQUACULTURE	• Partnerships of resource users, government, NGOs, & academics • Lobbying activities, publicity campaigns using public media	• Regional platform based on variety of media & communications strategies • Workshops, field visits, exchanges visits • Public media • Support to local resource user communications and networking strategies

ANNEX 9 INSTITUTIONAL APPRAISAL

A 9.1   This annex summarises the institutional environment. It describes how STREAM fits within this environment and where on-going change processes that support the objectives of STREAM are occurring. The appraisal focuses on the situation in STREAM's pilot countries, Vietnam and Cambodia, and considers the role of regional organisations.

THE INSTITUTIONAL ENVIRONMENT

A 9.2   Giving the poor greater access to aquatic resources and supporting the sustainable management of wild and cultured resources requires major reform of aquatic resources governance and service provision. The constraints are numerous, complex and inter-related, but include:

- Weak technical capacity of fisheries departments, particularly in poverty focused initiatives, extension, and community development

- Lack of responsive government institutions, further impeded by limited budgets, low salaries, a lack of job descriptions, and ineffective lines of responsibility.

- Poor implementation of fisheries legislation, often compounded by a weak legislative framework.

A 9.3   These constraints relate to policy, legislation, administration, rules of the game, and the relative power of different actors, many of which cannot be addressed by an initiative the size of STREAM. Despite these formidable challenges, several on-going changes in the region provide opportunities for STREAM to facilitate reform that will spread the benefits of the region's aquatic resources more widely and provide greater livelihoods opportunities for the poor.

A 9.4   Both Vietnam and Cambodia have been pro-active in policy development. However, there remains a lack of understanding amongst key government stakeholders. This combines with inefficient (and sometimes resistant) government agencies to prevent institutions from responding effectively to local needs and priorities. In addition, a lack of awareness at the grass roots as to the roles, responsibilities, and tools associated with CBNRM prevents the development and replication of approaches by communities. These are all areas where STREAM can add value to the on-going change process, by providing support mechanisms that:

- Change attitudes through increased awareness of current issues and approaches

- Build consensus/shared understanding

- Demonstrate to all groups that it is feasible to have aquatic resource management by local groups in the interests of a broader group, including the poor

- Empower a wide range of stakeholders through strengthened communication channels.

VIETNAM

Transition towards a market-oriented economy

A 9.5 In the centralised structure of Vietnam, and prior to the *Doi Moi* reforms, the Department of Fisheries had many responsibilities. At the central and provincial levels, it functioned as administrator and owner and manager of the means of production and channels of distribution. At the district and community levels, the department functioned as supervisor for the companies and activities that were run by the respective administrative committees.

A 9.6 The recent transition of the Vietnamese economy to a market-oriented system has dictated a reorientation of the role of the (now) Ministry of Fisheries (MOFI) in relation to the fishing industry. Public sector organisations including MOFI are now expected to carry out supportive, legislative and administrative roles. The strategic focus is on strengthening and supporting the business environment.

A 9.7 Over the last 20 years the Ministry of Fisheries has been reduced from 6,000 staff in 22 departments to 950 staff (of which 142 are professionals) in nine departments. All staff are coming to terms with their changed roles, from one of responsibility for centrally planned production to one of a legislative, administrative and supportive role.

A 9.8 At the provincial level, the Fisheries Departments have many planning and regulatory responsibilities. Provincial People Committees have opted to establish a fisheries department in 22 of the 28 coastal provinces (fisheries is deemed less important in the remaining 6 provinces and forms part of a Department for Agriculture and Forestry). Provincial staffing has been dramatically reduced from around 130 per province to a maximum of 18-24 Fisheries Services staff in key provinces and 13-18 staff in provinces with medium fisheries production. At the district level, there are no separate fisheries departments and fisheries staff are in amalgamated departments.

A 9.9 A provincial department will typically have planning and investment sections, an inspection unit, a fisheries resource protection department, and an extension service. Operational budgets are extremely limited. For example, Tien Giang Province in the south, where fish production and consumption is highest, there is on average one extensionist for every 24,500 households. Extension workers are poorly trained, biased towards richer farmers, disseminate blanket messages, and take a top-down production-oriented technology transfer approach.

Hunger Eradication and Poverty Reduction (HEPR) strategy

A 9.10 The resolutions of the Party Congresses VII, VIII, IX and the Decree of the Party Central Committee defined that, in parallel with economic development and growth, Vietnam must concentrate on hunger eradication and poverty reduction. The resulting Hunger Eradication and Poverty Reduction (HEPR) strategy under the Ministry of Labour, Invalids and Social Affairs (MOLISA) has been recognised in Vietnam and internationally as a successful framework for poverty reduction.

A 9.11 Over the last 10 years many policies, institutional changes, programmes, and projects have been put into place to promote agriculture and rural development, build up irrigation systems, strengthen credit policy, and support the marketing of products, all of which was designed to increase living standards, especially of the poor.

A 9.12 The Ministry of Fisheries (MOFI) played a limited role in the first decade of the HEPR strategy. Its focus was more on industrial and commercial scale development, especially of aquaculture. Marine fisheries and commercial (shrimp) aquaculture have dominated public sector (Fisheries) activity in Vietnam, with high priority given to revenue generation[1]. Significant contributions by the sector to GDP have lead to powerful government fisheries institutions.

A 9.13 Support to the poor however has been much more limited. The intention for 2001-2010 is to expand the poverty alleviation content of HEPR, to eradicate hunger and enact policies that encourage communication of appropriate technologies, strengthen and diversify capital assets, and reduce the vulnerability of the poor. Inter-ministerial co-operation is coordinated by MOLISA with each line ministry responsible for policy formulation, the mechanism by which this is implemented, and the provision of implementation guidance at the local level.

Sustainable Aquaculture for Poverty Alleviation (SAPA) strategy

A 9.14 There is general agreement amongst government and many donors that aquaculture and improved aquatic resources management can make a significant and direct impact on poverty reduction and hunger eradication in Vietnam. The key policy issue is to better support poor and vulnerable groups who depend on or could make use of aquatic resources.

A 9.15 To address this issue MOFI has prepared the 'Sustainable Aquaculture[2] for Poverty Alleviation' strategy – SAPA. The strategy was born out of a broad ranging strategy dialogue[3], and its strength lies in its emphasis on a process approach that will build further on the understanding derived from sustainable livelihood analyses and local pilots. The SAPA strategy forms part of the Government umbrella HEPR strategy and recognises that there is a need to:

- Raise awareness and improve communication on the role of aquaculture and aquatic resources in sustaining poor people's livelihoods in Vietnam

- Improve understanding of participatory approaches

- Improve institutional capacity with a pro-poor focus

- Address the gap between farmers/fishers needs and the services offered by extension institutions

- Appreciate the wide range of stakeholders involved in aquatic resource management

- Address the issues of access to markets and financial services by the rural poor.

A 9.16 The key challenge now is to operationalise SAPA and to implement it successfully. This will involve a great deal of orientation and capacity building in the livelihoods approach at a number of levels.

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[1] The export value from the fisheries sector is predicted by the Ministry of Fisheries to account for US$1 billion.
[2] The term 'aquaculture' refers to the culture of aquatic organisms and the management of aquatic resources.
[3] This included: 100 representatives from MOFI, MPI, MOLISA, and the Ministry of Agriculture and Rural Development (MARD), as well as provincial government agencies and people's organisations; international organisations and donors, including NORAD, DFID, FAO and NACA who played a key role in planning and facilitating of meetings, as well as AIT, DANIDA, ACIAR and UNDP, WB, ADB and many representatives from the Embassies.

A 9.17   Central responsibility for the coordination of rural development policy and strategy lies within the Ministry of Agricultural and Rural Development (MARD), which was created in 1995 after the amalgamation of the Ministries of Water Resources, Agriculture and Food Industries, and Forestry. Central level ministries set policy and issue guidelines for provincial authorities in their respective areas of competence. At lower levels, a number of institutions are involved in the implementation of policies and programmes relating to rural development. At the provincial level, people's councils have decision-making power with respect to policies, budgets, and revenues, and are responsible for mobilising financial and human resources in accordance with government norms.

Opportunities for STREAM

A 9.18   The MOFI sees a significant opportunity to link national aquatic resources development through the SAPA strategy with regional networking through STREAM. The SAPA strategy document, which became government policy last month, suggests the implementation unit within the ministry be developed as the national STREAM agency in Vietnam (see Section 4 above, Implementation). This provides a significant opportunity for Vietnam to learn from the experiences of implementing other livelihoods-based and CBNRM approaches in the region, and share their experiences of managing significant policy change in fisheries with others in the region.

CAMBODIA

Roles and responsibilities

A 9.19   The Department of Fisheries was created in 1979. Its primary objective is the management and administration of the fisheries domain, i.e., all permanent and temporary water bodies, including flooded forests and all living animals and vegetation able to reproduce, which are considered property of the state. This includes the management and administration of 15 sanctuaries. In practice, fisheries management focuses on the regulation of fishing throughout the domain by classification of permitted fishing gear (family scale, middle scale, and administration of fishing lots for commercial scale fishing). Aquaculture and fisheries extension is largely uncoordinated and depends heavily on inputs from donor and NGO activities.

A 9.20   The Ministry of Rural Development (MRD) aims to coordinate the efforts of the various line ministries and assistance programmes. Objectives that compliment the fisheries sector are poverty alleviation, access to services, increased productivity and sustainable development, and facilitating economic self-sufficiency and an active social awareness. Its key mechanism is support to a process of decentralisation.

Decentralisation

A 9.21   MRD has a mandate to mobilise local potential and encourage participation through the creation of decentralised institutions that support village development actions carried out by Village Development Committees (VDCs). The objective of the VDC is to consult and analyse situations relating to the village with the community, establish priorities, and formulate plans or proposals for the development of the village on an annual basis. It must also locate the resources needed to implement the plans and programmes, as well as assistance to support the community, and encourage the village people to participate in the activities.

A 9.22 There is some convergence of opinion among donors, international NGOs and government that the Village Development Committees (VDCs) are an appropriate first step in facilitating greater bottom-up planning and prioritisation. An approach by UNDP/CARERE, involving PRA training for the VDC and support to commune planning, is emerging as a dominant decentralisation model. However, there concerns remain over issues of inclusion of disadvantaged groups and the timeframe over which decentralisation objectives can be achieved. Currently in Cambodia the institutional structure is extremely weak outside of the capital.

A 9.23 In Phnom Penh, bureaus within the DoF have sometimes controversial and conflicting remits. For example, the Fisheries Domain Bureau deals with management, conservation and development of aquatic resources, whilst the Exploitation Bureau deals with the splitting of the countries aquatic resource into "fishing lots" and their rental via a bidding process. The 'management' (appropriation) of the country's aquatic resource under the Exploitation Bureau policy is a key constraint to sustainable livelihoods of *poor* aquatic resource users.

The current policy review

A 9.24 Following recent unrest in relation to fisheries administration, Nao Touk replaced the Director of the DoF. He has ushered in a new era of rapid changes in fisheries policy, especially changes to fisheries law and the administration of commercial fishing. Some key events and current issues are:

- The fisheries law has been revised. A first complete draft is now out for consultation, with Provisional Fisheries and Agriculture Directors. Consultations in the lake region, the Mekong region and the coast will follow over the next 4 months, with a workshop planned for August-September as the culmination of the consultation process.

- Aquatic resources management by the poor are referred to in law as *subsistence fishing.* Article 15 of the draft now refers to subsistence fishing and currently precludes poor people from trading in fish.

- The sub-decree 24, on the recommendation of the PM, has repealed fishing fees (which were formally applied in relation to fishing effort).

- Following the PM recommendation, 12 sub-decrees have now been finalised releasing fishing lots. All lots valued at less than 30 million riel have now been abolished as well as some lots up to a value of 300 million riel where a lot of conflict over fishing had existed. Following consultations involving the Ministry, provincial fisheries and lot operators, a draft sub-decree detailing the new bidding process for fishing lots is now finalised.

- Articles 76, 77 and 78 of the revised fisheries law regarding co-management and a new sub-decree on community fisheries is with the Ministry Agriculture, Fisheries and Forestry, prior to its passage to the PM for signing. A sub-decree dealing with the establishment of a new Bureau of Community Fisheries Development is currently with the MAFF.

