
Evaluation and Uptake Promotion of Data Collection Guidelines for Co- Managed Fisheries (R8462):

FINAL TECHNICAL REPORT



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Front Cover: Staff of Lao fisheries agencies (Living Aquatic Resources research Center [LARReC] and Department of Livestock and Fisheries [DLF] explore local knowledge of fishers on fisheries in deep pools of the Mekong, Khong island, Champassak Province. Photo by: Sommano Phounsavath.

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1 Executive Summary

In spite of the increasing shift towards co-management, the use of data and information remains fundamental to the management process but now data collection systems or programmes must be designed to support the diverse needs of a range of potential stakeholders, tailored according to their objectives, capacity and available resources. Mechanisms and approaches for the collection and sharing of data and information to develop and sustain co-managed these fisheries are, however, conspicuously lacking in most developing countries. The FMSP funded project R8285: *Fisheries Data Collection & Sharing Mechanisms for Co-management* from March 2003 to February 2005, in response to help bridge this gap.

This project employed a series of participatory research activities to develop guidelines for designing data collection systems to meet the needs of co-managers. The project collaborated with fisheries institutions and donor funded projects that were actively engaged or interested in designing or improving data collection systems to support co-management either as part of their mandate or under their own projects and programmes in countries including Laos, Cambodia, Thailand, Vietnam, Bangladesh, Uganda, and Tanzania. The guidelines, which FAO agreed to publish these *Technical Guidelines* in their *FAO Fisheries Technical Paper Series*, provide a conceptual framework and an eight-stage participatory design and implementation process.

Feedback concerning the utility of the Guidelines following field testing in Udon Thani Province, Thailand, under the MRC Fisheries Programme in January 2005 was very positive. The guidelines proved effective for identifying common data and information needs among the stakeholder groups involved and helped them identify and agree upon a data and information collection and sharing strategy.

The purpose of this project (reported here) was to further evaluate the utility of the guidelines developed by R8285 through a series of further evaluations comprising field-testing activities and desk-based reviews, improve them accordingly, and promote them widely to target stakeholders using a range of communications products and media.

Further evaluations of the Guidelines were undertaken by project partners with resource users in Udon Thani, Thailand and in eight locations in seven Districts in Bangladesh under the DFID-funded Community-Based Fisheries Management (CBFM) and Fourth Fisheries Projects (FFP) in Bangladesh.

In Bangladesh, the data collection systems developed and currently being piloted under the FFP, will, if successful, help improve the management of fisheries resources at five locations in four Districts (Thakurgaon, Rangpur, Khulna and Mymensingh). The fisheries-dependent livelihoods of members of an estimated 1100 households from 56 villages are expected to benefit from this improved management performance including sustainable, less variable landings from their capture fisheries, increased production from their stocked waterbodies and increased income.

Designs for a community-based data collection and sharing systems have also been developed under the CBFM project with project staff, members of participating fisher communities, and staff from the DoF at sites in three Districts (Jessore, Tangail and Sunamganj). These designs include details of potential data collection tools and sources; and communication networks for sharing information among resource users, community-based organisations (CBOs), and administrative sub-divisions of the DoF. The WorldFish Centre, responsible for administering the CBFM Project, expect that these preliminary designs can be refined and implemented to ensure that stakeholder information needs in

these and other sites can be sustained beyond the life of the CBFM project potentially benefiting more than 20,000 participating fishing households, through improved management performance.

In Thailand, it is anticipated that the data collection and sharing system currently being implemented at the Huay Luang Reservoir, is, through improved management of the reservoirs resources, expected to directly benefit the livelihoods of more than 700 full-time fishers. Approximately 18,000 part-time fishers; water users; and 8 schools in three sub-districts are also anticipated to benefit indirectly from the shared information, and improved utilization and management of the reservoir resources.

Other co-management stakeholders in these two countries are also expected to benefit from the improved data collection systems, particularly the DoFs and their administrative sub-divisions. Improved data collection systems will improve their capacity to formulate, implement and evaluate policy and development plans aimed at sustaining or increasing production and improving the livelihoods of the poor.

The feedback received from these field applications was used to improve and refine the Guidelines developed under R8285. These *Technical Guidelines* now form the second (Part II) of a two-part FAO Fisheries Technical Paper. The draft Field Guide, substantially revised and re-named *A Practical Guide*, now forms Part I of this Paper aiming to provide non-technical advice to field practitioners working alongside resource users. This FAO Fisheries Technical Paper is, at the time of reporting, in press, and has been assigned the serial number 494/1&2. The Paper is expected to be published and distributed by FAO by December 2005.

A policy document has been produced that aims to raise awareness among policy makers of the importance of data collection systems in the context of the management process; highlight the challenges faced by those involved in designing and implementing data collection systems or programmes; and describe how these challenges might be addressed by the application of the Guidelines. These challenges and outcomes are illustrated with the experiences and lessons learnt by project partners during the application of the Guidelines in Thailand and Bangladesh.

These main project outputs were, and continue to be, promoted via a range of communication products and activities. The communication products include flyers and leaflets, a poster, a website and weblinks, newsletter articles, oral presentations at meetings and seminars, and emails. These products and activities have raised awareness of the importance of data collection systems to support the co-management process, and the availability of the FAO Guidelines, among more than 4,500 target stakeholders.

Target stakeholders that have used the Guidelines to date (i.e. project partners) report an improved understanding of the design of data collection systems and that the Guidelines are either "useful" or "very useful". All agreed that the guidelines would be useful for other stakeholders involved in co-management. The knowledge, attitude and practice of other target stakeholders will be reported in the FMSP annual report following the distribution of the FAO Guidelines to UN member Directors of Fisheries; Regional fisheries Officers and Fisheries Departments.

From their participation in the evaluation of the Guidelines and the development of new or improved data collection systems, it is estimated that a least 300 individuals representing four different stakeholder categories have an improved knowledge and capacity to manage fisheries resources under co-management partnerships and design appropriate data collection and sharing systems.

2 Background

Fisheries, particularly the small-scale type characterised by the use of low technology fishing gear over a limited range, are fundamentally important in many regions of the developing world, providing important sources of protein and livelihoods for coastal and rural communities.

The management of these fisheries has been undergoing a paradigm shift during the last two decades moving away from situations of laissez-faire management, revenue orientated access, or a focus on maximising resource and economic output using rules or regulations set and enforced by a centralised (government) administrative authority, towards more decentralised, collaborative and participatory approaches to sustainable management and development.

This shift towards co-management comes as policy makers increasingly recognise that the underlying failures associated with the earlier approaches have often social, economic and institutional, rather than technical, origins. Moreover, the very diverse nature of many small-scale fisheries frequently characterised by multispecies assemblages exploited seasonally by dispersed resources users employing numerous different gear types, often makes the application of conventional “top-down” management approaches and models both inappropriate and unrealistic.

The use of data and information remains fundamental to the co-management process despite this change in emphasis, but now data collection systems or programmes must be designed to support the diverse needs of a range of potential stakeholders, tailored according to their objectives, capacity and available resources.

Cost-effective mechanisms for the collection and sharing of data and information to develop and sustain the (co-)management of these fisheries are, however, conspicuously lacking in most developing countries. This development problem is exemplified by a review by Coates (2002) of inland capture fishery statistics in South East Asia; one of DFID's most important geographic targets. The review found that none of the existing data collection programmes in the region derive statistics from direct observations, many suffer from gross misreporting, fail to take account of ‘informal sectors’ particularly important to the poor, and at worst, are based upon guesswork. Resulting discrepancies between officially reported catches and estimates based upon independent surveys vary by a factor of between 4 and 21. Many of the shortcomings reflect the absence of active management regimes, adequately formulated and recorded management plans or a fundamental lack of understanding of the purpose of collecting statistics. These are exacerbated by the complex and dispersed nature of the fisheries and the general paucity of resources and institutional capacity in the region. In many countries, statistics were reportedly compiled simply to satisfy FAO or national reporting responsibilities. Whilst all countries included in the review recognise the importance of their inland capture fisheries to the livelihoods of poor rural communities and their contribution to national food security, uncertainty remains as to how to redress the inadequacies of their existing monitoring and evaluation systems.

Similar conclusions were drawn in September 2002 at the FAO/MRC Ad hoc Consultation on New Approaches for the Improvement of Inland Capture Fisheries Statistics in the Mekong Basin. Whilst some tentative recommendations for potential improvements to existing systems were made, explicit details of cost-effective programmes to meet the needs of all stakeholders, particularly those of local fishers under co-management regimes, remained outstanding.

Significant demand for advice and guidelines for designing and implementing data collection systems to support the co-management of fisheries resources was also highlighted as part of DFID Fisheries Management Science Programme (FMSP) development activities (see MRAG 2002). This review identified a number of key elements for consideration including identification of key information requirements for co-management, and evaluation of alternative cost-effective mechanisms for collecting data such as participatory modes.

This demand was also reflected in several ongoing or planned projects, programmes and associated activities with a focus on improving data and information for co-management such as the DFID-funded Regional Fisheries Information System (RFIS) Programme for the Southern African Development Community (SADC) and the Integrated Lakes Management (ILM) Project in Uganda. The FAO and Mekong River Commission (MRC) are also in the process of developing programmes to strengthen fisheries information systems in the Lower Mekong Basin with the aim of elucidating the role of inland fisheries in national economies and rural livelihoods of the poor.

These programmes are intended to provide models for future work on improving fisheries statistics in other countries advocating co-management policies. The MRC is also working with communities and department of fisheries (DoFs) staff at more than 20 project sites to establish information requirements and feedback systems to support evolving co-management arrangements in the region. Similar activities are underway as part of the WorldFish Centre's ongoing 'Fisheries Co-Management Research Project (FCMRP)', which is working closely with local communities at sites in Bangladesh and Cambodia where participatory data collection systems are being piloted.

Whilst a vast pool of literature already exists that can help guide co-managers design and implement data collection programmes to support co-management, much of it has been written in the context of other sectors or with little emphasis on designing systems specifically for co-managed fisheries.

Standard field guides for designing fisheries monitoring programmes published by the FAO over the past three decades include Brander (1975); Bazigos (1983); Caddy & Bazigos (1985); Flewwelling (1994) and FAO (1999) and Stamatopolous (1993).