Opportunities for STREAM

A 9.25 The Secretary of State for MAFF and the DG of Fisheries have emphasised that Article 15 requires reformulation to better reflect the livelihood strategies of poor fishers and to guide sustainable practices, and have reiterated that capacity building

in livelihood analysis and piloting analyses Is a priority. They have also emphasised a desire and requested support to learn lessons from initiatives in other areas, emphasising the experience of DFID in Bangladesh and opportunities for learning and sharing through STREAM.

KEY REGIONAL INSTITUTIONS

A 9.26 This section presents a brief synopsis of the potential for STREAM to facilitate regional information exchange in partnership with selected organisations that have a clear regional presence in the aquatic/natural resources management sector.

Network of Aquaculture Centres for Asia-Pacific (NACA)

A 9.27 NACA is an intergovernmental agency of fifteen Asia-Pacific member countries (in additional a four participate in activities of the network and have made commitments to become full members) whose mission is to assist member governments to improve opportunities for sustainable aquaculture and aquatic resources management development, and to contribute to social and economic development in the Asia-Pacific region. NACA is funded by contributions from member governments and as such represents a well-used and effective vehicle for regional networking. Technical Co-operation Programme funding (TCP) from the FAO in Rome is frequently channelled through NACA.

A 9.28 Recognition during the 1990's of the fundamental role of aquatic resources in the livelihoods of poor people led NACA to strengthen its focus on poverty alleviation and improving the livelihoods of poor aquatic resource users. In response, the 9th NACA Governing Council Meeting (held in December 1997) agreed to develop a regional programme on aquatic resources management that addressed the issues of poverty alleviation and food security.

A 9.29 The concept was influenced by consultations with national, regional and international organisations, and by the recommendations of the Conference on Aquaculture in the Third Millennium. Following close liaison with the DFID Aquatic Resources Management Programme and a major participatory policy review within NACA, rural development became the core business of the intergovernmental network.

A 9.30 Instead of a 'NACA programme', the NACA secretariat, with assistance from DFID, FAO and VSO, proposed an inclusive regional initiative that reaches out to link a wide range of stakeholders engaged in aquatic resources management not just aquaculture and adopts a livelihoods approach. The 12th NACA Governing Council Meeting (held in December 2000) endorsed this as a major new initiative entitled STREAM - "Support to regional aquatic resources management".

A 9.31 NACA has a long-term presence and strong ownership by national line agencies that wish to pursue a rural development remit, broader networking, and the implementation of STREAM. The endorsement of STREAM from the governments of the region provides a very strong mandate for its implementation

Mekong River Commission (MRC)

A 9.32 The MRC was created by the 1995 Agreement on Cooperation for the Sustainable Development of the Mekong River Basin. This Agreement has the status of international law and gives the MRC a mandate to address significant natural resource management issues through political and other channels. In 1999, a new CEO took charge at the MRC and has demonstrated a capacity to inspire donor confidence, mobilise political support among the member countries, and manage effectively.

A 9.33 The MRC is moving towards its goal of becoming an effective river basin organisation and fully implementing the 1995 Agreement.

A 9.34 One of the MRC's strengths is information generation, especially on the resource itself. This implies a key contributory role to STREAM's communication processes and regional networking. STREAM's focus on building capacity to understand livelihoods complements catchments-based understanding of the resource (which is to be piloted by MRC), both in the context of policy and planning.

A 9.35 On going work between MRC and STREAM partners NACA, FAO and DFID on a fisheries sector review, and preliminary discussions with Chris Barlow, who is taking responsibility for MRC fisheries programme communications, and the new MRC Fisheries Programme Manager Jeanineke Dahl Kristensen have been positive. There is potential for co-operation between STREAM and MRC, especially uniting the MRC *catchments* and STREAM *livelihoods* approaches. Shared priorities in regional communication include the desire to link policy makers, information providers, poor resource users, and those engaged in advocacy for the poor.

Food and Agriculture Organisation (FAO)

A 9.36 The FAO's Fisheries Department for the Asia-Pacific (RAP) is based in Bangkok and has a regional aquaculture programme. This programme:

- Monitors and reports on the status, trends and key issues in aquaculture development in the Region

- Provides advice to FAO members on aquaculture development

- Collects information on micro-economics of culture systems

- Collects, analyses and disseminates new and improved aquaculture technologies to FAO members

- Carries out sectoral reviews

- Provides technical assistance to FAO members on request and provides technical backstopping to field projects

- Organises FAO-sponsored technical meetings, workshops and training courses

- Collects and disseminates information on aquaculture and inland fisheries in the region.

A 9.37 FAO Regional Office for Asia-Pacific (FAO/RAP), through its aquaculture programme co-ordinated by the Asia Regional Aquaculture Officer, in consultation with the Fishery Resources Division of FAO/HQ, will provide assistance to the STREAM process.

A 9.38 FAO has tended to support NACA for networking and communication, and is a founding partner of the STREAM initiative. FAO RAP hosts the APFIC Committee ad

hoc Working Group on Aquaculture and Inland Fisheries related issues. This has taken the form of expert consultations in Bangkok with inter-sessional activity dependent on funding.

AIT Aqua Outreach

A 9.39   The AIT Aqua Outreach programme dates back to 1988 and aims to develop aquaculture and build institutional capacity. Originally beginning in Northeast Thailand with funding from DFID, it was later co-funded by SIDA and DANIDA before DFID ceased funding in 1999. DANIDA expect its funding will not go to another phase. SIDA support for the programme began in 1993 and after 18 months of uncertainty a 3rd phase up to 2002 has just been agreed.

A 9.40   Aqua Outreach has been a long-term player, which has developed and introduced valuable aquatic resource management techniques and, in Lao PDR, highly innovative institutional processes. Over the last decade (using its alumni), Outreach has built considerable links and experience, though in a period when a significant shift in development thinking is taking place globally and some sub-programmes have been more innovative than others. Aqua Outreach's strengths (in technical and institutional process generation) suggest a role as a contributor to STREAM's technical, institutional and communication processes. Aqua-Outreach Laos is also a key player in supporting national networking in Laos.

A 9.41   By definition, the Outreach concept is to link the academic community and its outputs more closely with people and institutions within the region. It was born out of a desire to transfer technology that was developed on campus. A recent restructuring of the Aquaculture and Aquatic Resources Management Programme at AIT placed Aqua Outreach managers under the co-ordination of the campus AARM programme, which aimed to co-ordinate academic and outreach activities. The institution is developing a network of academic and government partners, which could complement other government and grass roots networks and could play a role in the STREAM initiative.

Department for International Development

A 9.42   The Department for International Development (DFID) is responsible for promoting development and reducing poverty. Many of the aquaculture technologies currently in place (Table A.10.1 in Annex 10), and a significant amount of the research on the major fisheries, either has been or is currently supported by DANIDA, SIDA, NORAD and DFID. There is considerable potential to improve the utilisation of this resource and for DFID to increase the impact of its support to the sub-sector, by facilitating better sharing of these experiences and lessons learned with other stakeholders in the Asia-Pacific region through STREAM.

A 9.43   For example, DFID's experiences in Bangladesh (particularly concerning definitions of 'genuine fishers', 'small-scale gear' and 'community', and the distributional impacts of co-management regimes on the poor, especially those on the edges of 'communities' [such as migrant or seasonal fishers], the poorest households, and women), is a valuable resource that could be used to support on-going changes in Cambodia and Vietnam. A recent e-mail conference[1] clearly highlighted this potential as well as the

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[1]   Aquatic Resources Management for Sustainable Livelihoods of Poor People Proceedings of the DFID-SE Asia Aquatic Resources Management Programme E-Mail Conference, June 2000 Edited by Graham Haylor

need for allocation of time and resources to focus on greater sharing of DFIDs valuable knowledge resource.

Voluntary Service Overseas

A 9.44 Voluntary Service Overseas (VSO) is an international development agency, which builds capacity (primarily at the provincial and community level) through the placement of professionally qualified and experienced volunteers. The organisation has a strong regional presence, with Country Programmes in twelve of NACA member countries.

A 9.45 VSO has a significant presence in the natural resources sector in the region, and works with a wide range of provincial and community level partners. It also supports the natural resources work of other international partners in the region, including DFID and CARE in Bangladesh, DFID (DELIVERI and Multi-Stakeholder Programme) in Indonesia, AIT Aqua Outreach in Cambodia, and RDC in Laos.

A 9.46 VSO has experience at promoting regional communication at the provincial and community level. It has recently adopted a more regional approach to community-based natural resource management through its 'Sharing and Promotion of Awareness and Regional Knowledge' (SPARK) programme, a five-year initiative that is being implemented in Indonesia, The Philippines, and Thailand.

A 9.47 VSO has recently signed a three-year 'Programme Partnership Agreement' with DFID, which encourages closer collaboration between DFID and VSO, particularly in terms of joint programming, shared learning and influencing policy. VSO support to STREAM is consistent with this Agreement. Support to STREAM is also consistent with the key directions that VSO is taking, namely:

- **Prioritising the needs of the more disadvantaged**: Working directly with and for more disadvantaged people, by supporting pro-poor policy formulation, building capacity of local organisations, and supporting grassroots implementation.

- **Facilitating more effective sharing of skills and capacity building**: Providing more support to volunteer placements through additional equipment and materials, improved access to specialist advice, increased learning opportunities for local colleagues, and increased sharing of knowledge between partners nationally and regionally

- **Promoting new forms of partnership**: Increasing collaboration with other international agencies to achieve common goals, and to ensure that the experiences of VSO's partners support pro-poor policy formulation debate and other macro-level changes.

A 9.48 VSO is well placed to contribute to STREAM, by providing volunteers to support the initiative's capacity building efforts, and facilitating national and regional sharing between partners at the provincial and community level.

Opportunities for STREAM

A 9.49 Although regional networking is not a current strength or paramount amongst regional players, it is none-the-less an objective of all. Each has a key role to play in information generation and other dimensions of regional interaction.

A 9.50 There are relatively few individual 'champions for change' in line agencies, which are big, bureaucratic and change averse. As an intergovernmental agency, NACA is likely to be effective at building confidence to implement change and maintaining peer pressure for change towards a pro-poor agenda.

A 9.51 Although at an early stage, through a process of dialogue and consensus building, there is now growing momentum for DFID, FAO and VSO to work together to support STREAM to become an effective instrument for support to poor aquatic resource users. Current joint working with MRC, by NACA, FAO, DFID and AIT on documenting current status of and recommendations for aquaculture development over the next decade also augers well for donor collaboration and effective joined up working under the STREAM initiative.

ANNEX 10   TECHNICAL AND ENVIRONMENTAL APPRAISAL

A 10.1   This Annex summarises a number of sustainable aquatic resource management examples from the South and South East Asia region, which are of special relevance to the STREAM initiative.

A 10.2   The Mekong River Basin remains one of the cleanest and healthiest river basins in the world, and is characterised by its wealth of biological and cultural diversity. However, there are signs of stress and significant degradation has occurred (and continues to occur) in many parts of the Basin. In contrast, other large river systems in the region, including the Red River, the Yellow River, the Chang Jiang, the Ganges, the Brahmaputra, are home to high concentrations of population and suffer large scale diminution of water quality. Others, like the five rivers of the Punjab and the Indus are highly managed, with 75% of the Indus flow channelled into irrigation canals with consequent changes to fauna (and fishing pressure). As the initiative expands from the Mekong sub-region a more extensive environmental appraisal will be required.

A 10.3   The population of the Lower Mekong River Basin is projected to reach 80 million by 2005. An estimated 85% of these people can be described as 'rural poor', who depend heavily on the aquatic resources of the Basin for their livelihoods. Capture fisheries and certain less intensive forms of aquaculture can and do play important roles in securing and enhancing the livelihoods of these people. However, the policies and processes of mediating institutions required to (i) identify the aquatic resource management issues impacting on the livelihoods of the poor, (ii) monitor and evaluate approaches, (iii) extend information, and, (iv) network, have commonly failed to develop. These represent key entry-points for change.

A 10.4   There are many successful examples from around the region of policies and processes that support sustainable aquatic resources management by poor people. A number of these are of special relevance to STREAM initiative and have been collated by the DFID Aquatic Resources Management Programme (Table A.10.1). This information is derived from recent reports and the Aquatic Resources Management Programme e-conference 2000 on 'Aquatic Resources Management for sustainable livelihoods of poor people'.

A 10.5   Livelihood diversification is a survival strategy of many rural households in developing countries. As a diversification option, aquaculture is sometimes incorrectly perceived as a high-risk investment, outside of the scope of the poor. Yet aquatic resources management is not only a useful compliment to land-based livelihoods but can represent a simple, low-risk activity providing a quick return, to fund other activities and build confidence to diversify.

A 10.6   System 5 in Table A.10.1 is an example of aquaculture as an entry-point for development and is expanded in Box A 10.1. It describes how the system provides opportunities to people interested in fish production (i.e., making available fish seed), but also builds on strengths and supports objectives for more diverse livelihoods (e.g., supporting management capacity amongst potential practitioners, and building institutional capacity to support development). This is a powerful example of where aquaculture represents a useful entry-point for sustainable rural development.

Table A.10.1 EIGHT SUCCESSFUL AQUATIC RESOURCE MANAGEMENT SYSTEMS THAT PROMOTE SUSTAINABLE LIVELIHOODS

SYSTEM	WHERE AND BY WHO	PROVEN VALUABLE SYSTEM FOR	DEVELOPMENT ISSUES ADDRESSED
1. **PROMOTION OF DECENTRALISED PRIVATE SECTOR FISH SEED PRODUCTION** (For example, facilitated transport and trading of brood fish and 'spawning inducing' chemicals, and developed a spawning network)	• Lao PDR • Regional Development Committee Southern Laos/Aqua Outreach Lao (DFID)	• Promoting decentralised private sector seed production, and networking amongst sectors of small-scale producers. • Has similar functional requirements to existing livestock vaccination systems. • Supports operational budget at local institutional level in line with work done. • Builds local management capacity.	• Fish seed availability is a common constraint for people interested in small-scale aquaculture. • Large-scale public sector hatcheries have been unproductive and compete with the private sector. • Communication is a key requirement of an emerging industry. • Limited operational budget of line agencies at local level. • Limited management capacity of local level line agencies.
2. **SUPPORTING THE DEVELOPMENT OF DECENTRALISED RESEARCH SYSTEMS WITH FARMERS AND LOCAL EXTENSION AGENTS** (A dynamic process where recommendations are transitory assessments of best practice that change and develop with the capacity of users and support organisations)	• Lao PDR • Regional Development Committee Southern Laos/Aqua Outreach Lao UoS (DFID RNRRP)	• Instigating an iterative process, which leads to the refinement of the existing research and extension system at a rate consistent with local capacity, including and defining roles for key stakeholders. • Engaging with novel extension agents (e.g. Women's Union). • Valuing local knowledge whilst acknowledging roles for outsiders. • The development of communication channels. • Evaluation by aquatic resource users criteria.	• Research agencies don't exist or centralised and standardised technical recommendations are commonplace. • Limited institutional capacity of responsible line agencies. • No involvement of farm families in defining recommendations. • No formal procedure for recording, monitoring or upgrading recommendations. • Recommendations are not based on flexible livelihood strategies.
3. **FACILITATING COMMUNITY FISHERIES MANAGEMENT IN SMALL WATER BODIES**	• Lao PDR • Regional Development Committee Southern Laos/Aqua Outreach Lao MRAG (DFID RNRRP)	• Increasing standing stock and returns to fishing effort. • Developing locally adapted rules, ownership rights, low-cost monitoring & enforcement, and information about benefits to promote & sustain community enhancement efforts.	• Small water bodies are threatened by over-exploitation, neglect, under-investment and expropriation. • Enhancement programmes that restrict access to communal water bodies disproportionately affect the poor and landless. • Development of enhancement efforts commonly fails to include affected communities. • There is limited government capacity to manage, monitor and enforce enhancement.
4. **FACILITATING EXTENSION THROUGH ENGAGEMENT WITH NOVEL EXTENSION AGENTS** (For example, training and supporting fry traders as extension agents)	• Bangladesh • NFEP (DFID)	• Cheap and effective dissemination of basic fish culture techniques over a wide geographical area in a short time. • Increasing fish production amongst contact farmers. • Boosting the status and sales of fry traders.	• Public sector implementation of extension is characterised by over ambitious coverage objectives, associated with limited funds and limited capacity. • There is often limited motivation and/or perverse incentive structures, which limit travel and contact with aquatic resource users.
5. **PROMOTING THE**	• Lao PDR	• Building basic husbandry and basic management skills	• Robust, low-investment intervention required for extremely poor and/or landless

OF FARMERS NURSING FISH FRY TO FINGERLINGS **(See Box A 9.1)**	Development Committee Southern Laos/Aqua Outreach Lao	financial capital. – A good entry-point for development! • Low-investment, low-risk, quick-return, simple, easily copied, technique. • Builds institutional capacity of responsible line agencies. Develops local fish supply capacity. Supports operational budget at local institutional level in line with work done technique is easily extended, easy to train trainers in 2-3h. • Networking amongst sectors of small-scale producers	• Limited institutional capacity of responsible line agencies. • Limited operational budget of line agencies at local level • Availability of fish fry reared to a suitable size for stocking in rice paddies or seasonal water bodies is a common constraint to small-scale aquaculture. • Communication is a key requirement of an emerging industry
6. SUPPORTING FISH PRODUCTION & IPM IN IRRIGATED AND RAIN FED RICE **(For example, promotion of various participatory learning methods including farmer field schools)**	• Bangladesh • CARE INTERFISH	• Promoting IPM where the financial benefits of reduced pesticide application plus fish production is likely to exceed the cost of crop loss to pests. • Large-scale coverage of promotion of reduced pesticide use where development support for relatively intensive human capital asset building is available. • Improved use of land, water and human resources. • Significantly increasing income for low incremental input costs. • More efficiently recycling energy and nutrients, providing a more diverse, stable and productive system. • Reducing rice pests and weeds by stocking fish and reducing pesticide use.	• Chemical crop protection precludes other aquatic resource production in rice fields. • For fish stocking to be successful, wide geographical spread of reduction in pesticide application is desirable. • Improved ecological knowledge is a key requirement of behaviour change amongst rice farmers. • Limited stewardship is provided by private sector crop protection professionals.
7. PROMOTING FARMER-EXTENSION COLLABORATION IN UNDERSTANDING LIVELIHOODS **(i.e., promoting the development of diverse recommendations for diverse-complex-risk prone systems)**	• Lao PDR/ Eastern India • Regional Development Committee Southern Laos/Aqua Outreach Lao EIRFP/ UoS (DFID RNRRP)	• Supporting aquatic resources management in the context of livelihoods. • Developing communication channels between farmers and extension agents. • Developing decision-trees and the promotion of flexible extension messages. • Supporting rain-fed rice fields fish production (wild fish & cultured) in diverse agro-ecosystems. • Supporting small water body management systems.	• Recommendations not based on flexible livelihood strategies. • Extension agencies promote centralised and standardised technical recommendations. • Limited institutional capacity of responsible agencies. • No involvement of farm families in defining recommendations. • No formal procedure for recording, monitoring or upgrading recommendations.
8. PROMOTING THE SHARING AND DEVELOPMENT OF ROBUST TECHNOLOGIES MORE WIDELY IN THE REGION	• Bangladesh, Vietnam, North East Thailand, Lao PDR & E India • Cages (CARE) • MRAG, NFEP, INTERFISH, EIRFP, Aqua Outreach	• Homestead pond green water systems. • Small-scale cage aquaculture. • Culture-based fisheries. • Irrigated rice field nursing of common carp. • Systems based on seasonal ponds and ditches. • Systems based on small carps/tilapias (local common carp and silver barb and tilapias).	• Limited extension of low-investment, low-risk, simple, easily copied, techniques. • Poorly developed links between extension agents and other aquatic resources management development professionals.

Source: Haylor, G (2000): Eight successful systems for promoting sustainable livelihoods through developing aquatic resource management systems that benefit the poor in S E Asia. Aquatic Resources Management Programme Briefing Paper 2. DFID SEA.

Box A 10.1: The development of a network of farmers nursing fish fry to fingerlings in Southern Laos by the Regional Development Committee, AIT Aqua Outreach Lao, DFID, and SIDA

What the people do:
Negotiate & agree access to a water body with some natural productivity
Acquire & set up a 4x5m *hapa*[1]
Acquire & stock 2000, 2-3cm fry
Feed sieved rice bran
Nurse for 6 weeks up to 5-6cm
Sleep nearby[2]
Sell or stock in ponds/paddies

What the local support staff do:
Facilitate setting up a network of farmers interested in fry nursing
Facilitate negotiation & agreement of access to water body
Acquire & administer leasing of 4x5m *hapas**
Acquire & supply first time farmers with 2-3cm fry*
Train farmers in sieving and feeding rice bran & basic nursing for 6 weeks up to 5-6cm
(*Providing a small remunerative benefit to the administrative office operating budget)

How the system works:
Training is made available to network members and membership is dependent upon poverty criterion. Renting a *hapa* and purchasing fry on credit, in the first instance from local support staff, demonstrates farmers' commitment.

A donor may build the local operational budget of active staff, through the purchase of fish and the provision of *hapas* for rent, whereby funds recouped from farmers after nursing go back to the local support budget not the donor.

Local support staff manage the setting of prices and payback mechanisms, which are recorded. This helps to build administrative capacity, with the incentive that those offices which engage most with aquatic resource users receive and administer larger operational budgets.

To reduce risk and complexity, the fry stocking rates are very conservative and the feeding strategy is very basic (farmers will adapt systems to their own resource use patterns). Financial profiles are based on a 300-600% increase in fish value over a 6-week period. Returns depend upon costs, survival, growth, and market conditions.

Why it is appropriate for the poor and landless in the context of limited institutional support:
The system has proven useful for building basic husbandry and basic management skills with limited financial capital amongst the risk-averse, poor and landless, whilst building local institutional capacity (skills and operating budgets, with appropriate incentive structures).

It is a low-investment, low-risk, quick-return, simple, and easily copied technique. It is easy to train trainers in 2-3 hours, which develops local fish supply and networking amongst sectors of small-scale producers. A good entry-point for development!

Source: Adapted from the RDC Lao PDR contribution to the Aquatic Resources Management Programme e-conference 2000 on "Aquatic Resources Management for sustainable livelihoods of poor people"

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[1] A *hapa* is a fine nylon mesh net bag suspended in water to contain fish, it enables farmers to cheaply and easily intensify part of their fish farming practice without making extensive modifications to existing resources such as water bodies and rice paddies.
[2] It is usual when farmers make larger investments in horticulture or agriculture they sleep nearby

ANNEX 11 ECONOMIC APPRAISAL

A 11.1 This annex summarises the contribution of fisheries to economic growth, revenue generation, foreign exchange earnings, and the implications of STREAM for equitable development and government policy. It focuses on Cambodia and Vietnam.

CAMBODIA

Contribution to GDP

A 11.2 The agriculture sector is the mainstay of the Cambodian economy, comprising 75% of employment, 45% of GDP, and the majority of exports. Inland fisheries, and to a lesser though still important extent, aquaculture and marine fisheries, provide a central source of food, employment, trade and economic well being in Cambodia.

A 11.3 Estimates of the contribution of fisheries to GDP vary, though the latest figures from MRC/DoF[1] sources are probably the most accurate. Earlier estimates place fisheries contribution to GDP at about 2.1%. However, annual freshwater fish production is currently estimated to be 290,000-430,000 tonnes (the 4th largest inland fishery in the world), representing a contribution of 8.8-10.3% to GDP.

A 11.4 Half of this total production is estimated to contribute directly to the livelihoods of the poor, one-third of which is from so-called family fishing and 15-25% from rice field fisheries[2]. The average annual per capita consumption of fish is estimated at 23-31 kg. Including the per capita consumption from aquaculture of about 1.2 kg, this is far larger than the consumption of other protein sources such as beef (3.3 kg), pork (8.5 kg) and chicken (2.8 kg).

National revenue

A 11.5 Financing and public sector reform are dominant issues in Cambodia and the Royal Government Council for Administrative Reform (CAR) has articulated a comprehensive agenda for reform concentrating on good governance[3]. There is no income taxation in Cambodia. The majority of public revenue is from customs duties and public enterprises (such as post and communication), royalties (forestry, fisheries etc.) and Value Added Tax (VAT). In 1999 these three sources contributed 33%, 27% and 25% respectively to the total state revenue[4].

A 11.6 As a result, there is little sense of accountability to the population (i.e. non-tax payers) and a tendency of agencies to protect their mandate and revenue base (although only a portion of official revenue is reallocated). This is exemplified, for example, in the poor working relationship between the Ministry of Agriculture Forestry and Fisheries (MAFF) and the Ministry of the Environment (MoE) in relation to overlapping mandates regarding environmental protection and natural resources management.