FMSP project R7042 described by Halls *et al* (2001) reviewed co-management data and information requirements, and data collection sources methods and tools to support the co-management of fisheries resources drawing upon recently published co-management guidelines (Hoggarth *et al.* 1999) and synthesizing much of the earlier FAO literature. The conceptual framework for sharing data and information and coordinating management activities among fisher communities described in this report was further developed by Halls *et al.* (2002) under FMSP project R7834. Easily measurable variables describing the interdisciplinary attributes and performance indicators for co-managed fisheries were identified and multivariate approaches for developing models of co-management performance are proposed on the basis of a wide range of hypotheses. These literature resources offered excellent entry points for considering and formulating guidelines alongside the knowledge, experiences and voiced demand of participating local and higher-level management institutions.

Participatory approaches or participatory monitoring and evaluation (PM&E) offer considerable scope in the context of data collection and sharing systems for co-management (Estrella & Gaventa, 1998; Guijt (1999). Whilst they are often regarded as distinct approaches synonymous with co-management and community-based initiatives, they often employ many of the same sources and methods as conventional enumerator-based methods. What distinguishes the two approaches is not necessarily the sources

and data collection methods employed, but the extent to which local stakeholders are involved in choosing or selecting these sources and methods, the variables to be monitored, and ultimately benefit from the outputs and the act of participating.

As well as participation, the concept of learning is a major principle of PM&E where emphasis is on practical 'action-orientated' learning. Participants learn from experience, and thereby gain a greater understanding of the factors that affect their outcomes. When multiple stakeholders are involved in the process, the PM&E also encourages and promotes negotiation and builds trust. The process is regarded as empowering and encourages participants to increase their understanding of their own roles and responsibilities (Estrella & Gaventa 1998).

In spite of the fact that the approach is often viewed as a prerequisite for the entire process of implementing decentralised small-scale fisheries co-management, most fisheries applications have been confined to development or research projects, for example Ticheler & Kolding (1998). Berkes et al (2001) describe common methods and approaches employed in fisheries research adapted from Chambers (1997) including seasonal calendars, participatory mapping, transects and observation participant observation, interview approaches and focus group discussions. Other, approaches such as fish consumption surveys (Bayley & Petrere, 1989) are often appropriate to meet the data requirements of particularly groups of stakeholders.

Project R8285

The FMSP funded project R8285: *Fisheries Data Collection & Sharing Mechanisms for Co-management* from March 2003 to February 2005, in response to this demand.

With an emphasis upon participatory research involving key stakeholders and institutions from all management and advisory levels, including DFID bilateral projects and programmes, the purpose of the project was to identify, develop and evaluate participatory data collection and sharing mechanisms (systems) to improve the (co-) management of capture and enhancement fishery resources important to the livelihoods of the poor. The strong emphasis upon participatory research helped build knowledge and capacity whilst ensuring that the project outputs were demand-driven, thereby maximising the likelihood of their uptake by target institutions.

It soon became apparent during the project planning period that a generic design for a data collection and sharing system for co-management was neither appropriate or achievable. Instead, partners agreed that a more appropriate main project output would be a set of guidelines for developing context-specific systems tailored to meet local needs and capacity.

With this aim, the project employed a series of participatory research activities with the following collaborating institutions and projects (and their respective partners) representing a range of stakeholders operating at different levels in the management hierarchy (e.g. local, sub-national, national, and regional): MRAG Ltd, London; FAO, Rome; World Fish Centre, Malaysia and Bangladesh [Community Based Fisheries Management (CBFM) Project and Fisheries Co-management Research Project (FCMRP)]; Mekong River Commission (MRC) [Mekong River and Reservoir Project]; The DFID-funded Sustainable Fisheries Livelihoods Project (SFLP); The DFID-funded Integrated Lake Management (ILM) Project, Uganda; and the DFID-funded Regional Fisheries Information System (RFIS) Project [including the Tanga Coastal Zone Conservation and Development Project]. All the research partners were actively engaged or interested in designing or improving data collection systems to support co-management either as part of their mandate or under their own projects and programmes in countries including Laos, Cambodia, Thailand, Vietnam, Bangladesh, Uganda, and Tanzania.

Project collaborators prepared “System Requirement Reports” (SRR) using a pre-defined format to report details of existing data collection systems, stakeholder needs, capacity, available resources, and opportunities. A total of 18 reports, downloadable at <http://www.fmisp.org.uk/r8285.htm> were prepared on the basis of literature reviews, focus group discussion, consultation exercises and workshops involving staff from regional management bodies, departments of fisheries and associated research institutions, local management institutions, and resource users. This process not only helped build capacity but aimed to ensure that the project outputs, including these guidelines, were demand-driven, maximising the likelihood of their uptake by target institutions. The content of the reports were presented, discussed and synthesised at the project’s ‘Guidelines Development Workshop’ held at the MRC headquarters in Phnom Penh, in April 2004, attended by more than 25 representatives of the collaborating institutions and their project/programme partners (see Guidelines Development Workshop Report at <http://www.fmisp.org.uk/r8285.htm>).

The recommendations arising from this workshop, together with a synthesis of the relevant literature and outputs from earlier FMSP research, particularly projects R7042, R7335, R7834 and R8293 formed the basis of the first draft of the Guidelines.

The guidelines provide a conceptual framework and an eight-stage participatory process for designing data collection and sharing systems for co-management involving stakeholder analysis, local management plan formulation, identification of common stakeholder data needs and shortfalls, data collection and sharing strategy design, the development of information networks, the design of data recording and management systems, and finally implementation and refinement.

These Guidelines are intended to enable fisher community members to make informed and empowered choices and decisions concerning the co-management of their resources to improve their livelihoods. The guidelines will also provide national fisheries departments with the means to generate relevant data and information to effectively formulate and evaluate (co-management) policy and development plans, meet national and international reporting responsibilities, and support and coordinate local management activities. To promote uptake, FAO agreed to publish these *Technical Guidelines* in their *FAO Fisheries Technical Paper Series*.

The utility of the guidelines was assessed at the Huay Luang Reservoir in Udon Thani Province, Thailand, under the “Management of Rivers and Reservoir Fisheries in the Mekong Basin Component (MRRF)” of the MRC Fisheries Programme in January 2005. Here, a two stage workshop was implemented with 55 representatives of local resources users, the local management institution (Or Bor Tor) and administrative levels of government. The guidelines proved effective for identifying common data and information needs among the stakeholder groups and helped them identify and agree upon a data and information collection and sharing strategy which was summarised graphically. This multi-stakeholder planning exercise also raised awareness among government bodies of the widespread interest of resource users to diversify their livelihoods to include tourism-related income generating activities.

The feedback concerning the utility of guidelines received from the project partners was very positive. However, there was a consensus that a non-technical version of the guidelines is required to provide a route-map and a more “gentle introduction” to the technical guidelines, target particularly at intermediaries working alongside resource users to enable them to fully utilise the relevant and helpful tools contained in them. To meet this need, a *Field Guide* based upon the Technical Guidelines was produced in the closing stages of the project as an additional project output.

3 Project Purpose

The purpose of this project was to further evaluate the utility of the guidelines developed by R8285 (see above) through a series of further evaluations comprising field-testing activities and desk-based reviews. The results of these evaluations would be used to revise and improve the technical guidelines and to develop further the non-technical version to address the needs identified under R8285 (see above). A policy brief would also be produced, aimed at raising awareness of the importance and utility of the guidelines for generating relevant information for policy and development planning and evaluation purposes. These three main outputs were to be promoted widely via appropriate media to relevant co-management stakeholders at all levels to help them implement, monitor and evaluate their management and development activities more efficiently and effectively and thereby improve fisheries dependent livelihoods of the poor.

4 Outputs

The project aimed to generate three main outputs:

1. Improved and widely field-tested *Technical Guidelines* for designing and implementing data collection and sharing systems for co-managed fisheries important to the poor applicable to both marine and inland fisheries. These are to be published in the FAO Fisheries Technical Paper Series and promoted via a variety of channels and media to target institutions.
2. Under DFID bilateral country and other donor-funded projects in Bangladesh, Lao PDR, Thailand, Vietnam where the guidelines were to be applied, established or improved data collection and sharing systems supporting co-managed fisheries important to the poor.
3. At least two concise, non-technical and highly visual versions of the guidelines containing lessons learnt from the application of the full technical guidelines, tailored to meet the needs of different target communication stakeholders, widely promoted via a variety of channels and media (see communication matrix attached) and made available to Project R8470.

Details of the delivered outputs are described below:

4.1 Field Tested and Improved Technical Guidelines

Based upon the outcome of evaluation activities described in Section 5 below, an improved version of the Technical Guidelines has been produced. These Technical Guidelines now form the second (Part II) of a two-part *FAO Fisheries Technical Paper* (see Annex 1). The re-written *Field Guide* (see Section 4.3 below), re-named *A Practical Guide*, now forms Part I of this Paper (also see Annex 1). The *FAO Fisheries Technical Paper* is, at the time of reporting, in press, and has been assigned the serial number **494/1&2**. The Paper is expected to be published and distributed by FAO by December 2005.

Significant changes, listed below, were made to the Technical Guidelines (Part II) in response to the feedback received from the project's collaborators following their evaluation activities. These evaluation activities and the subsequent recommendations to improve the guidelines are summarized in Final Guidelines Evaluation Workshop Report (Annex 2).

- Large parts of Section 3 *What to Collect and Share*, have been re-written or revised to improve understanding of data requirements in relation to management

plan formulation, implementation and evaluation. Further examples of typical data variables required for monitoring and evaluation have been added. Additional sections have been written in Section 3.5 covering data analysis and interpretation.

- The process of identifying common data requirements with stakeholders described in Section 5 has also been elaborated and illustrated further by means of additional tables and figures.
- Lessons and experiences generated during the field evaluations by project partners have been added, often highlighted in text boxes, and including figures illustrating information sharing networks.
- Most of the figures in the guidelines have been re-drawn and table formats modified.

The Part II: Technical Guidelines begin by identifying four basic categories of information that are typically required to support the information-dependent management roles that key stakeholders might typically take responsibility for under co-management arrangements, and illustrate important pathways to facilitate information delivery and exchange. These four categories are: (1) Information to formulate and evaluate national fisheries policy and development plans including performance of the co-management policy itself; (2) information to formulate and coordinate management plans; (3) information to implement management plans including enforcing rules and regulations and resolving conflicts and (4) information to evaluate and improve local management plans.

Examples of data types and variables that might be selected by co-managers corresponding to these four main categories of information are provided in Section 3 together with a description of important factors that will influence their selection. Section 4 provides a brief overview of the types of data sources and collection methodologies that might typically be available or applicable. Important concepts including participatory monitoring and evaluation, sampling and stratification are explained along with important factors to consider when choosing among different sources and methods. Summary tables provide further guidance on what sources and methods might be appropriate for each data type of interest.