A 11.7 Currently, the functioning of the public fisheries institutions is strongly rooted in their financing and administration, which is characterized by poor governance. Sub-Law 26

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[1] Zalinge and Nao Thuok (1999) and Ahmed et al. (1998)
[2] Deap et al. 1998 and Ahmed 1998
[3] At the Paris CG meeting, 2000
[4] Ministry of Economics and Finance, 2000

(1989) prescribes the division of revenue collected from the auction of fishing lots and fines. 10% of the revenue from fines is reserved to reward officials who are outstanding in reducing violation of the legislation. From the auction of fishing lots 5% is allocated to the Provincial Office of Fisheries and 10% to the DoF for maintaining and protecting the fishing domain. From the remaining 85%, the provincial treasury receives 40% and the Ministry of Economics and Finance 60%.

Provincial revenue

A 11.8 Since the adoption of the 1993 Budget Law all provincial revenue collection is centralised and then reallocated. However, the Governance Action Plan of the CAR[1] notes that approval at the Ministry level is required for routine line agency expenditure, budget allocations have not been honoured, and there is limited transparency of the use of budget funds and indications of their 'leakage and diversions'. This has resulted in 'irregularities' with the management of lots, which the MEF[2] and Prime Minister[3] have acknowledged.

A 11.9 The draft GAP includes initiatives to address budgetary issues, including implementing the gradual devolution of budgetary authority to directors of provincial departments and line ministries, and strengthening the National Audit Authority. STREAM can play an important role in this process, by facilitating the sharing of innovative institutional processes and structures from similar organisations.

Department of Fisheries revenue

A 11.10 In the case of the Department of Fisheries, administration of (commercial) fishing generates revenue, whilst the operation of the department and its development objectives requires revenue. The new draft fisheries law remains unclear on the issue of financing. The proposed new Article 12 would represent a major change to current policy on financing the sector, whereby all revenue would be collected and utilised by the DoF.

A 11.11 However, since aquatic resources are the property of the state (Article 58), i.e., the people not the DoF, this would be unconstitutional. There is, however, clearly a requirement for a process of revenue collection and re-allocation that provides incentives to increase revenue and to manage the resource sustainably. This should be consistent with other sectoral policies such as land and forestry. STREAM can play an important role in facilitating debate about sectoral financing from a regional perspective.

Expenditure on human resources

A 11.12 A strategy to rationalise expenditure on human resources is included in the Government Action Plan produced by CAR. This involves rationalising pay, employment structures, skill distribution, and competitive selection. Currently, government positions are permanent and staffing levels are high, but salaries are insufficient to support a family (US$15-20/month) hence many staff take second jobs, operate businesses, or seek other sources of revenue.

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[1] RGC (2000) Draft Governance Action Plan in Good Governance, paper presented by the RGC at the 4th CG meeting in Paris 25-26 May 2000.
[2] MEF (2000)
[3] Circular No 28 RGC 31.7.00

A 11.13 Many of the NGOs active in the sector operate with staff from the DoF. The government is undertaking an innovative process of 'localisation of NGOs', which involves incorporating their activities back into the realm of local governance of the sector. One example is the localisation of the NGO SCALE, which will become a component of the Kandal Fisheries Department.

A 11.14 STREAM will play an important role in linking NGO and government activity. Two of STREAM's founding partners, DFID and VSO, already support SCALE and the DoF to build capacity in livelihoods approaches and to share lessons learned. In addition, AIT Outreach Cambodia in conjunction with STREAM has proposed support to develop a human resources management plan for the DoF to help rationalise expenditure on human resources, promote career structures for DoF staff, and streamline donor salary support.

Revenue collection at the local level

A 11.15 The day-to-day management of the sector objectives occur at the local level. Poorly paid (and often poorly trained) provincial DoF staff carry out the difficult task of revenue collection from auctions, settling disputes, monitoring, collecting fees, etc. In view of the financing and administrative issues outlined above, perverse incentive structures operate at the local level, which are characteristic of traditional patron-client relationships.

A 11.16 Wealth and power often rests with the fishing lot operators who can buy in the services of workers and officials to secure their operations sometimes from others including local communities. Access to the STREAM communication strategy will help to highlight through livelihood analysis and regional learning, the policies, institutions and practices that could support more equitable development of aquatic resources management.

Donor dependence

A 11.17 Currently, the rural development/aquatic resource management agendas of the Department of Fisheries and the Ministry of Rural Development (MRD) in Cambodia are financed through donor support. The government is apparently only able to pay the salaries of the fisheries extension staff, while donors fund implementation of extension activities[1] (a list of current projects is given in Annex 8, under stakeholder analysis).

A 11.18 Other local management and implementation structures such as MRD Village Development committees (VDCs)[2] are at present also functioning through the support of international organisations or NGOs. The Government is currently unable to allocate money for their continuing operations after the withdrawal of support [for projects]. STREAM would expect to work with VDCs to develop pilot self-financing incentive structures, facilitating lesson learning from elsewhere in the region.

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[1] Chim Charya et al. 1998 Learning from Rural Development programmes in Cambodia Working Paper 4 Cambodia Development Research Institute

[2] VDCs comprised 5 to 7 members by election, depending on the size of the village. Based on estimates of the MRD, there are about 3,422 VDCs in Cambodia, established in 26 percent of the villages as of September 1999

Opportunities for STREAM

A 11.19 There is much to be accomplished in institutional reform of the public sector within Cambodia including the fisheries sector. STREAM could help to identify opportunities relevant to the sector in terms of economic policy research, strategic planning, restructuring and decentralisation. In addition, STREAM could facilitate access to market based information on fisheries products at a local level to inform strategic planning as well as policy research cutting across economic issues of fisheries sector, e.g., documenting the importance of fisheries to communities.

VIETNAM

Transition towards a market economy

A 11.20 Very significant changes in the running of the Vietnamese economy have been implemented over the last quarter century. After the reunification of the north and south of Vietnam in 1975, the private ownership of land and its production was changed to a co-operative system.

A 11.21 The change resulted in yield stagnation from 1975 to 1980. The state controlled all land and natural resources and virtually all the productive activities. It allocated equipment and raw materials for production and organised agriculture under a collective system. It managed the distribution of agricultural products and consumer goods for personal consumption. The state also created monopolies in critical industries and foreign trade. Prices were set by the state-planning agency and jobs were guaranteed for all those willing to work.

A 11.22 Food shortages occurred and agricultural growth of 2%[1] did not keep pace with population growth of 3% in 1976 and 2.16% in 1979[2]. Some degree of private ownership along side production for collectives was allowed with the introduction of a contract system in 1981. This stimulated growth in rice output to 3.14% between 1981 and 1987.

A 11.23 Following continued severe economic and social problems, the 6th Congress of the Vietnam Communist Party adopted a policy of restructuring. Agricultural collectives were dismantled and land distributed in 1988. Controlled prices were abolished in 1989, production and consumption subsidies were eliminated, and interest rates on loans to state firms were raised above the level of inflation. Structural reforms to foreign trade were implemented (though barriers still remain). In 1993, log-term use rights of land were finally given to farmers and this led to an agricultural boom, resulting in Vietnam becoming one of the worlds top rice exporters.

Decentralisation

A 11.24 Domestically, Vietnam is moving away from wide ranging control by central government towards greater involvement in planning and decision-making at the 'grass-roots' level. Vietnams' Grass-roots Democracy Decree is an important step in implementing elements of good governance[3] at the local level. The decree is still at an

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[1] (Dapice and Phat, 1995 in MRC 1999)
[2] (World Bank, 1994 in MRC 1999).
[3] Governance is the manner in which power is exercised in the management of social and economic resources. Ideally governance should be transparent (low-cost access to information), accountable (capacity to call officials to account), predictable (clear and enforced laws and regulations) and participatory.

early stage in its implementation but offers a significant opportunity for strengthening the two-way dialogue for which people are hungry (i.e. information on the nature and timing of public policies and programmes, and opportunities to influence these). The relationship between the fisheries sector and the decentralisation process in Vietnam and elsewhere (e.g., Thailand and Cambodia) could benefit from the STREAM communication strategy.

Growth in the agricultural sector

A 11.25 Vietnam has made remarkable progress in economic growth and development since the beginning of economic reforms in the early 1980s. Since 1988, aggregate GDP has increased on an annual basis by an impressive 8-10% in real terms (Poverty Working Group 2000), putting Vietnam among the 10 fastest growing economies. Industrial sector growth has been rapid (13% per annum), whilst the well-established agriculture sector has grown at an annual rate of 4.5% during 1992-1998. This is largely a consequence of the assignment of land use rights to farm households and the liberalisation of marketing arrangements. Vietnam is now the world's second largest exporter of rice after Thailand, achieving an export volume of 3.8 million tonnes in 1998.

A 11.26 The performance of the agricultural sector has led to a dramatic improvement in the incomes of rural households, which have risen by 61% over the five years between 1993 and 1998, increasing the share of agriculture in rural incomes to 47%. However, there is concern that the limit to increased rice production based on further expansion of the area under cultivation has been reached. Apart from the Central Highlands, most land suitable for agriculture is already cultivated and new settlers have to do with less fertile land.

A 11.27 These concerns, taken together with the vulnerability of the world market for rice, reinforce the need for appropriate forms of agricultural diversification. A breakdown of the contribution of different categories of agricultural activities demonstrates that 'there has been a tremendous diversification away from rice'. Though real revenues from rice cultivation have increased by 21% over this period, there have been increases of 53% in real revenues from livestock and aquaculture, 55% from other food crops, 66% from industrial annual crops (sugar cane, cotton, soybeans) and 127% from perennial crops (rubber, coffee, tea).

Alleviating poverty

A 11.28 However, translating economic growth into poverty alleviation requires targeting of the poor. In Vietnam poverty is largely a rural phenomenon, with 90% of the poor living in rural areas and 45% of the rural population living below the poverty line. Targeting resources for poverty alleviation demands consideration of the incidence of poverty, the depth of poverty and the size of the poor population:

- The *incidence* of poverty has declined in all seven regions. The three regions with the highest incidence of poverty are Northern Uplands (59%), Central Highlands (52%) and the North Central Coast (48%). According to Participatory Poverty Assessments (DFID/World Bank, 1999) in the Northern Uplands, many households are too remote and often too deprived of financial capital and land to take advantage of market opportunities opening up elsewhere. Critically, they also lack information on markets and technologies. A high proportion of these households belong to ethnic minorities.

- The *depth* of poverty has also been reduced for all regions in recent years. However, poverty in the Northern and Central uplands is deeper below the poverty line than the nation's poor as a whole.

- Consideration of the *size* of the poor population by region gives a different picture. The Northern Uplands (28%), the Mekong delta (21%) and the north Central Coast (18%) together account for 70% of Vietnam's poverty.

A 11.29 There is an opportunity for STREAM to support the targeting of the poor within these regions in the context of the new MOFI SAPA strategy (see A 9.14 in Annex 9). In particular, it can help to set into operation the new policy, institutionalise the analysis of livelihoods, and approach development from a (new) livelihoods perspective.

ANNEX 12 SOCIAL APPRAISAL

A 12.1 This annex summarises social issues of inclusion and exclusion, management and equity including issues of ethnicity and gender. It highlights the links between nutrition (in which aquatic resources play a key role) and human capital. It analyses the primary and secondary stakeholders in regional aquatic resources management and the potential for STREAM to add value to the issues and interests of stakeholders.

PARTICIPATION AND EXCLUSION

A 12.2 The initiative has at its core an inclusive learning and communications platform that will link a diverse range of stakeholders. These include the following categories: Poor and vulnerable aquatic resource users, community authorities, government ministries and departments, provincial and district authorities, NGOs, research and training organisations, donor initiatives, industry suppliers, and corporate sponsors. The initiative will allow groups to participate in presenting their own perspectives, views and aspirations in relation to aquatic resources management in the region.

A 12.3 STREAM will focus on communities where access to services and assets, livelihood opportunities, and knowledge is poor.

GOVERNANCE AND CONFLICT

A 12.4 The proper management of fishing from the perspective of sustainable natural resources management and equitable rural development in many contemporary contexts of poor governance is a special and complex policy issue in the region. Cambodia is a specific example. Nearly 10 million people live in rural areas, of which 4.3 million live on less than US$113 per year. Rural landlessness and loss of access to traditional fishing grounds are an increasingly common phenomenon, yet the fish resource is perhaps the forth largest in the world (Box A12.1).