Finally, Section 5 describes an eight-stage participatory design process involving stakeholder analysis, local management plan formulation, identification of common stakeholder data needs and shortfalls, data collection and sharing strategy design, the development of information networks, the design of data recording and management systems, and finally implementation and refinement. The section cross-references material presented in Sections 1-4 and includes links to other sources of useful information and advice.

4.2 Established or Improved Data Collection Systems

The project had planned to establish or improve data collection systems in Bangladesh and in some Lower Mekong Basin countries (Thailand, Vietnam and Lao PDR) as part of the field-testing activities with project partners (see Section 5). These field testing activities were to be undertaken in the LMB under the MRC's MRRF Project without funding support from R8462. Because of other MRRF project commitments and activities, field testing in the LMB was undertaken only in Thailand.

4.2.1 Fourth Fisheries Project Bangladesh

In Bangladesh, the guidelines have been used to begin the development a data collection and sharing systems that aim to meet the needs of the GoB Department of Fisheries

(DoF) and fisher communities (represented by Fisheries Management Committees-FMCs) participating in the DfID-funded Fourth Fisheries project (FFP). Fisheries data collection is currently the responsibility of DoF staff, but staff resources are limited and therefore there has been interest in developing participatory monitoring programmes with resource users beyond the life of the project.

Pilot data collection and sharing systems were developed through a series of workshops with the participation the DoF, fisheries officers, NGO's supporting the implementation of the FFP, and FMCs and resource users from five waterbodies located in the north-west, north-central and south-west regions of the country (Table 1). The systems aim to provide the necessary information required to assess the impact and performance of community-based management based largely on data collected by resource users rather than DoF Staff.

Table 1 Details of five fisheries supported by the FFP involved in the development of the pilot data collection and sharing systems

Site	Tangaon River	Masankura Mora River	BSKB-Kalia Beel	Old Brahmaputra River	Borobila Beel
District	Thakurgaon	Rangpur	Khulna	Mymensingh	Rangpur
Number of villages involved	8	2	17	7	22
Number of households that fish for an income	133	136	351	143	337
Number of professional fisher households	75	126	125	85	153
Number of occasional fisher households	58	10	226	58	184
Number of subsistence fishers	37	9	104	54	20

The eight stage design process described in the guidelines was used to first identify stakeholder roles in relation to key management activities. Previous data collection systems were reviewed including their strengths and weaknesses. Information flow was found to be generally only upward with no feedback to local fisheries officers or community. There was little or no understanding of the use of these data at the local level.

Using their existing management plans and agreed roles and responsibilities, stakeholders successfully identified their information needs, selected indicators, and reached agreement upon who should collect what and share with whom. Agreement was reached on which data collection tools and sources could form the basis of an appropriate data collection system. This also included agreement on the frequency of data collection.

The process was enlightening and revealed that in some cases data and information required by the DoF was already being collected by the fisher communities. For example, fishermen were already recording their catch and income data with notebooks which they agreed to share, after summarizing it, with DoF staff at monthly meetings. Agreement was also reached to compare the catch estimates generated by the FMC and the DoF. Further details of the design and development activities, including the agreed data

collection and sharing systems for each site can be found in the Evaluation Reports (see Sultana (2005) in Annex 3).

The participatory design process helped raise awareness of the need for information among fishers; helped local managers revise, implement and evaluate their management plans; emphasised the importance of local monitoring in shaping policy; and improved the relevance of and efficiency of the existing data collection systems.

The systems are currently being piloted at the five sites and will be evaluated in the near future by the FFP. If successful, the systems will initially benefit the 1100 households from the 56 villages that depend upon fishing for income at these five locations. Further systems may then be designed with the remaining forty or so fisher communities currently supported by the FFP, and implemented beyond the life of the project.

4.2.2 CBFM Project Bangladesh

Similar to the FFP, funding for the CBFM project will draw to a close in the near future (June 2006). Sustaining the existing management activities at the 115 waterbodies located throughout Bangladesh that are currently included in the project will therefore soon become the responsibility of both the resource users from the 23,000 participating fishing households, and the DoF. These responsibilities will include monitoring and evaluating the outcomes of their co-management activities. The CBFM project is therefore interested in developing sustainable data collection and sharing systems that can meet the needs of both fisher communities and the DoF beyond the life of the CBFM project.

In June 2005, the Guidelines were field tested with up to 50 stakeholders via a series of workshops at three CBFM sites in Jessore, Tangail and Sunamganj. Using the guidelines, stakeholders representing the DoF, partner NGOs (PNGOs), Community Based Organizations (CBOs), Local Government Engineering Departments (LGED), the Bangladesh Water Development Board (BWDB) discussed and agreed upon stakeholder roles and responsibilities by means of small group discussions, and a voting approach. Results were summarized using tables similar to the format of Table 1 included in the Guidelines. Stakeholders were also able to identify detailed lists of information requirements to support these roles and responsibilities including explanations for why this information is needed.

In some cases, stakeholders also were able to proceed to stages 5 and 6 of the design process, focusing mainly upon identifying common data needs and potential data collection tools and sources using tables provided in the Guidelines. Potential networks for sharing information among stakeholders were also identified (Figure 1). Full details of the design and evaluation activities are described by Kashem *et al* (2005) (see Annex 3).

It is expected that these preliminary designs can be refined and implemented to ensure that the information needs of local communities at these three sites, and government stakeholders can be sustained beyond the life of the CBFM project. The knowledge and capacity gained by the government stakeholders during this process will also help them to design and implement other systems with the remaining fisher communities currently supported by CBFM Project.

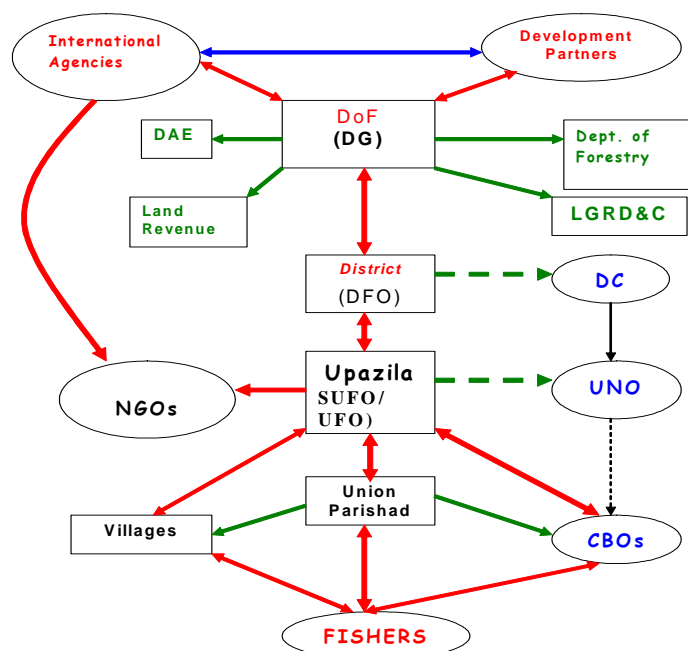


Figure 1 The information sharing network developed by stakeholders at Sunamganj

4.2.3 MRC's MRRF Project, Thailand

The design of a data collection and sharing system with key stakeholders involved in the co-management of the Huay Luang Reservoir in Udon Thani Province, Thailand, began in January 2005 under the “Management of Rivers and Reservoir Fisheries in the Mekong Basin Component (MRRF)” of the MRC Fisheries Programme to help evaluate the utility of an earlier version of the Guidelines developed under Project R8285.

Local stakeholders at the reservoir had identified that they lacked adequate information for management and planning purposes. Furthermore, whilst some relevant information was being regularly collected by government organizations, there were no mechanisms in place to share the data.

A two-stage workshop was implemented with 55 representatives of local resources users, the local management institution (Or Bor Tor) and administrative levels of government, to begin identifying data needs of different stakeholder groups, identifying indicators, and formulating a joint data collection and sharing strategy.

The design process was completed using the Guidelines during a second workshop held in September 2005, involving 64 participants representing the DoF, research institutions and resource users from 10 villages around the reservoir.

Stakeholder roles and responsibilities were agreed which included the creation of a Reservoir Resource Management Committee and a plan to establish an information centre (Figure 2). The reservoir management plan was also revised and subsequently details of the information requirements of the main stakeholder groups were identified.

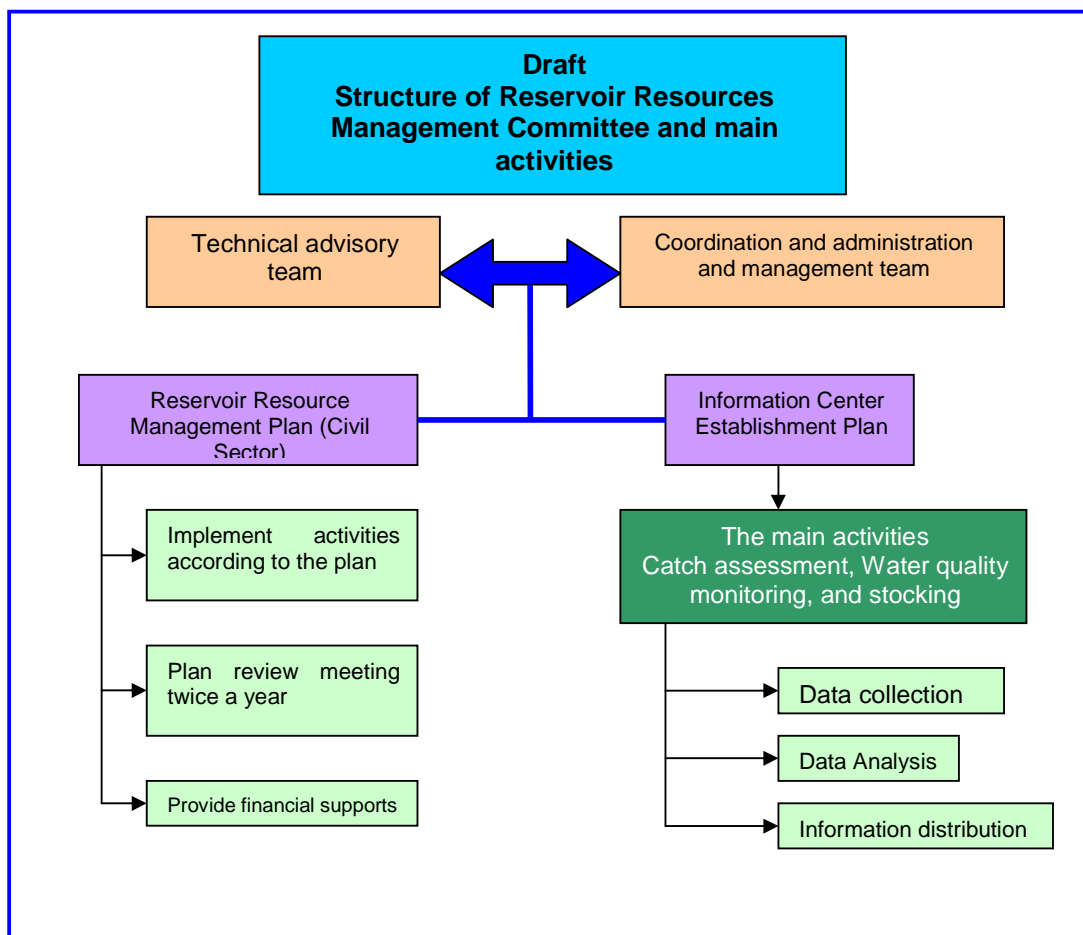


Figure 2 Draft Structure of Reservoir Resources Management Committee and main activities

Information requirements were identified as belonging to four main categories: (i) hydrology (water level) and irrigation management strategies proposed by the Department of Irrigation; (ii) water quality and sources of water pollution; (iii) fisheries production (landings) from the reservoir; and (iv) Development plans for the reservoir formulated by government organizations and NGOs.

The data collection strategy including data collection methods and sources, was also agreed during the workshop with community representatives. The agreed data collection methodology is based upon participatory monitoring approaches or “folk research”. Fish production (landings) by species and fishing effort data will be recorded by fishers from each village with technical supervision from government agencies using recording forms designed during the workshop. Water quality monitoring will be also undertaken monthly by representatives of the reservoir communities.

A data sharing strategy was also developed during the workshop based upon the current capacities and lesson learned by government agencies and an existing sharing information sharing network involving TAOs, communities and schools (Figure 3). This promising data sharing strategy will continue to be tested through the Participatory Action Research process (PAR).

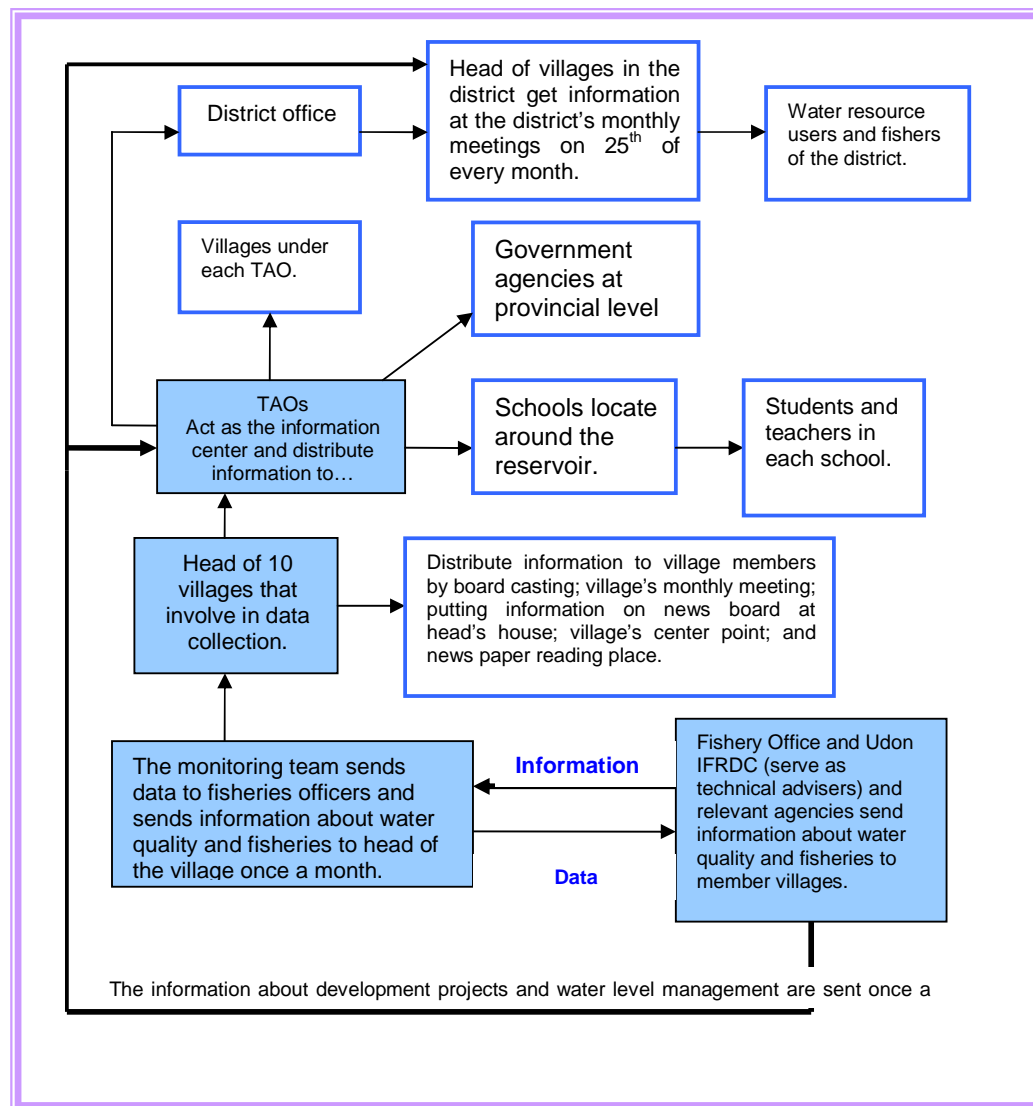


Figure 3 Information Sharing System developed by stakeholders co-managing the Huay Luang reservoir in NE Thailand.

Training courses on data collection tools and techniques, water quality monitoring and nursing fry methodology were also organised for 30 community representatives. Workshop participants agreed to implement the data collection strategy according to the schedule of activities given in Table 2 below.

It is anticipated that the data collection and sharing system will directly benefit approximately 700 full-time fishers from the 10 villages that exploit the reservoir; 3 TAOs; Udonthani Inland Fisheries Research and Development Center (IFRDC); and the Fishery Office. Approximately 18,000 part-time fishers; water users; and 8 schools in three sub-districts are also anticipated to benefit indirectly from the shared information, and improved utilization and management of the reservoir resources of Huay Luang.

Table 2 Schedule of activities to implement the data collection strategy for the Huay Luang reservoir in NE Thailand.

Sequence	Activities	Place and Time
1	Survey number of fishers and fishing gears	Nampon (3 villages) 2 days in October 2005
		Nongbuaban (4 villages) 2 days in October 2005
		Nong Or-noy (1 village) 1 days
		Kok Sa-ard (2 villages)
		Nong Waeng, Ban Lao, Dong Noy, Kasetsomboon
2	Organize meetings to - Identify the surveyors - Identify the group leader - Identify time and actions	November 2005
3	Survey fish caught in Huay Luang reservoir	December 2005 – November 2006
4	Evaluation of the survey	January 2006

Not only has a data collection and information sharing strategy been developed with stakeholders to improve the management of the reservoir resources at Huay Luang reservoir, but the capacity of stakeholders to manage has also been improved through the process. Agreement was also reached to regularly update the reservoir management plan.

Obstacles to the implementation of the plan were determined and monetary and technical support requirements of government agencies and the OBT were identified. Major obstacles to effective management were identified as stemming mostly from inefficient and ineffective information flow and the lack of coordination with regard to the issues of importance to most stakeholders.

The workshop participants reported an improved understanding of reservoir resource management and an appreciation of the data needs of different stakeholder groups including the widespread interest among resource users to diversify their livelihoods to include tourism-related income generating activities. The planning and design process also helped raise awareness of the need to consider other sectors when formulating and evaluating management plans and activities.

The data collection and sharing system and its participatory design and development process has been described in a paper that was presented as a poster at the 7th Technical Symposium on Mekong Fisheries, Ubon Ratchathani, NE Thailand, in November 2005. The abstract of the paper is provided in Annex 4.

4.3 Non-Technical Versions of the Guidelines

Two concise, non-technical and highly visual versions of the guidelines containing lessons learnt from the field testing and evaluation phase were produced and promoted via a variety of channels and media: *A Practical Guide* and a *Policy Document*.

4.3.1 *Practical Guide*

In response to feedback received during the preliminary phase of field testing the guidelines under R8285, a *Field Guide* was produced in the closing stages of that project as an additional project output.

Significant changes, listed below, were made to the Field Guide in response to the feedback received from the project's collaborators following their evaluation activities (See Section 5). These evaluation activities and the subsequent recommendations to improve the guidelines are summarized in Final Guidelines Evaluation Workshop Report (Annex 2). The *Field Guide*, re-named **A Practical Guide** now forms **Part I** of the FAO Fisheries Technical Paper (see Annex 1).

- The Guide has been re-structured into 4 main sections with sources of further information and reference material included as Annexes.
- Descriptions of co-management have been revised according to comments received from experts at FAO.
- Information requirements have been described in the context of the management process.
- Each stage of the eight-stage participatory design process has been more clearly distinguished with appropriate formatting.
- Additional practical guidance on the participatory design process has been included in Section 3. The process of identifying common data requirements with stakeholders has also been elaborated and illustrated further by means of additional tables and figures.
- Examples of typical data variables required to meet the four categories of information requirements have been included in the Annexes.
- Lessons and experiences generated during the field evaluations by project partners have been added, highlighted as case studies.
- Most of the figures in the guidelines have been re-drawn and table formats modified.

The Practical Guide has been written specifically for co-managers and facilitators working in the field and offers simple and practical advice on helping stakeholders identify their information needs in relation to their management objectives and responsibilities, and developing collaborative ways of collecting and sharing the information in the most effective way.

It begins by describing the scope and purpose of the Guide. Section 2 explains, in the context of the co-management process, who needs information, what types of information they need, and why they need it. The main Section 3 describes an eight-stage participatory process for designing and implementing data collection and sharing systems to meet these needs in a participatory manner with relevant stakeholders. Further sources of information and advice are also provided in Section 4 and examples of indicators and data types are provided in Annexes. Frequent cross-referencing to relevant sections of Part II is made throughout the document to complement the material provided.