A 12.5 At the local level, institutional deficiencies can be magnified by interference from other local authorities such as military units or police. Widespread conflicts are reported in Cambodia. Specific studies[1] include Battambang Province, Siam Reap Province, Kompong Chhnang Province and Kompong Cham Province around the Tonle Sap, and Stung Treng Province and Takea Province (on the Mekong and tributaries).

A 12.6 These include conflicts between lot operators and local people, open access areas appropriated by local authorities (DoF staff, police, military, village and commune chiefs) and leased to business interests, lot operators use of illegal methods (pumping water bodies dry, electric fishing, use of Samras traps), villagers poaching inside lots, un-demarcated lot boundaries being extended. For example, lot 6 (Siam Reap) is the largest and most productive lot, and administered by 48 armed guards who restrict the movement of local people.

A 12.7 STREAM cannot address the issues of governance and conflict but will provide mechanisms for poor people to highlight their situation, express their views and share

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[1] Gum, 1998, 2000a, 2000b; Sitirith 2000; Thouk and Song, 1999; Star Kampuchea, 2000; Kato, 1999; Swift, 1997; 1999, EWG, 2000

their objectives, through capacitating the use of video and film diaries and extending the reach of networks which don't yet include these groups. STREAM will also complement increased communication potential by building capacity amongst support agencies to understand the livelihoods of poor resource users so that policy and practice can better reflect reality.

Box A12.1: The increasing importance of aquatic resources, land loss and conflict in Cambodia; a case study from Battambang Province (OXFAM, July 2000)

Battambang Province has a Great Lake shoreline of 40km, and many lakes and streams inside the temporally inundated forest that are exposed as floodwaters recede (characteristic of eight other Cambodian provinces).

The key components of livelihoods (around 80% of families) are wet-season rain-fed rice, 'chamchar' agriculture (dry season field crops such as corn, beans, water melon, cucumber, etc) and aquatic resources collection (fish, plants, insects). Most families suffer food shortages through the year. Wet rice provides the nutritional staple, and aquatic resources and chamchar production provides cash to buy food and support other needs, though chamchar requires significant inputs and risks of failure are high.

Loss of land is common; distress sales because of illness (commonly dengue fever) or expropriation by authorities (often soldiers, reflecting proximity to battlegrounds during the 1980s and 90s) accounts for 80% of land loss. The principle (often exclusive) livelihood for 90% of the landless is aquatic resources.

Access to aquatic resources, primarily fishing grounds, is under threat from the expansion of commercial fishing lots by the Department of Fisheries; a trend increasingly apparent since 1999. Impacts include the exclusion of local fishers from traditional fishing areas by lot operators, denial of travel through lots for collection of aquatic plants, etc., and conflicts over water use. Conflicts are characterised by violent and sometimes fatal armed confrontation.

The existing documentation suggests the same trend throughout the extent of the inland fishing areas of Cambodia.

ETHNICITY

A 12.8 Ethnicity is an important issue in the context of aquatic resource management. In Cambodia, historical ethnic cleansing of Khim (ethnic Vietnamese who have resided in Cambodia for extended periods, but subjected to widespread anti-Vietnamese sentiment), selective patrolling in relation to Cham and Khim ethnic groups, the predominance of Khmer in the DoF, and different competences and perceptions of the various groups, impacts on the development and implementation of legal and policy issues. The key ethnic groups involved in fishing in Cambodia are:

- **Khmer**: Richer Khmer tend to be lot operators. Poorer Khmer see themselves more as farmers, are most often involved in conflicts (which may include agriculture verses fishing conflicts), and are often small-scale fishers. They are rarely involved in retailing, and characteristically lack organised groups or structures, except Pagoda committees, which, as Buddhists, are not traditionally involved with fishing.

- **Chinese Khmer**: Chinese Khmer are well represented amongst lot operators and large-scale processing operations.

- **Khim**: Khim livelihoods are heavily dependent on fishing. They tend to be master fishermen, and are rarely involved in conflicts with authorities or lot owners. Even at the family level, fishing in open access areas commonly requires licences. Khim are involved in all levels of fishing, processing and retailing.

- **Cham**: Cham livelihoods are heavily dependent on fishing though some own agricultural land. They are Muslim, skilled fishers and boat builders, with a strong sense of community often with a designated leader. They travel long distances in family groups by boat to fish, often in riverine areas. They are normally involved in small to middle size fishing and retailing.

A 12.9 In Vietnam, fish culture is traditional among some ethnic groups (e.g., Tai and Muong) and appears to have spread to others[1]. In Cao Bang, a northern province of Vietnam near the border with China, few wild fish exist and few are available in the market. However, a local variety of common carp is a staple part of the diet and trade in the fish and their seed are a key component of local livelihoods[2].

A 12.10 Rice farmers in Northern Vietnam culture local common carp in rice fields using indigenous techniques. Small adult fish kept in small ponds near households are transferred to fallow rice fields and encouraged to spawn on leafy substrates. They then grow into fry and fingerlings in the same rice fields into which rice is later transplanted and are cultured further, either concurrently or in rotation with rice, to produce table fish mainly for household consumption.

A 12.11 STREAM will aim to promote equity, by increasing transparency through the use of livelihoods analyses. These analyses will highlight plurality in customs and ways of living, as well as the selective impacts of institutions and policies on different ethnic groups By institutionalising improved analyses and understanding of diverse livelihoods, STREAM will also highlight indigenous knowledge and facilitate greater diversity and suitability in support approaches.

GENDER

A 12.12 Gender is used to describe all the socially given attributes, roles, activities and responsibilities connected to being female or male in a given society. It is one marker among others such as age, race, ethnicity, class, disability, connections, education, and sexual orientation etc that determines status.

A 12.13 Within the hierarchy of Cambodian society women are considered to be of a lower status than men. This may stem from Khmer Buddhism, a strand of the Theravadan school, and the 'traditional' belief that to be born a woman is a negative consequence of past life actions. Social attitudes about the inferior status of women translate to them having limited power and intelligence in relation to men.

A 12.14 The effect of this social idea is that Cambodian women have less skills and qualifications than men offered through education[3]. Women are then unable to compete for professional and decision-making positions that command status and wealth. In some instances women are entirely excluded. For example, a *Wat*

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[1] (Little, Tuan and Innes Taylor, 1997)
[2] According to Little and Tuan (1999)
[3] The adult female literacy rate in Cambodia is 55%, while for adult men it is 79%.

committee oversees activities for the benefit of the *Wat* and village. They occasionally meet with other committees for discussion of important matters relating to the *Wat*. However, membership of the *Wat Committee* is limited to males only, often comprising three male representatives from each village.

A 12.15 Access to aquatic resources is more limited for women than for men. In extreme cases, men are using sexual assault and the threat of sexual violence to restrict women's mobility and access to natural resources[1]. Laws dealing with rape and sexual harassment are still to be passed in some countries, e.g., the Government of Cambodia[2]. The absence of legal protection is a barrier to women's full participation in access and control of natural resources. This impacts especially on families headed by women (sometimes comprising one in five rural households, either on a seasonal or permanent basis[3]). It further obstructs the fundamental right of all women to live without the fear of violence both inside and outside of the home.

A 12.16 Political power often accumulated via patronage systems disadvantages women, as they are often unable to amass the economic and social resources necessary to sustain such relationships. For lasting and effective rural development it is necessary to confront these cultural and structural barriers that inhibit the transformation of existing gender inequalities and inequities.

A 12.17 STREAM will maximise the sharing of issues of relevance to women and men by working with mixed gender teams to conduct livelihoods analyses. The formation of livelihood teams from the provincial Department of Women's Affairs and Department of Fisheries in Cambodia, and the Vietnamese Women's Union and Department of Agriculture and Rural Development in Vietnam, underlines this commitment amongst STREAM partners.

NUTRITION AND HUMAN CAPITAL

A 12.18 Human capital represents the skills, knowledge, ability to labour, and good health that together enable people to pursue their livelihood objectives. Good health and appropriate nutrition are fundamental to the use of other capital assets. Fish and other aquatic products play an important role in health and nutrition. They are widely in demand and cannot be easily substituted.

A 12.19 Well-managed aquatic resources not only provide opportunities for food security and income generation but also locally supplied animal protein and a range of vitamins and essential trace elements, which are found in few other foods. Fish contains large quantities of high biological-value protein[4], particularly sulphur-containing amino acids that represent a significant supplementary value to vegetable proteins. In particular, it contains appreciable quantities of lysine, an essential amino acid found in only small amounts in local cereals, rice, wheat and maize, which form the basis of the diet of many low-income groups.

A 12.20 Tiny shrimps, crabs and green aquatic vegetables, available even amongst many of the poorest families, have been shown to reduce second and third degree malnutrition

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[1] In some areas the armed guards patrolling fishing lots have used rape as a weapon of social control.
[2] Beijing +5 Working Group 2000
[3] Mehta, M. 2000, *Community Development and Landlessness. Mini Case Study 8.* Oxfam GB Cambodia Land Study Project: Phnom Penh.
[4] Those most useful in maintaining and building body tissue.

in children under 3[1]. Small indigenous fish (most commonly captured or cultured by the poor), which are eaten whole, are more nutritious than steaks of larger cultured fish [2]. Importantly, fish (especially small fish eaten whole) is a valuable source of calcium, iron, iodine and Vitamin A[3]. Their increased availability to pregnant mothers and young children helps to counter public health problems such as goitre, maternal anaemia and night-blindness, which are prevalent in the region.

A 12.21 In Vietnam, for example, a survey by UNICEF and the Endocrine Institute identified 94% iodine deficiency in a random sample of 3,062 schools. According to Professor Ha Huy Khoi (Director National Institute of Nutrition, 1996), iodine deficiency is serious and widespread. Significant iodine deficiency is found in mountainous and highland regions, where the population generally consists of ethnic minorities. About ten million Vietnamese, which live in these regions, are threatened by iodine deficiencies. Nearly 35% of mountain population suffer goitre morbidity (National Institute of Nutrition, Hanoi, 1996).

A 12.22 According to WHO (1999), as many as 125 million children are currently at risk of Vitamin A deficiency in S E Asia. In Cambodia, for example, 10% of mothers during pregnancy and 3-6% of children aged 24-71 months suffer from night-blindness. Vitamin A deficiencies exist in all regions but high incidence is reported in South Central Coast followed by the Midlands. Though the countries in the region have launched short-term Vitamin A deficiency prevention programmes, such as supplementation with Vitamin A capsules, a more sustainable solution would be to encourage dietary diversification and ensure higher dietary intake of Vitamin A-rich foods, such as fish.

A 12.23 STREAM will highlight the value of aquatic resources to poor people, especially to planners and managers outside the fisheries sector, by improving networking and the dissemination of information through its communication strategy. This will help to emphasise the role of nutrition in human capital asset building, and the role of aquatic resources in the nutrition of poor groups.

STAKEHOLDER ANALYSIS

A 12.24 The main stakeholders, their interests, and the potential impact of STREAM is presented in Table A.12.1.

Primary stakeholders

A 12.25 Primary stakeholders are poor people who depend on aquatic resources. Aquatic resources are of particular importance in the livelihoods of the landless (e.g. those who trade fish for rice and other commodities), the rural poor (whose livelihoods commonly depend upon aquatic resources, forest resources and a small amount of rice land), and ethnic minorities (where low-input aquaculture has successfully supported livelihoods, e.g., in Vietnam).

A 12.26 Because of the paucity of reserves (i.e., savings and food stocks, especially for poor households), common property resources, especially aquatic resources, are of pivotal

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[1] Save the Children, 1998
[2] Thilsted and Hassan, 1993; Thilsted and Roos, 1997
[3] Mogensen, 2001 Research Department of Human Nutrition, the Royal Veterinary & Agricultural University, Denmark

importance in ensuring food security. In some parts of South East Asia, aquatic resources comprise a large proportion of the animal protein intake of poor households, and whilst households catch and consume significant quantities of fish and other aquatic products, there is increasing evidence that wild aquatic resources are declining.

A 12.27 In Cambodia, fish provides 70-80%[1] of all animal protein intake. Foraging for fish, crabs, shrimps, snails, frogs and green vegetables from rice fields is carried out by 87% of households[2]. Every year, a huge migration takes place to the Tonle Sap to trade rice for Trey Riel (*Henicorhynchus* sp. – a small cyprinid) to make *Prahoc* (fish paste). This is a key component of seasonal food security for poor rice farmers, and most landless people catch and trade fish for rice.

A 12.28 The management of ubiquitous small-scale water bodies is of particular interest to communities. These play an important role in subsistence needs and income generation, and fisheries technologies exist to increase the standing stock and returns to fishing effort. However, initiatives to enhance the management of such systems, which catalyse changes in use patterns and access, raise important issues about managing the process, and whether benefits accrue to the poor.

Secondary stakeholders

A 12.29 The initiative will work with secondary stakeholders including community authorities, government ministries and departments, provincial and district authorities, NGOs, research and training organisations, donor initiatives, industry suppliers and corporate sponsors. Their interests are listed in Table A.12.1.

Key stakeholders and participation

A 12.30 STREAM Will bring together important and influential stakeholders in order to shape opinion, strategically plan, and learn from 'pilots and learning initiatives'. Stakeholders have been classified in Table A.12.1 into potential policy partner categories:

P1: Poor people in communities who depend on aquatic resources who are important but have little influence

P2: Those who influence opinion, link and bring together others stakeholders, and who shape ideas or concepts about aquatic resources management

P3: Government and private sector organisations who make official policy or have significant influence policy formulation or on day-to-day practice.

A 12.31 Figure A12.1 displays the importance and influence of stakeholders. Those marked with an * contain partners in the initiative and those that are emboldened have been involved in consultation events during the preparation phase.

A 12.32 There is (sometimes armed and violent) conflict between some stakeholders in some parts of the region and policy change is ongoing in several places. Decentralisation is empowering local level democratic institutions to manage natural resources, but there is little knowledge of key issues and problems with facilitating policy making and planning. Information and knowledge flows are segmented between stakeholders and geographically.

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[1] (Thuok *et al.*, 2000),
[2] (UNICEF, 1994)

Table A.12.1   STAKEHOLDER ANALYSIS

STAKEHOLDER	CAT[1]	INTERESTS/ROLE RELATED TO AQUATIC RESOURCES	ADD-VALUE[2]
PRIMARY STAKEHOLDERS			
Poor & vulnerable aquatic resource users	P1		
1. Landless 2. People with small landholdings 3. Marginalized groups (geographically isolated, ethnic minorities, Single mothers and widowed women, the elderly, low castes, people with HIV/AIDS)		• Income generation from aquatic resources • Secure access to wild aquatic resources • Secure ownership of cultured aquatic resources • Seasonal food security • Know-how, capital and reduced barriers to entry to enable establishment of aquaculture activities • Reduced transactional costs • Enhance livelihoods • Empower basic human rights	XXXXX
Community authorities	P2/3		
4. Cambodian Village Development Committees (VDCs).		• Consult with the community and analyse situations relating to the village • Set priorities and formulate plans or proposals for the development of the village on an annual basis. • Locate the resources needed for the plans and programs, as well as assistance to help the community • Encourage the participation of people	XXXXX
5. Vietnam Peoples' Councils		• Implementation of policies and programmes relating to rural development • Decision-making power with respect to policies, budgets, and revenues • Responsible for mobilising financial and human resources in accordance with government norms	XXXXX
SECONDARY STAKEHOLDERS			
Government Ministries and Departments, and Provincial and District Authorities		• Facilitating, mediating, delivering services	
6. Cambodian Department of Fisheries	P3	• Admin. of fisheries and aquaculture at national level; research and development aquaculture/fisheries sector; conservation and protection of fisheries resources. The just exploitation of the fishery resource • Supply all Cambodians with enough food • Protect and conserve the natural fisheries resources for sustainable use and for income generation • Revise the existing fisheries law • Improve the management of capture fisheries • Develop the inland and marine aquaculture sectors • Involve local people to participate in fisheries management, conservation and development • Develop fish processing, handling and marketing technologies • Develop scientific research and extension on fisheries	XXXXX
a. Fisheries domain, aquaculture, documentation and extension office		• Study and research on fishing lots and fish sanctuaries, draw maps, demarcate inland and marine fisheries domain, prevent fire of fisheries domain forest, dredge main areas, establish fish sanctuaries, control pollution of water, identify names of fishing gears, research on aquaculture and its technology.	XXX
b. Aquaculture Office		• Aquaculture activities relating to development, management, extension, training and research.	XXX
c. Administration and personnel office		• Ensure all administrative work is going on at national level.	
d. Planning and accounting office		• Develop national plan for all aspect of fisheries and aquaculture • Develop statistical information systems • Control all activities of accounting and financing affairs.	XXXX
e. Exploitation office		• Fix the fishing lots fee for bidding, fix the fee of allowed fishing in the inland and marine fisheries domain by type and size of gears, examine file of fishing license and permission to use fishing lots.	XXXXX
f. Contention office		• Address mismanagement by punishing, a fine, or transferring to the court. Examine all violations of the	XXXXX

[1] Partner category
[2] Potential for STREAM to add value to on-going work

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		• fisheries law.	
g. Inspection office		• Investigate the fisheries law violation on Cambodian territory, inspect all kind of inland and marine fishing exploitation, and arrest violators.	
h. New Community Fisheries Bureau		• **To be established this year to support Community Based Fisheries Management**	XXXXX
i. Chrang Chamres Fisheries/aquaculture research station		• Inland aquaculture applied research, development and technology dissemination, especially study on breeding, nutrition, and growth and research on genetics in the future.	
j. Provincial/Municipal fisheries office		• Administration of fisheries and aquaculture at provincial level • Research and development aquaculture/fisheries sector • Conservation and protection of fisheries resources, with mainly technical support from the Department of Fisheries.	
k. 11 provincial fisheries/aquaculture stations		• Fish seed production and breeding research.	
7. Cambodian Ministry for Women's Affairs	P2/3	• Formulate development policy and programmes, and coordinate the efforts of the various line ministries and assistance programmes with respect to women's affairs.	XXX
8. Cambodian Ministry of Rural Development (MRD)	P3	• Formulate rural development policy and programmes, and coordinate the efforts of the various line ministries and assistance programmes • Poverty alleviation • Access to services, more productivity and sustainable development. • "Actively undertake independent research initiatives to practically develop the rural areas of Cambodia by liasing widely, in order to assess likely needs and investigate possible solutions that would maximize identified opportunities" • Improve the quality of life of the rural people by encouraging and facilitating economic self-sufficiency and an active social awareness • Encourage and assist the rural community to participate more directly in improving farm production, rural-based industries and the marketing of their products • Seek, by all sensible means, to discourage the movement of individuals and families from the countryside to the towns. • Establish VDCs	XXXX
9. Vietnam Ministry of Fisheries (MOFI)	P3	• National fisheries extension policy and regulation, formulating national extension programmes, providing guidance to provincial extension centres on the formulation and implementation of extension programmes. • The national objective for fisheries and the fishing industry is to effectively contribute to the national economy to improve the national economy and the socio-economic conditions of the people including: • Maximising the sustainable contribution of fisheries to the national economic and social development, including social stability and national security. • Maximising employment and improving the income and living standards of rural communities that are depending on fisheries for their livelihood and sustenance. • Improving the nutritional standards of the population by increasing the supply of aquatic products to domestic markets and improving the access of the people to aquatic products • Ensuring that all fisheries and fishery related development activities are sustainable to ensure future generations to continue benefiting from fisheries. • Increasing the export of aquatic products and the net foreign exchange earnings that may derive from such exports. • Accelerating modernisation and industrialisation of the fisheries sector and its associated industries to improve the economic and financial efficiency of the sector and to establish and maintain comparative advantages. • Adapting an outward oriented industry environment and fully integrating Vietnam's fishing industries into the economic systems of the region and the world. This includes the adaptation and compliance with regional and international fisheries related agreements, and provisions that are in existence and that might be approved from time to time.	XXXXX

10. Vietnamese Ministry of Agricultural and Rural Development (MARD)	P3	• Coordination of rural development policy and strategy • Set policy and issue guidelines for provincial authorities. • Formulate policies, mechanisms and plans for resettlement, new economic zone migration, production development, sector development, extension.	XX
Non Government Organisations			
11. In Cambodia *Organizations with aquaculture specialist:* • UNICEF/FFP/CASD, sponsored by UN • PADEK, sponsored by OXFAM Belgium and NOVIB • AIT/DOF, sponsored by DOF, SIDA/DANIDA • SCALE/SAO, sponsored by DFID, VSO, Tear Fund UK, Tear Fund Holland, Tear Fund New Zealand, EU, Work Relief Canada, Embassy of the Netherlands in Bangkok, UNNDP, and other USD • MRC/READ, sponsored by DANIDA • SAMADHI, sponsored by French Embassy • APHEDA, Sponsored by Australia Catholic Relief • CARERE/UNDP • FAO, sponsored by UN • ADRA, sponsored by New Zealand Government *Organizations with no aquaculture specialist:* • CRS, CCFC, CWS, WFP, CONCERN WORLD-WIDE, CCC, CIDSE, GRET, IWDA, LWS, MCC, OXFARM GB, VSC, JICA, GTZ, SAMAKEE, AMERICA QUAKER, and EU/PRASAC	P2	Develop aquaculture technologies; on-station/on-field research; training; technology dissemination. Family fishpond and fish culture in Family Food Production. Promote aquaculture in S.E. Cambodia and in Siem Reap province. To create food and/or economic security; continue human resource development of the staff and the Royal Agriculture University. Small-scale aquaculture development and community based fisheries Management in Svay Rieng, Takeo and Kompong Speu province. To achieve improved livelihoods for the poorest groups in the rural areas with access to an aquatic resource and strengthen the national development institutions working to promote sustainable aquatic resources management on along term basis. Improve overall management of Cambodia's aquatic resources; strengthen the capacity of faculty of fisheries RUA and School of Agriculture Prek Leap SAPL to delivery high quality education on fisheries science the B.Sc. and diploma level and to conduct adaptive research and contribute to the future development of the national aquatic resources with particular reference to small-scale inland aquaculture. Small-scale aquaculture development in Kandal province. To combat the decline in Cambodia fish supply while providing an opportunity for local populace to enhance their nutrition base. On farm and station research on breeding, Tilapia, silver barb and common carp; short and long training course in the country and/or abroad to staff. Small-scale aquaculture development in the Mekong Delta. - Increase income through aquaculture; identify appropriate aquaculture technologies for different farming systems in the project area; Establish an aquaculture extension network Cage culture development in Kompong Chhnang province. Small-scale aquaculture development in Kom Pot province. Fishpond and cage culture development in N.W. Cambodia. Small-scale aquaculture development in Siem Reap, Kompot, Takeo, Kompong Cham and Battambang province. Small-scale aquaculture development in Kompong Thom province. Rural Community Development to include small-scale aquaculture development.	XXXX
12. In Vietnam: • Save the Children Fund sponsored by DIFD • OXFAM-GB sponsored by DIFD • Action Aid, sponsored by DIFD • PROFOUND	P2	• Mangroves afforestation to reinforce sea dykes, improve poor people's access to land, build up awareness and improve aquaculture activities • Women's small-scale aquaculture extension	XX
14. Peoples Organisations	P2	• Vietnamese Women's Union	
Research/training organisations			
14. In Vietnam: • Three research institutes under the ministry of fisheries, Research Institute for Aquaculture (RIA) 1 for Northern Vietnam; RIA 2 for the Mekong Delta, and RIA 3 for Central Vietnam. • College of Agriculture of the University of Cantho • University of Agriculture and Forestry, Hue • Provincial Extension Centre/Office	P2	• Universities & colleges education in aquaculture & related fields, which annually graduate 250-300. Officer training courses for extension officers and cadres and Farmer training courses designed for farmers.	XXXX