4.3.2 *Policy Document*

A policy document has been produced that aims to raise awareness among policy makers of the importance of data collection systems in the context of the management process; highlight the challenges faced by those involved in designing and implementing data collection systems or programmes; and describe how these challenges might be addressed by the application of the Guidelines promoted by this project. These challenges and outcomes are illustrated with the experiences of, and lessons learnt by, fisheries management institutions working in South and South East Asia to design and implement data collection systems for co-managed fisheries using the Guidelines.

The document begins with a summary section emphasizing the importance of small scale fisheries to poor people's livelihoods, the benefits of co-management, the importance of information to support the management process, and the challenges experienced by designers of data collection systems. It describes how these challenges may be addressed using the Guidelines to develop systems that are effective, efficient and thereby sustainable.

Section 1 provides an overview of the Guidelines including the contents of Parts I & II and their target audience. Section 2 describes the importance of information for co-management in the context of policy and development planning and evaluation, and management planning, implementation and evaluation. Challenges to designing effective and sustainable systems experienced by co-managers and supporting projects are described in Section 3. Section 4 describes how these guidelines attempt to address these challenges, emphasising the importance of correctly identifying information needs, coordinating data collection efforts and ensuring sustainability. Case studies are used to illustrate how the guidelines have helped to address these challenges under co-management projects in Bangladesh and Thailand. Key messages are summarized in Section 5, and Section 6 gives sources of further information and details of how copies of the Guidelines can be obtained. A copy of the Policy Document can be found in Annex 11.

4.4 Promoted Outputs

An initial communications plan was provided at the beginning of the project and this was updated and reported in the Q1 report following discussions with related FMSP projects (in order to ensure greater coordination and shared information) and collaborative partners during the project workshop.

The communications matrix is provided here (Table 3) with an additional column to record the key communications achievements (see green column). Specific outputs are then described in more detail below.

Table 3 Updated communications matrix to illustrate key achievements

Communication stakeholders	Research Product / message to be communicated	Communication objectives: Desired outcome of communication / promotion	Communication channels and media in which research product will be communicated	Achievements	Approach to monitor and evaluate implementation of communications plan
Policy makers and donors [Policy influencers]	<i>Product:</i> Policy-level non-technical version of the guidelines <i>Message:</i> Effective information collection from the fisheries sector can support the development of fisheries policies, plans and budgets and wider country development plans;	<ul style="list-style-type: none"> Increasing awareness of the guidelines and their utility Increasing awareness of donors and policy makers for the need for effectively designed and implemented information collection systems to support co-management. 	<ul style="list-style-type: none"> Flyer (communicating benefits of guidelines) including use of case studies as illustrative examples and linkages to overall co-management approach Articles within donor magazines or circular e.g. DFID's environet or developments magazine, World Fish newsletters, SFLP info-flash FMSP website and links Email correspondence Reports and synthesis product 	<ul style="list-style-type: none"> Flyer sent to 30 policy level stakeholders Distribution of guidelines through FAO channels and plans to send through project channels Links on FMSP, MRC, Stream, FAO and World Fish websites ID 21 article in press Feedback questionnaire developed for when guidelines are distributed. 	<ul style="list-style-type: none"> Distribution lists Records of responses to communications List of articles
National level Fisheries Management, Research institutions, extension staff and training institutions (newly targeted institutions) [Implementing organisations -	<i>Product:</i> Technical guidelines and non-technical practical summary of guidelines <i>Message:</i> •The guidelines offer a range of tools for developing and implementing effective information collection and sharing systems. •Systems of information	<ul style="list-style-type: none"> Increasing awareness of the guidelines and their utility Increasing adoption and use of the guidelines Ensuring guidelines are fully accessible through all possible dissemination routes and to the relevant people within organisations 	<ul style="list-style-type: none"> Development of communication stakeholder contact lists in collaboration with FAO, WorldFish, MRAG and other FMSP projects to ensure contacts for relevant people within organisations Flyers informing stakeholders of benefits, uses and resources required to use guidelines Use of list servers; 	<ul style="list-style-type: none"> Flyer sent to 102 national implementation level stakeholders (management & research) 23 capacity building organisations and 20 target beneficiaries. Links on FMSP, MRC, Stream, FAO and World Fish websites Focal points for 	<ul style="list-style-type: none"> Distribution lists for flyers and guidelines Records of responses to communications Lists of web-site links Brief questionnaire to accompany draft and final

national fisheries management & research] [Capacity building organisations]	collection and sharing are required for effective fisheries co-management; •Information collection systems within the fisheries sector can support a range of requirements within 'co-management' ranging from informing policy to fisheries management at the lowest level. •Effective information collection from the fisheries sector can support and influence the development of fisheries policies, plans and budgets and wider country development plans and raise the profile of the sector;		<ul style="list-style-type: none"> ◦ Ensuring wide dissemination of guidelines and responding to requests ◦ Setting up focal points within collaborating institutions, with the necessary funds and availability to send out copies of guidelines ◦ Ensure guidelines are available as reference material in the most important libraries (FAO/World Fish/IDS/others) ◦ Ensuring guidelines available on the web with links from relevant sites (e.g. Onefish and http://www.co-management.org/) ◦ Correspondence through email ◦ Project workshop ◦ Newsletter articles with collaborating institutions 	dissemination identified <ul style="list-style-type: none"> ◦ Project workshop with participants from Bangladesh projects (Fourth Fish & CBFM) and FAO. ◦ Guidelines developed collaboratively with four institutions and revised based on case studies in Bangladesh and Thailand. ◦ Distribution of guidelines through FAO channels and plans to send through project channels. ◦ Feedback questionnaire developed for when guidelines are distributed. 	guidelines
Regional and/or International Fisheries Management and Research institutions (current collaborators) [Implementing organisations – international and regional fisheries management &	<i>Product:</i> Technical guidelines and non-technical practical summary of guidelines <i>Message:</i> •The guidelines offer a range of tools for developing and implementing effective information collection and sharing systems. •Systems of information collection and sharing are required for	As above plus: <ul style="list-style-type: none"> ◦ Increasing awareness of the guidelines and their utility throughout the institution ◦ Promoting mechanisms for long-term support for guidelines from collaborating institutions ◦ Ensuring good representation and participation within the final guidelines evaluation workshop 	As above, plus: <ul style="list-style-type: none"> ◦ Promoting internal communication about guidelines in collaborating institutions (circular emails, posting on the intranet, lunch-time presentations) ◦ Inclusion of a session within the final workshop on ways to ensure the long-term support for the guidelines (e.g. future promotion and development) ◦ Achieving visible 'endorsement' of guidelines 	<ul style="list-style-type: none"> ◦ Flyers sent to 37 regional implementation level stakeholders (management & research) stakeholders ◦ Communications plans for each institution developed during evaluation workshop. ◦ Newsletter articles in Catch and Culture (MRC); Mekong Research; NAGA (World Fish); CBFM 	<ul style="list-style-type: none"> ◦ Distribution lists for flyers and guidelines ◦ Records of responses to communications ◦ Lists of web-site links ◦ Records of internal meetings and communications ◦ Brief questionnaire to

research]	<p>effective fisheries co-management;</p> <ul style="list-style-type: none"> •Information collection systems within the fisheries sector can support a range of requirements within 'co-management' ranging from informing policy to fisheries management at the lowest level. •Effective information collection from the fisheries sector can support and influence the development of fisheries policies, plans and budgets and wider country development plans; 		by collaborators e.g. preparing a forward for the guidelines written by chairpersons of collaborating organisations (illustrating endorsement)	<p>and ID21 policy series.</p> <ul style="list-style-type: none"> ◦ Distribution of guidelines through FAO channels and plans to send through project channels. ◦ Feedback questionnaire developed for when guidelines distributed. 	<p>accompany draft and final guidelines</p> <ul style="list-style-type: none"> ◦ Evaluation through workshop ◦ Ensure collaborators have monitoring forms (i.e. to record communication activities)
<p>NGO Fisheries Management/Social development in fisheries</p> <p>[Implementing organisations – national fisheries management]</p>	<p><i>Product:</i> Practical summary of guidelines</p> <p><i>Message:</i> •The guidelines offer a range of tools for developing and implementing effective information collection and sharing systems.</p> <p>•Systems of information collection and sharing are required for effective fisheries co-management.</p>	<ul style="list-style-type: none"> ◦ Increasing awareness of the guidelines and their utility throughout organisations ◦ Ensuring guidelines are fully accessible through all possible dissemination routes and to the relevant people within organisations 	<ul style="list-style-type: none"> ◦ Flyers ◦ Links through websites ◦ Distribution of guidelines ◦ Ensuring practical guidelines are user-friendly (e.g. ring binders, colour coded, easy to navigate) and include tools such as laminated cards with steps for use in the field ◦ Correspondence through email ◦ Newsletter articles with collaborating institutions ◦ Use of list servers 	<ul style="list-style-type: none"> ◦ Flyer sent to 102 national implementation level stakeholders (management & research), 23 capacity building organisations and 20 target beneficiaries. ◦ Links on FMSP, MRC, Stream, FAO and World Fish websites ◦ Practical guidelines designed in a user friendly format. ◦ Newsletter articles in Catch and Culture (MRC); Mekong 	<ul style="list-style-type: none"> ◦ Distribution lists for flyers and guidelines ◦ Records of responses to communications ◦ Lists of web-site links ◦ Brief questionnaire to accompany draft and final guidelines

				<p>Research; NAGA (World Fish); CBFM and ID21 policy series.</p> <ul style="list-style-type: none"> ◦ Distribution of guidelines through FAO channels and plans to send through project channels. ◦ Feedback questionnaire developed for when guidelines distributed. 	
Promotion organisations	<p><i>Product:</i> Practical summary of guidelines</p> <p><i>Message:</i> •The guidelines offer a range of tools for developing and implementing effective information collection and sharing systems.</p> <p>•Systems of information collection and sharing are required for effective fisheries co-management.</p>	<ul style="list-style-type: none"> ◦ Further promotion of guidelines to a wider group of stakeholders 	<ul style="list-style-type: none"> ◦ Flyers ◦ Links through websites ◦ Distribution of guidelines ◦ Correspondence through email ◦ Newsletter articles with collaborating institutions 	<ul style="list-style-type: none"> ◦ Flyers sent to 132 promotion level stakeholders ◦ Links on FMSP, MRC, Stream, FAO and World Fish websites. ◦ Practical guidelines designed in a user friendly format. ◦ Newsletter articles in Catch and Culture (MRC); Mekong Research; NAGA (World Fish); CBFM and ID21 policy series ◦ Distribution of guidelines through FAO channels and plans to send through project channels. ◦ Feedback questionnaire developed for when guidelines distributed. 	<ul style="list-style-type: none"> ◦ Distribution lists for flyers and guidelines ◦ Records of responses to communications ◦ Lists of web-site links ◦ Brief questionnaire to accompany draft and final guidelines

The main communications materials and channels described here include:

- Project flyer and leaflets
- Poster
- Website links
- Newsletter Articles
- Promotion meetings or events
- Distribution of draft guidelines
- Policy Brief

Project Flyer and Leaflet

A project flyer and leaflet on information collection for co-management (see Annexes 8 & 10) were prepared at the beginning of the project to increase awareness of key stakeholder to the development of the guidelines.