15. In Cambodia: • Cambodia Development Research Institute • Royal University of Agriculture • University of Ay Sey Veth • Prek Leap Agricultural College • Kompong Cham Agricultural School	P2	• Policy understanding & development • Degree courses (4-5 years), • Diplomas and certificates for 2.5 and 1 year • One-year certificate courses.	XX
Donor/international orgs			
16. In Vietnam: a. UNDP/FAO	P2	• (1986-1997) Strengthen research capacity, develop an extension network for the promotion of low-cost aquaculture to small-scale farmers	
b. Asian Institute of Technology (AIT), SIDA	P2	• (From 1995) Extend on-farm research to integrated systems in Red River Delta • (From 1997) Support a dialogue with the Northern Mountain provinces to introduce the potentials of such technologies for poverty alleviation • (From 2000) Following UNDP approach	XX
c. UNDP/FAO (1999+)	P2	• Follow a more participatory approach in three Northwest Highland provinces	XXX
d. NORAD from (1998+)	P2	• Capacity building to support poverty issues in rural and coastal areas	XXX
e. DANIDA (2000+)	P2	• Provide broad support to the fisheries sector, with poverty alleviation as core objective	XX
f. NACA, DFID, FAO (2000+), ACIAR, IDRC & others	P2	• Aquaculture for Sustainable Livelihood Development, regional networking • Small-scale research projects to support small-scale aquaculture	XXX
17. In Cambodia: Co-management			XXX
a. Community Aid Abroad	P2	• Support to community based management of deep pools in Stung Treng. • Member of Oxfam International	
b. FAO Siam Reap	P2	• Community based natural resource management in Siam Reap province	XXX
c. CBNRM (Rattanakiri)	P2	• Community based natural resources management in Rattanakiri	XX
d. Mekong Reservoir Fisheries Project (MRC)	P2	• Working through Provincial Rural Development Committees & SEILA, by establishing Provincial Natural Resource Management Committees	XXX
Small-scale aquaculture e. AIT Aquaculture Outreach	P2	• Conducting research & providing support to government departments in Thailand, Lao & Vietnam for implementation of co-management of reservoirs, and dissemination of experience • Working through partner government institution to build capacity to extend small-scale aquaculture. • Partnerships with academic institute	X XX X
f. MRC READ	P2	• Developing extension service	
g. MRC Capture Fisheries	P2	• Building capacity of Cambodia DOF to conduct research on fisheries Management	XXXXX
h. Project MRC Assessment of Mekong Fisheries	P2	• Research project on assessment of Mekong fisheries, viz on migration & spawning, production and socio-economic value of fisheries resources	XXX
i. SCALE DFID	P2	• Analysing livelihoods and planning support	XXXXX
Capacity building j. World Bank APIP	P2	• Addressing conservation and management of indigenous • Activities include demarcation of fish sanctuaries, equipping DOF • Establishment of Inland Aquaculture Research and Technology Development Centre	X
Grassroots Advocacy k. Oxfam Mekong Initiative	P2	• Research, advocacy & support to grassroots organisations in Mekong region • Wide range of partners including NGOs, community groups, government departments, academic institutes	XXX
l. NGO Forum/various	P2	• Co-ordinating forum for range of Cambodian NGOs addressing environmental and other development issues (including gender, human rights etc)	XXX

International Environment m. Technical Co-ordination Unit (MOE), IUCN	P2	• Responsible for co-ordinating between ministries (viz with DOF) for management of Tonle Sap Biosphere reserve • Regional and international support to conventions re conservation issues, based on support to demonstration sites	XXX
Industry suppliers/corporate sponsor		• People who provide seed, chemicals, medicine, equipment or other goods	
17. The Shell Company of Thailand (SCoT)	P2	• Financial support (0.5 million Baht invested, 4 million allocated for 2001-2001) in "Golden Jubilee Village Pond (GVP) Project"	XX
Media			
18. Print (newspaper, magazine), Radio, Television, Film, , newspaper editors, science and environmental journalists, financial and economic journalists, documentary film makers, magazine publishers	P2	• Highlight current issues • Give voice to poor aquatic resource users • Communicate best practice	XXX
Self-sufficient farmers, fishers and aquaculturists			
19. People who derive a large part of their livelihood from the exploitation of aquatic resources, either for domestic or commercial use. Landowners, entrepreneurial farmers/fishers, private sector companies	P2/3	• Deriving financial and other benefit from aquatic resources management	X
Urban Consumers			
20. People who buy and consume the products of aquaculture and other aquatic resources. Consumers in cities with populations over 1 million	P2	• Obtaining cheaply good quality aquatic resource products	XX

A 12.33 STREAM will support a learning and communication platform to empower those without influence and inform policy makers. P1's will increasingly influence as participatory methods and livelihood approaches are institutionalised. All partners will generate and receive information facilitated by the STREAM communications strategy. There will be greater learning through better sharing of the activities of P2's, and through specific learning initiatives. As opportunities arise, STREAM will be able to influence and support P3's to act on behalf of P1's.

Figure A12.1: The importance and influence of stakeholders (May 2001)
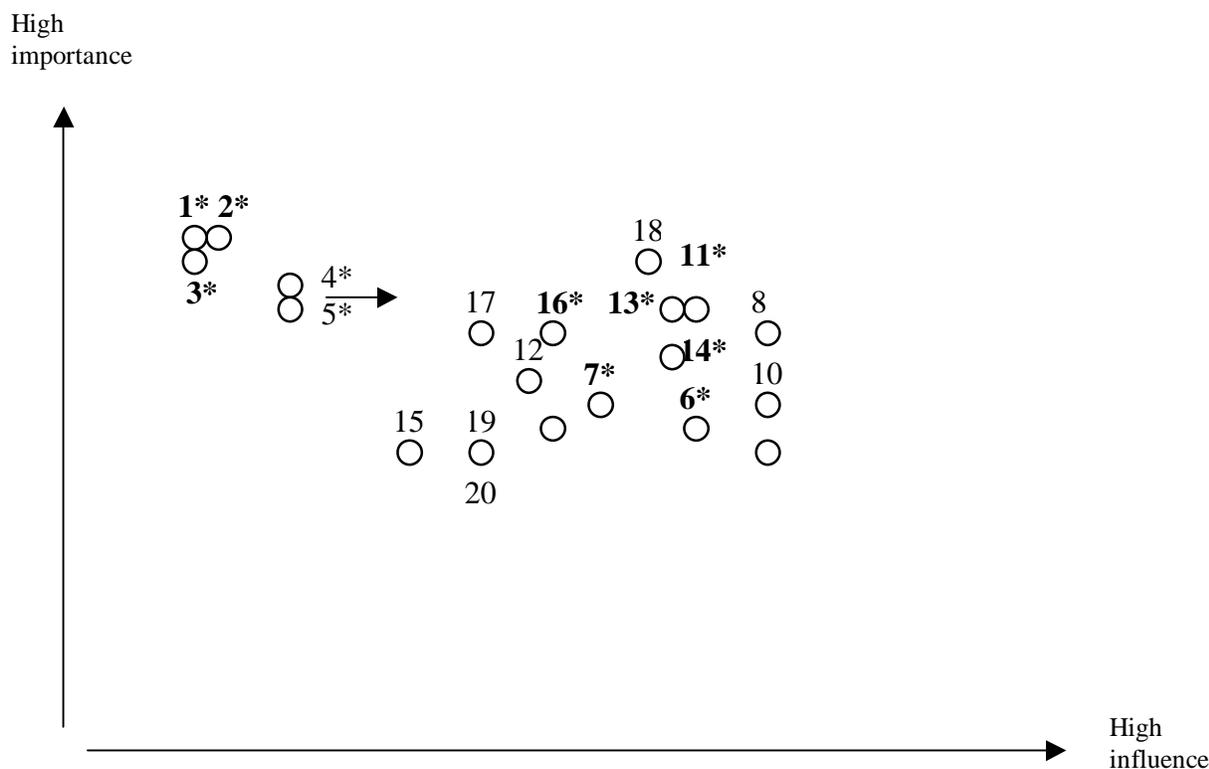
SUSTAINABLE LIVELIHOODS POLICY AND PARTNERS

A 12.34 An e-mail conference[1] and reports of aquatic resources use and poverty in Cambodia and Vietnam have highlighted the diverse livelihoods associated with aquatic resources management. Many communities derive benefit from individual fishing, foraging for aquatic resources, culturing fish, fish catching and processing, supplying commodities to fishers, fish farmers, distributing and selling products.

A 12.35 Commercial fishing on a large scale (e.g., in Cambodia) limits the availability of aquatic resources to poor communities. Coping strategies have led in some cases to waged labour in legal and illegal activities. At the same time, the resource is being exploited unsustainably. Alternative strategies and access to other sorts of capital assets are limited. Many communities are geographically isolated from markets and suppliers. Social assets like traditional institutions and networks, as well as human

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[1] Aquatic Resources Management for Sustainable Livelihoods of Poor People Proceedings of the DFID-SE Asia Aquatic Resources Management Programme E-Mail Conference, June 2000 Edited by Graham Haylor

assets like the community knowledge base, have been eroded by poor governance and pressure on the aquatic resource. Lack of access to aquatic resources aggravates the vulnerability of communities to trends and shocks and stresses.

POLICY PROCESSES AND INSTITUTIONAL RELATIONSHIPS

A 12.36 Key constraints to improving environmental and aquatic resource-based livelihoods lie in the patterns of behaviour of a range of groups and organisations, which govern people's access and management of the livelihood assets mentioned and thereby their strategies. Such behaviour is dictated by formal and informal relationships and policy processes, including cultural norms, norms of social interaction, and state laws. STREAM will encourage relationship changes through:

- Capacity building (participatory livelihoods approaches) and encouraging repositioning of support agencies

- Partnerships (private sector/NGO/Government)

- Iterative processes

- Increased use of mass media (experimenting with new approaches)

- Inclusive planning frameworks (increased [participatory] analyses and transparency in policy processes rooted in the reality of livelihoods)

- Improved access to learning and communication (improved knowledge base, accelerated communication of policy making processes, best policy and practice, strengthening the voice of poor aquatic resource users in wider policy processes).

Table A.12.2 desegregates positive behavioural changes within key relationships for improved aquatic resources management in respect of the P1 partners.

Table A.12.2   POSITIVE BEHAVIOUR CHANGES WITHIN KEY RELATIONSHIPS FOR IMPROVED AQUATIC RESOURCES MANAGEMENT

	Relationships between aquatic resource management structures	Types of positive change
1	Fishers and small-scale fish culturists and government (extension) services	Participatory approaches; pro-poor focus; pluralistic and iterative approaches; better sharing of knowledge approaches and resources.
2	Interface between aquatic resource users	Access to information and representation; inclusion in knowledge sharing and management fora; facilitated community-based fisheries management; conflict resolution.
3	Internal change within government fisheries organisations	Structure, planning, human resources management, skills, knowledge, information access and communications.
4	Internal change within non-government fisheries organisations	Structure, planning, human resources management, skills, knowledge, information access and communications.
5	Interface between fisheries and other government organisations.	Inter-departmental co-ordination mechanisms, inter-sectoral awareness and common strategy frameworks.
6	Interface between aquatic resource users and research organisations	Participatory approaches to issue identification, planning, knowledge generation and dissemination; pro-poor focus.
7	Interface between executive government and the wider policy environment	Participatory planning processes, transparent decision-making, communication
8	Interface between aquatic resource users and the wider policy environment	Strengthening voice of poor aquatic resource users via the media, through civil society and political structures.

PARTNERSHIPS

A 12.37 STREAM partners will be drawn from a wide range of stakeholders who perceive benefit from joining the initiative and who are able to contribute to it. A partnership process will require that all partners be engaged in activities, which strategically contribute to STREAM objectives. Examples of partnership activities are detailed in Table A.12.3.