The flyer was distributed through identified communications channels by MRAG. The leaflets were sent to a number of different stakeholders under different categories by the different project collaborators. This included 73 stakeholder identified by MRAG, 50 identified by the Mekong River Commission; 37 by the Forth Fish Programme and 190 by the Community Based Fisheries Programme (Table 4). In addition the flyer and/or leaflet were posted on the MRAG, Mekong River Commission, OneFish and STREAM websites.

Email and internet portals were identified as an appropriate promotion pathway to policy makers and donors, regional and national level fisheries management, research and training institutions and NGO fisheries management/social development organizations. Additional opportunities to distribute the flyer in hard copy were also taken. The flyer was distributed to 15 Indian, Kenyan and Tanzanian participants at the ParFish training workshop (Project R8464) in Mangalore in July. A Bangla version of the flyer (Annex 8) was prepared for local stakeholders. It was distributed widely at 'Fish Fortnight', a two week event held in Bangladesh promoting the fisheries sector.

Table 4 Distribution of the project flyer and leaflet

<i>Stakeholder Categories</i>	MRAG	MRC	Forth Fish	CBFM	TOTAL
<i>Language of Flyer or Leaflet</i>	English	English	Bangla	Bengali	
Policy makers and influencers	10	20			30
National implementing organizations	17	20	15	50	102
Regional & international implementing organizations	27	10			37
Promotion organizations	2			130	132
International research organizations	2				2
National research organizations	7				7
Capacity building organizations	3		2	20	25
Consultants	5				5
Target beneficiaries			20		20

Poster

A poster was prepared to illustrate three of the FMSP outputs that focus on fisheries co-management issues namely information for co-management (this project), ParFish and Adaptive Learning (see Annex 9). It was used to raise awareness at key meeting and conferences as illustrated in Table 5. Some of these were undertaken by MRAG, while others were undertaken by project collaborators.

Table 5 Poster displays

Event	Date	No. people present	Types of stakeholders present
Final Workshop for Guidelines for Designing data collection and sharing systems for co-managed fisheries in Dhaka, Bangladesh	26th- 28th June 2005	25	Fisheries Research Fisheries Management
TAB Meeting in Ho Chi Minh City, Thailand	September 2005	40	Policy influences Fisheries Management
Programme Coordination Meeting, Thailand		40	Policy influences Fisheries Management
Stock assessment tools training workshop, Bangladesh	Sept 2005	25	Fisheries Management
Fish Fortnight, Bangladesh (7 days)	September 2005	2000+	Policy influencers Fisheries Research Fisheries Management Capacity building Promotion organizations Target beneficiaries
Society of Conservation Biologists Annual Conference, Brasilia	July 2005	1,000	Fisheries Research Fisheries Management Capacity building
DFID workshop: climate change impacts on fisheries, London	12 th Sept 05	40	Policy influencers Fisheries Research Fisheries Management
Adaptive learning workshop, West Bengal	Sept 2005	50	Fisheries management Fisheries research Capacity building Promotion organizations
Adaptive learning workshop, South-East Asia (A4 version of poster), Cambodia	May 2005	20	Policy influencers Fisheries management Fisheries research
Inception workshop for Challenge Programme Water & Food, Penang, Malaysia	May 2005	30	Fisheries management Fisheries research
FAO meeting on assessment methods for small-scale fisheries and FISHCODE, Rome, Italy	Sept 2005	50-60	International research Policy influencers
ParFish Training Course, India	June 2005	40	Fisheries management Fisheries research

Project Website

A project website was set up on the FMSP website providing a project description, project flyer and Information for co-management leaflet. This web-page was maintained and updated with new information on the project including downloads of the latest project communication outputs such as flyers, leaflets etc (see Annex 15).

Information about the project's activities was maintained up-to-date on the Fisheries Management Science Programme website. Communication outputs were also distributed

through internet information portals such as OneFish and STREAM. Information about the Technical Paper will be included on FAO's website shortly before it is due to be published. The range of websites used is indicated in Table 6.

Table 6 Websites and web links

Website	Web-address	Project Description	Project Flyer	Co-management leaflet	Link to FMSP website	FAO Guidelines
FMSP project website	http://www.fmsp.org.uk/r8462.htm	✓	✓	✓	✓	✓
Mekong River Commission	http://www.mekonginfo.org		✓	✓	✓	
Stream Initiative	http://www.streaminitiative.org/	✓		✓	✓	
FAO website	http://www.fao.org/documents					✓

The Mekong River Commission website is monitored and recorded 35 downloads and 15 other users of the website.

Newsletter articles

Articles promoting the outputs of the project were written and published in WorldFish Center's Community Based Fisheries Management Project newsletter, in NAGA, in MRC's Catch and Culture magazine and in ID21 Research Highlights. These newsletters have a good circulation amongst fisheries management practitioners, policy makers and researchers. Table 7 provides an overview of the different newsletter articles that have been prepared for the project.

Table 7 Newsletter articles on the Guidelines for data collection for co-management

Journal	Publication Date	Language	Distribution	Target stakeholders
Catch & Culture	Nov 2005	English, Khmer, Lao & Thai	650 subscribers Through MRC website	Policy influencers Fisheries research Fisheries management Capacity building Promotion organizations
Mekong Research (www.mekonginfo.org/)	Nov 2005	English	MRC website	Policy influencers Fisheries research Fisheries management Capacity building Promotion organizations
NAGA (World Fish publication)	Nov 2005	English	400	Policy influencers Fisheries research Fisheries management Capacity building Promotion organizations
ID21	Jan 2006	English	ID21 website	Policy influencers Fisheries research Fisheries management
World Fish Community Based Fisheries Management News	August 2005	English	Through World Fish Centre	Fisheries research Fisheries management

Promotion meetings and events

In addition to the other communications materials and channels some of the project collaborators were able to hold meetings with stakeholders to further promote the approach and Guidelines to data collection for co-management (Table 8).

Table 8 Record of meetings held

Meeting/Event	Stakeholders present	Comments
Forth Fisheries Programme	Fisheries Resource Survey Unit	Considering introducing the data collection and sharing methodology in some of the project sites
Forth Fisheries Programme	Local Management Institutions (5 separate meetings with 16 people present at each meeting)	Showed interest to incorporate some of the methodology within their existing systems
Forth Fisheries Programme	MACH	Forth Fishery continued interest on approach, MACH undecided on data sharing approach
CBFM	Department of Fisheries, Department of Environment, Local Government Engineering Department (20 people present)	Stakeholder agreement that sharing of information is essential
CBFM	World Fish Centre (19 people present)	Stakeholder agreement that data sharing will improve fisheries management
CBFM	NGOs, Projects, Data collectors (110 people targeted)	Stakeholder agreement that sharing information will minimize time, cost and duplication
Mekong River Commission	Local government staff & resource users (2 events)	Increased awareness on data collection and sharing opportunities

Distribution of draft guidelines

The project outputs (Practical Guide and Technical Guidelines) were also promoted to beneficiaries through local-level workshops that were held with stakeholders for testing the Guidelines. These workshops generally involved a meeting or series of meetings where stakeholders identified their data needs and information requirements, possible data collection and sharing methods through a facilitated process guided by the Technical and Practical Guidelines.

Draft guidelines were also disseminated by the project as a means to increase awareness and engage stakeholders to give comments and begin using the approach (Table 9).

Table 9 Distribution of draft guidelines

	MRAG	CBFM	Forth Fisheries	MRC	TOTAL
Technical Guidelines	10	5	1	12	29
Field Guide	10	150	4	30	194

Policy Brief

A policy brief was prepared summarizing the main benefits of the Guidelines and their use to improve information for policy making and for improved management of fisheries. The aim of the brief is to provide an introduction to the Guidelines so that policy makers are aware of them and can recommend their use to technical staff. The policy brief has been sent out by email to sixty identified policy makers (See Annex 5).

4.5 Distribution of outputs

The FAO Fisheries Technical Paper will be distributed to UN member Directors of Fisheries; Regional Fisheries Officers and Fisheries Departments by the FAO in December 2005. Distribution lists for the flyer and policy brief sent electronically by MRAG are given in Annex 5. Tables 4-9 above summarize the wider distribution of project outputs.

5 Research Activities

The project maintained the strong emphasis upon participatory research activities adopted under R8285 by collaborating with representative stakeholders and institutions from all management and advisory levels, and relevant bi-lateral country projects to ensure that outputs were demand-driven and maximising the likelihood of their uptake by target institutions.

The project activities focused upon improving the guidelines generated by R8285 by means of further field-testing and evaluation activities under ongoing co-management projects in south and south-east Asia and widely promoting them, throughout the life of the project, in a variety of different technical and non-technical formats to target institutions and relevant communication stakeholders (see Figure 4).

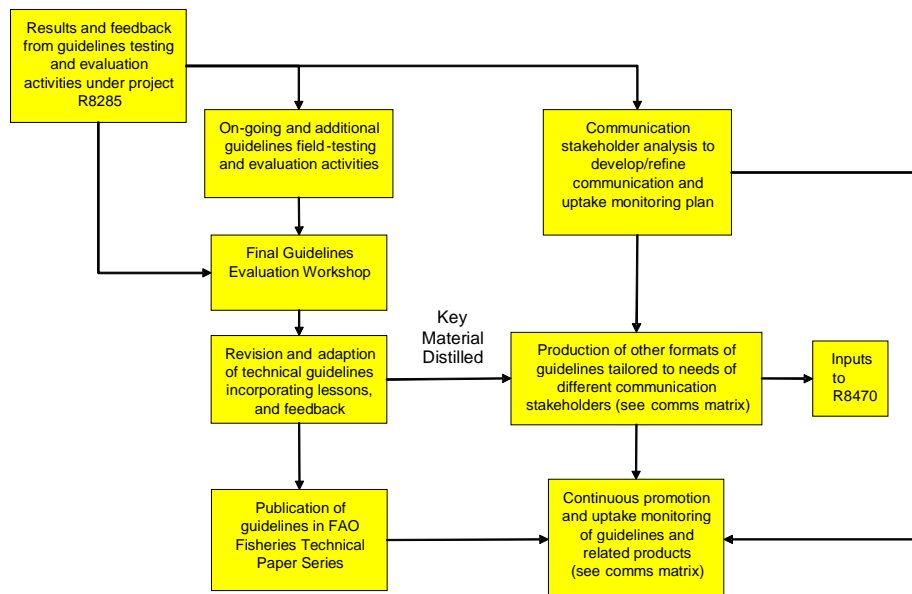


Figure 4 A summary of the project activities

5.1 Communications and Uptake Monitoring Planning

The project began by developing a detailed communication and uptake monitoring plan by means of a stakeholder analysis. This was undertaken in collaboration with Projects R8464 and R8470 which shared many of the same target communication stakeholders. The plan also included details of required activities for monitoring its implementation. Target stakeholders and their communication needs were identified, together with appropriate media and activities, communication pathways and further uptake opportunities (see Table 3 - Communication Matrix).

The communications plan was developed in more depth for implementation with project partners at the Guidelines Evaluation Workshop in Dhaka. Project partners carried out stakeholder analyses and communications planning for their particular projects and stakeholders. This included identifying communications stakeholders, their Knowledge, Attitude, Practice and Influence (KAPI) in relation to data collection and sharing systems for co-managed fisheries, and the most appropriate means of promoting the Guidelines to them. This led to the development of a Communications Action Plan (see the Guidelines Evaluation Workshop Report in Annex 2) which detailed specific actions and responsibilities for meeting the objectives of the project communications plan. The KAPI tables were updated by project partners at the end of the project in order to evaluate any changes in knowledge, attitude, practice or influence as a result of the project and its communication activities.

Through discussions with other FMSP projects and project collaborators a range of stakeholder were identified as summarized in Table 10.

Table 10 Numbers of stakeholders identified for the data collection and sharing project

<i>Stakeholder Categories</i>	MRAG	MRC	Forth Fish	CBFM	FAO	TOTAL
Policy makers and influencers	6	20	11	11	5+	53
National implementing organizations (management, research & training)	24	20	6	12	1	63
Regional & international implementing organizations (management, research & training)	29	10	11	6	12	68
Promotion organizations	2		6	4	2	14
Target beneficiaries			4	4		8
Others	8		2	2		12

A questionnaire was developed to help collaborators and other target stakeholders evaluate the utility of the guidelines following their field testing activities or review of the materials (see Annex 3 of the Guidelines Evaluation Report in Annex 2). Feedback received from the questionnaire was used to improve the content, structure and formatting of both Part I & Part II of the Technical Paper.

A knowledge, attitude and practice (KAP) questionnaire was also developed (see Annex 6). The KAPI questionnaire looks at the level of knowledge of stakeholders on data and information collection systems for co-management and whether this has increased as a result of the guidelines; their attitudes towards setting up data collection systems; their practice in running data collection systems and the extent to which they think the guidelines are useful for their organization and related stakeholders. Further to this project collaborators were asked to update the KAPI tables they had prepared during the project workshop illustrating the knowledge, attitudes, practice and influence of

stakeholders. (The full KAPI tables for each project are provided in Annex 2, and illustrations of changes provided in Section 4.5).

A Communications Monitoring Form (Annex 7) was also developed and completed by project collaborators to record activities related to flyers, newsletter articles; posters; web page links; meetings; media coverage; and distribution of the draft guidelines. The form also enabled the project to determine which stakeholder groups had been targeted with these different communications materials and channels and whether the communications materials had been tailored for specific situations e.g. translated into local languages.

Ongoing and further evaluations of the Guidelines

At the same time, further evaluations of the Guidelines developed under R8285 began under the MRC's MRRF project in Thailand and under the DFID funded CBFM and Fourth Fisheries Projects in Bangladesh. It was hoped that the Guidelines could have also been tested in East Africa under the Tanga Coastal Zone Conservation and Development Project (TCDZCP). However, these plans could not be implemented due to changes to the project's collaborators commitments and planned activities. A common evaluation reporting format was developed by the project to ensure feedback on aspects of the Guidelines were received from all project partners. This common reporting format is described in Annex 2 of the Guidelines Evaluation Report which is itself in Annex 2 of this report. These evaluation activities, including their outcomes, have already been summarised in Section 4.2 above. Full details of these activities are given in the collaborators evaluation reports in Annex 3 of this report and summarized in the Guidelines Evaluation Report contained in Annex 2 of this report.

5.2 Final Guidelines Evaluation Workshop

Following this second round of evaluation activities, A *Final Guidelines Evaluation Workshop* was held in Dhaka on 26-28th June 2005 to report on the findings of field evaluations, make recommendations to improve them, and to refine the project's communication and uptake promotion strategy.

The workshop was attended by 15 members of staff from the project's collaborating institutions and the Government of Bangladesh (GoB) Department of Fisheries (DoF). Wolf Hartmann representing the MRC's MRRF Project was unable to attend because of travel restrictions.

Presentations by project partners describing the results of their field testing in Bangladesh were made using the common reporting format described above. This included feedback on the utility of the Guidelines and recommendations to improve them covering the figures, tables, structure, format and content based upon a questionnaire/feedback form developed by the project. This exercise also generated some key messages and important lessons learnt for inclusion into the guidelines.

Project partners identified and presented potential communications products and channels for each main stakeholder category using a communications matrix which included information on stakeholder roles, knowledge, predicted attitude towards project outputs, and degree of influence. Feedback on the existing communications products (poster, website text and flyer) was also provided. This was used to help shape and prioritise communication activities for the remainder of the project. A schedule for undertaking the remaining project activities was also agreed.

Further details of the outcome of this workshop are reported in the Guidelines Evaluation Report in Annex 2 of this report.

5.3 Revision and Publication of the Technical Guidelines

On the basis of the feedback received from project partners during the Guidelines Development Workshop and on the basis of their completed Guidelines Evaluation Questionnaires, the Technical Guidelines were revised accordingly. A summary of the changes made, together with an outline of the revised document has already been described in Section 4.1 above. The revised version of the Technical Guidelines is included in Annex 1 of this report and is scheduled to be published in the FAO Fisheries Technical Paper Series alongside the *Practical Guide* in December 2005.

5.4 Production of non-technical Guidelines

The evaluation activities described above were also used to revise the *Field Guide* re-named: *A Practical Guide* following the Guidelines Evaluation Workshop. A summary of the changes made, together with an outline of the revised document has already been described in Section 4.3.1 above and is included in Annex 1 of this report. It is scheduled to be published in the FAO Fisheries Technical Paper Series alongside the *Technical Guidelines* in December 2005.

5.5 Promotion and uptake monitoring of Guidelines

The Guidelines were promoted through the implementation of the Communications Plan as described in Section 4.1. Promotion occurred through a range of pathways, including 'learning by doing' in the case of the project partners, raising awareness of project outputs and of the issues surrounding fisheries co-management information systems through communications materials which were distributed by email, through internet sites and portals, and in hard copy. Monitoring uptake of the Guidelines was carried out with project partners through email and personal contacts.

In order to monitor the promotion and uptake of the guidelines KAP and communications monitoring questionnaires were circulated to project collaborators. In addition project collaborators were required to complete KAPI tables for their stakeholders (see workshop report in Annex 2) and update these towards the end of the project. The results of the communications monitoring are provided in Section 3.4. This section focuses on results from the KAP questionnaire and updates of the KAPI tables.

In addition to the results provided below, monitoring uptake of the Guidelines as an FAO-published Technical Paper will be carried out by recording distribution of the Technical Paper and also by distributing a feedback questionnaire together with the Technical Paper, requesting feedback on how useful the Guidelines are, if they have used them or intend to use them, and if so what have/will they use(d) them for. These results of these evaluations will be reported in the next FMSP Annual Report.

5.5.1 Results from the KAP questionnaires and tables

The following sections provide the results from the KAP questionnaires and the updated KAPI tables undertaken by the project collaborators. As the same KAP questionnaire will be used when distributing the guidelines it will be possible to add to these results as they become available.

Knowledge

The graph below () illustrates the change in understanding of data and information collection systems of project partners before and after reading or using the FAO Guidelines. Most partners indicate an increase in their levels of understanding of data and information collection systems.

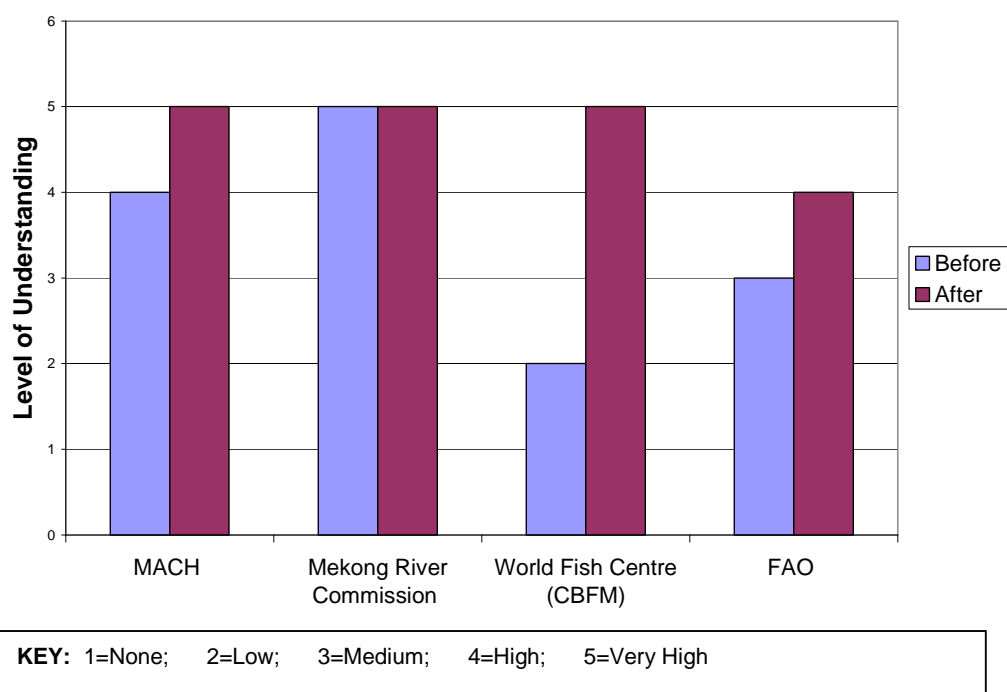


Figure 5 Changes in understanding in designing data collection systems within project collaborator organizations before and after the project

Attitudes

The table below (Table 11) illustrates the attitudes of the respondents answering the questionnaire. A 'cross' represent the answer of one respondent. The responses reveal that a high proportion of the respondents consider data and information collection systems to be important, that a participatory approach is useful and that the guidelines and eight-stage approach provide good guidance in achieving this.