Table A.12.3   Examples of partnership activities entered into to date

Support category	Partners	Activity
1. Identifying poor more vulnerable aquatic resource users	• RIA-1 (Red River Delta, Northern Mountains) Chan Tho • RIA-2 (Mekong delta) • RIA-3 (Central Vietnam) • Nha Trang University (Central Coast)	An assessment of the distribution of poverty and of aquatic resources use throughout Vietnam
	• DoF (Cambodia) • DFID	An assessment of the distribution of poverty and of aquatic resources use throughout Cambodia
2. Understanding livelihoods (capacity building)	• NZODA • SCALE • DFID	Building capacity to undertake livelihood analysis using participatory approaches and mobile interactive GIS
	• DoF (Cambodia) • DOWA (Cambodia) • DFID	Awareness raising workshop developing Livelihood frameworks
	• DoF (Vietnam) • VWU (Vietnam) • DFID	Awareness raising workshop developing Livelihood frameworks
	• DoF (Cambodia) • DOWA (Cambodia) • DFID	Capacity building workshop in participatory approaches and livelihood analysis
	• DoF (Vietnam) • VWU (Vietnam) • DFID	Capacity building workshop in participatory approaches and livelihood analysis
3. Identifying best practise	• AIT • NACA • DFID • ICLARM • MRAG	E-conference and specialist consultation on Aquatic Resources Management for sustainable Livelihoods of poor people
4. Communications planning	• NACA • MRC • FAO • DFID	Developing a communication plan to build a shared understanding of issues and options
	• NACA • DFID • FAO • VSO	Developing an interactive web-site for regional information sharing
5. Policy influence	• MOFI • NORAD • MPI • DFID • MARD • DANIDA • MOLISA • AIT • VWU • NACA • DARDs • FAO • ACIAR • IDRC	Supporting the development of pro-poor policy in the Ministry of Fisheries
	• DoF • MRC • FAO • OXFAM • UNDP • DFID	Supporting the development of sub-decree on Community fisheries

ANNEX 13 ORGANISATIONAL STRUCTURE OF STREAM

COMPONENTS	PERFORMANCE OBJECTIVE	HUMAN RESOURCES	ROLE	LEADER	TEAM MEETINGS
Regional					
NACA Governing Council	• Successful implementation of rural development policies	• National government representatives • FAO, donor and other representatives	• Strategic overview • Informing policy at national and regional levels	• Chairman	• Annual meetings
STREAM Co-ordination	• Strategy developed and reviewed re Poverty and Livelihoods, Communications, Information Resource Development, Policy Support, Special Issues, and monitoring and evaluation • Human, financial & material resources sourced, monitored and evaluated • Transparent accounting • Regional learning and communications platform	• National agency partners & STREAM Co-ordinator (50%) • NACA core staff member (Rural Dev. Specialist) • Senior Support Officer	• Co-ordinate programme strategy and chair strategic planning team • Lead Livelihoods & Communications Divisions • Provide overall management of human, financial and material resources • Liase with donor and development agencies, intergovernmental, and non-government organisations • Contribute to (lead as necessary) policy support and special issue teams • Edit key communications output (including web-based materials) • Lead Information Resource Division with support staff and task specialists as necessary • Sec. to STREAM Co-ordinator (50%) & strategic planning team (10%) • Monitor & report human, financial & material resources (40%)	• STREAM Co-ordinator	• Six-monthly Strategic Planning meeting • Monthly team meeting re monitoring and evaluation • Annual external audit • Annual matrix meeting of divisions and agencies
Functional					
Poverty & Livelihoods	• Understanding of livelihoods of poor improved • Lessons shared nationally & regionally	• National agency partners & STREAM Co-ordinator (25%), with support from Senior Support Officer and task specialists as necessary	• Co-ordinate Poverty and Livelihood Division manage awareness raising of Livelihoods approach and analysis, support capacity building	• STREAM Co-ordinator	• With national agency partners as appropriate to activities. • Annual matrix meeting

Information Resource Development	• Improved sharing of existing practices and processes • New learning stimulated, approaches and resources developed and piloted, and materials available for extending information • New learning resources and materials, and lessons learned, shared nationally and regionally.	• Permanent Division Co-ordinator (NACA core staff member - Rural Development Specialist) • Support Officer (50%)	• Collate and review existing practices and processes • Stimulate new learning • Liase with information providers such as research organisations • Contribute to (lead as necessary) new pilot approaches and materials. • Develop key communications output (including web-based materials) • Responsible for documentation • Secretary to Division	• NACA core staff member (Rural Development Specialist)	• Six-monthly team meeting • Annual matrix meeting
Communications	• Communication promoted (networking facilitated, approaches monitored and evaluated, information extended) • Lessons shared nationally & regionally	• National agency Communication Co-ordinators • STREAM Co-ordinator (25%) with Senior Support Officer and task specialists as necessary • Support Officer (50%) • NACA core staff member (Computing & Database specialist - 10%)	• Promoting & managing dual communication of management matrix. • Build effective partnerships in support of STREAM objectives; develop and support communications network; plan and organise workshops and meetings around lesson learning. • Support network communications & monitoring and evaluation reporting • Computing and web-based materials support	• STREAM Co-ordinator	• Monthly electronic meetings of Communications Co-ordinators • Annual matrix meeting
Policy support	• Policy, institutional and process changes designed to better serve objectives of poor aquatic resource users are supported	• Special purpose teams and consultant task specialists as appropriate	• TOR as appropriate • Consultants competitively recruited (using standardised rates) where opportunities to influence policy, institutional and process changes to better serve objectives of poor aquatic resource users are identified	• STREAM Co-ordinator	• As appropriate
Special issues	• Special issues identified and managed	• Special purpose teams consultant task specialists as appropriate	• TOR as appropriate • Consultants competitively recruited using standardised rates.	• STREAM Co-ordinator	• As appropriate
National					
National co-ordination	• Capacity and knowledge development to support the livelihoods of poor people is co-ordinated and shared at national and regional level. • Lessons shared nationally & regionally	• Broad coalition of partners from line agencies, civil society, research, private sector, and producer groups	• Manage contribution to and benefits from regional learning and communication platform. • Determine strengths and objectives in relation to support for Poverty and Livelihoods, Communications, Information Resource Development, Policy support, Special issues, and monitoring and evaluation.	• Communications Co-ordinators	• Regular, nationally determined • Annual matrix meeting

ANNEX 14 GANTT TIME CHART AND MILESTONES

STREAM initiative activities	Start up	Yr1	Yr2	Y3	Y4	Y5
Start-up activities						
a. Recruit regional coordinator, Senior Support Officer, Support Officer	■					
b. Recruit national co-ordinator in each STREAM partner country	■					
c. Establish Strategic Management Team and Functional Units	■					
Activities to achieve Output 1						
1.1 Identify poor more vulnerable aquatic resource users in STREAM countries		■				
1.2 Develop processes and learning materials for capacity building in livelihood approaches		■				
Activities to achieve Output 2						
2.1 Establish, administer and co-ordinate start up of accountable grant		■				
2.2 Administer accountable grants (e.g. Video diaries, Field visits, Exchanges, Secondments)		■				
2.3 Collate and review strategies, practices and processes for managing aquatic resources		■	■	■	■	■
2.4 Collate and review strategies, practices and processes for learning and communicating		■	■	■	■	■
Activities to achieve Output 3						
3.1 Build network of national communication hubs		■				
3.2 Develop and launch STREAM Web-site		■				
3.3 Develop and launch STREAM newsletter		■				
3.4 Instigate media monitoring/issue alerting monitoring		■				
3.5 Support development of *significant change* monitoring and evaluation of approaches		■				
3.6 Support Information access surveys		■				
3.7 Support development of novel extension mechanisms			■	■	■	■
3.8 Launch 2-page journal[1]		■	■	■	■	■
3.9 Continuous broad-based national and intra-regional networking sharing knowledge via communication		■	■	■	■	■
3.10 Annual regional meetings		■	■	■	■	■
3.11 Translate media into local language		■	■	■	■	■
3.12 Regional workshops		■	■	■	■	■
3.13 National workshops		■	■	■	■	■
Activities to achieve Output 4						
4.1 Host strategic research & development planning		■	■	■	■	■
4.2 Support capacity building from one partner to another		■	■	■	■	■
4.3 Monitoring and evaluation of approaches		■	■	■	■	■
MILESTONES	**A**	**B**	**C**	**D**	**E**	**F**

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[1] A journal in simple language of key issues written by scientists for aquatic resource users and support provided to community level partners to produce documentation on their (successful) experiences. Each article is up to 2-pages.

A 14.1 The above Gantt Chart is the sequence of STREAM activities as envisaged at the present. However, the environment in which STREAM will operate is characterised by flux and change. Therefore, yearly milestone events, involving National STREAM Co-ordinating Teams, will mark the progress and development of the initiative as it moves forward, enabling it to modify its strategic direction and the balance of outputs.

A 14.2 Milestones:

A. Strategic management team and national co-ordinators for Cambodia and Vietnam in place by end of start up.

B. Poor more vulnerable aquatic resource users identified in Cambodia and Vietnam and reported widely; Learning materials for supporting livelihood analysis developed with sections dealing with the Vietnamese and Cambodian contexts; Website launched for STREAM; newsletter launched for STREAM available from website and as hard copy distributed by national hub; Monthly media monitoring system in place available on website and e-mail/hard copy to partners via national hub; Participatory process proposes *significant change* M&E system for testing; Surveys of information access by poor aquatic resource users conducted for Vietnam and Cambodia; Accountable grant administration system developed by partners and undergoing testing in Cambodia and Vietnam; Prototype best-practice database developed on web-site with established links to information providers and facilitated access system developed for piloting by national knowledge exchange hubs. STREAM network contributes to specific strategic research and development planning initiatives in the region by external (e.g. DFID Research programmes) or regional players (e.g. MRC, FAO).

C. STREAM recruits 2 new partner countries by year 2 end; Lesson sharing instituted through the STREAM initiative with at least 2 key initiatives in the region built on capacity building from one STREAM partner to another; STREAM journal launched and reviewed after 6 months by subscribers from all levels of stakeholders; Regional pilot of a participatory monitoring and evaluation systems in place for aquatic resource management recommendations;

D. STREAM recruits 2 new partner countries by year 3 ends; Matrix meeting assumes joint decision-making control with STEAM Management Team of management of STREAM initiative.

E. To be developed.

F. To be developed.

ANNEX 15 STREAM INPUTS

Fund	Activity				
	Strategic management	Capacity building	Learning initiatives	Communication matrix	Communication activities
Start up/ catalytic funding	1. Establish Strategic Management Team and units for: • Poverty & livelihoods • Info. Resources Development • Communications • Policy Development • Special Issues. 2. Establish, administer and co-ordinate start up of accountable grant	1. Develop processes and learning materials for capacity building in livelihood approaches	1. Identify poor more vulnerable aquatic resource users in STREAM countries	1. Build network of STREAM National Co-ordinating Teams 2. STREAM web-site development 3. STREAM database development 4. Launch STREAM newsletter 5. Instigate media monitoring/issue alerting	1. Support National STREAM pre-launch workshops and partner selection 2. Support launch of STREAM initiative
Core funding - a common Trust Fund	1. Collate and review strategies, practices and processes for: • Managing aquatic resources • Learning • Communicating 2. Host strategic research & development planning	1. Support to capacity building from one partner to another	1. Support development of *significant change* monitoring and evaluation approaches 2. Support development of innovative extension mechanisms 3. Launch 2-page journal	1. Continuous, broad-based national and intra-regional networking, sharing knowledge via communication matrix 2. Matrix meetings 3. Translate media into local languages	1. Regional workshops 2. National workshops
Human resources support	1. One salaried STREAM Co-ordinator 2. One salaried Senior Support Officer 3. One salaried Support Officer	1. Contracted trainers	1. Contracted researchers	1. One salaried STREAM National Co-ordinating Team Co-ordinator in each STREAM partner country	1. Contracted facilitators
Accountable grant[1] (Examples of possible use)			1. Video diaries 2. Information access surveys 3. Community level partners document experiences 4. Innovative extension materials development		1. Field visits 2. Exchanges 3. Secondments 4. Support national and regional workshops organized by partners

1 Work supported by a grant must be:
• Designed managed, and owned by partner organisations and their beneficiaries
• Coherent with the work of other development organisations in the locality
• Financially, technically, socially and environmentally sustainable
• Contain identifiable objectives within a limited timeframe and indicators of achievement to measure progress and impact.

INPUTS (AND INDICATIVE 2-YEAR STREAM START-UP BUDGET, US$000'S)

	Unit	Yr 1	Yr 2	Budget Yr 1	Budget Yr 2	Budget total
1. Human Resources						
• STREAM Co-ordinator	Person/year	1	1	70	74	144
• Senior Support Officer	Person/year	1	1	24	25	49
• Support Officer	Person/year	1	1	15	16	31
• STREAM National Co-ordinating Team Co-ordinator in each STREAM partner country	Person/year	2	4	24	50	74
• Rural development specialist	Person/year	0.7	0.7	20	20	40
• IT support	Person/year	0.5	0.5	3	3	6
• VSO's	Person/year	2	4	40	84	124
• Contracted trainers	Person/month	20	20	20	21	41
• Contracted facilitators	Person/month	5	5	12	13	25
Sub-total				**228**	**306**	**534**
2. Office and running costs						
• Materials and supplies	Office annual unit	3	5	5	9	14
• Office equipment	Miscellaneous			8	8	16
• Travel (transport & subsistence)	Week	100	140	36	75	111
• Office and communications	Office annual unit	3	5	36	63	99
Sub-total				**85**	**155**	**240**
3. Partnership activities						
• Livelihood Support Initiatives	Units	4	10	80	120	200
• Workshops	Miscellaneous			10	22	32
• National meetings	Miscellaneous			20	43	63
• Regional meetings	Miscellaneous			30	32	62
Sub-total				140	217	357
4. External monitoring & evaluation	Person/month	**1**	**1**	**20**	**21**	**41**
Sub-total				**20**	**21**	**41**
Total				**473**	**699**	**1,172**