Table 11 Attitudes on data and information collection systems

	Not at all	Low	Medium	High	Very high
The importance of information for co-management					x x x x
Need for a systematic approach to data collection			x x	x	x
Need for participation				x	x x x
If sharing data & information reduces overlap			x x	x	x
Need for guidance to design a data collection system				x	x x x
If the FAO Guidelines provide sufficient assistance				x	x x x
If the eight-stage approach captures the major steps required				x	x x x

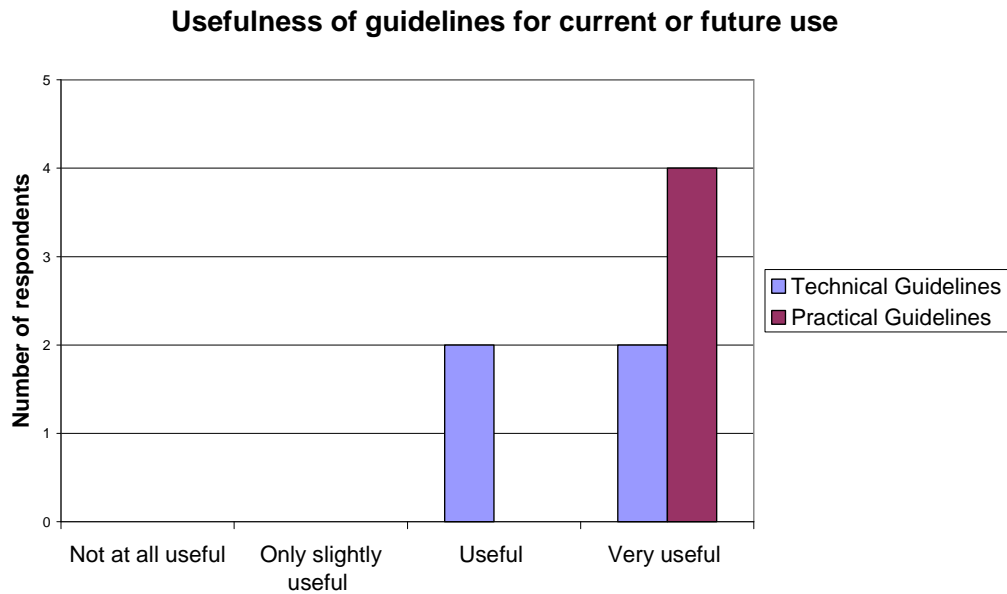


Figure 6 Attitudes on the usefulness of guidelines for future use

Practice

Table 12 illustrates the current practice of organizations related to data and information collection systems. This reveals that despite the positive attitude towards the need for data and information collection systems implementing this in practice is mixed. Some organizations have been able to implement the guidelines, while others may still need to apply the approach across the board.

Table 12 Practice related to data and information collection systems


<i>To what extend does your organization.....?</i>	Not at all	Low	Medium	High	Very high
Use a systematic approach to data collection systems		x	x		x x
Involve a range of stakeholders		x	x	x	
Identify common data needs	x		x	x	
Review existing data systems			x	x x	
Identify sharing pathways			x x	x	
Design data recording systems				x	x x x
Review data collection systems on a regular basis		x x		x	x

Stakeholder Uptake

Project collaborators were also able to report where the knowledge, attitude or practice of stakeholders had changed as a result of the project. A full listing of the KAPI scores for stakeholders related to each of the areas where the guidelines were tested is provided in Annex 2. Table 13 summarizes where it was possible to say that there had been changes in the KAPI scores, and the key to the table is given below:

Knowledge:	1 = Very low	2 = Low	3 = Average	4 = Good	5= Excellent
Attitude:	+ = some interest	++ = medium level of interest	+++ = high level of interest		
Practice:	Yes = using guidelines / data collection and sharing systems	No = not using guidelines / data collection and sharing systems			
Influence:	1 = very low	2 = low	3 = medium	4 = high	5= very high

Table 13 Changes in stakeholder knowledge, attitudes or practice.

Project Collaborators	Stakeholder	June 2005				November 2005		
		Knowledge	Attitude	Practice		Knowledge	Attitude	Practice
Forth Fishery Project (Bangladesh)	Ministry of Fisheries & Livestock (MoFL)	1	+	Yes		3	++	Yes
	Upazila Parisad (Provincial government)	1	+	No		1	++	No
Community Based Fisheries Management (CBFM – World Fish, Bangladesh)	LGED	2	+	Yes		3	++	Yes
	Department of Environment	2	+	Yes		3	+	Yes

From all the collaborators asked to complete the KAP questionnaire, **all** agreed that the guidelines would be useful for other stakeholder involved in co-management. The types of stakeholder that could make use of the guidelines were listed as follows:

Stakeholders	
Practical Guidelines	<ul style="list-style-type: none"> ○ NGOs ○ Government staff ○ Technical Assistance ○ Middle level government staff ○ Local Management ○ Field level data collector ○ Field Monitors ○ Fisheries department
Technical Guidelines	<ul style="list-style-type: none"> ○ Technical Assistance ○ Fisheries Ministry ○ Project staff and advisors ○ Specialist fisheries officers ○ Middle level government staff ○ University staff ○ Development agencies

6 Contribution of Outputs

6.1 Contribution to FMSP's Purpose and Output

The outputs of the project will contribute towards DFID's development goals expressed in terms of the Programme's Purpose and Output Objectively Verifiable Indicators (OVIs) as follows:

6.1.1 Purpose OVIs

OVI 1: Less variable and sustainable capture fisheries, and/or increased productivity from enhanced fisheries.

OVI 2: Improved fisheries employment (numbers, income, quality)

Sustainable and less variable landings, increased productivity and improved employment are fundamental goals and objectives pursued by co-managers in both the capture and enhancement fisheries sectors.

This project has further field-tested, improved and widely promoted guidelines described in Section 4.1 for designing data collection and sharing systems that aim to improve management planning, implementation and evaluation and thereby management performance in relation to these and other goals and objectives in the two sectors.

Access to improved information generated by these systems will empower fisher community members (including women and youth) to make informed choices and decisions concerning the co-management of their resources to improve their livelihoods in a sustainable manner. This includes the identification, development, or refinement of management strategies aimed at improving income, sustaining less variable landings in the capture sector, and increasing productivity within the enhancement sector.

For example, the main outputs from the project offer detailed guidance on designing monitoring programmes to evaluate the performance of management strategies and activities including stocking programmes. This guidance will help local managers improve or identify the best management or stocking strategy to improve production, minimize their costs and thereby maximize their earnings.

The guidelines will also enable managers at the national level e.g. the Department of Fisheries and their administrative divisions to effectively formulate, implement and evaluate policies, development plans and activities aimed at supporting and coordinating these local management activities, as well as to meet their national and international reporting responsibilities.

Information networks developed using the Guidelines and supported by the DoF to share the lessons of management success (and failure) among individual co-management units may, for example, help to identify the best location for, or size of reserves, to reduce variability in landings, sustain production or increase income.

The results of field evaluations of the Guidelines in NE Thailand reported in Section 4.1 have already demonstrated that the process of co-designing data collection systems can be enlightening with respect to development planning. This multi-stakeholder planning exercise helped raise awareness among government bodies of the widespread interest among fishery resource users to diversify their livelihoods to include tourism-related income generating activities as a means of improving their overall incomes.

Whilst reduced variability in landings, increased productivity and improved employment arising from the application of the Guidelines cannot be verifiably reported at this time, information and sharing systems to improve management performance in pursuit of these and other goals and objectives in the two sectors, have been established or improved in both Bangladesh and Thailand (see Section 4.2).

Uptake of the guidelines by other target stakeholders will ultimately contribute to sustainable and less variable capture fisheries production, increased production in the enhancement sector and improved employed in both sectors.

OVI 3: Improved access by poor people to fisheries knowledge generated by the Programme.

Most poor fishers do not have the capacity to independently utilize effectively the contents of the Guidelines. Fishers are often illiterate or may be unfamiliar with many of the concepts, terms and ideas contained within the Guidelines. The project's uptake promotion strategy and outputs (flyer, information leaflet, articles, newsletters, websites, ...etc - see Section 4.4) will help raise awareness of the existence, importance and utility of the Guidelines among co-management stakeholders such as DoF staff, NGOs and project staff working alongside poor fishers, including details of how they can obtain copies of the Guidelines. The contents of the Guidelines will be disseminated and discussed with poor fishers during the participatory process of co-designing data collection systems as advocated in the guidelines, following, if necessary, appropriate 're-packaging' of the information.

Fisher communities participating in the Guidelines evaluation activities in Bangladesh and Thailand described in Section 4.1 and 0 have already had access to the contents of the Guidelines in this manner.

This indirect access by poor people to the guidelines generated by the Programme is therefore expected to improve through time as awareness of the availability and utility of the Guidelines increases through time.

Target communication stakeholders knowledge of the importance of information to support the co-management process and how to design effective and sustainable systems will therefore also improve.

6.1.2 Output OVIs

OVI 3: Information systems to support the co-management of fisheries important to the poor field tested with target groups and institutions in at least three locations in two countries, adapted, and widely promoted (in target countries, international knowledge systems and DFID) by 31 March 2006.

The project has developed Guidelines to help co-managers design information systems to support co-managed fisheries important to the poor (Section 4.1). These were developed from an earlier version developed under R8285 that were adapted and improved on the basis of field evaluations with project partners (Section 5.3). As part of this Guidelines evaluation (field-testing) process, the establishment or improvement of information systems has begun at 8 locations in 7 Districts of Bangladesh (Thakurgaon, Rangpur, Khulna, Jessore, Tangail, Sunamganj and Mymensingh) and at one reservoir site in Udon Thani, NE Thailand that supports fisheries-dependent livelihoods of poor people from 10 villages (Section 4.2). The Guidelines have also been widely promoted to target

communication stakeholders in target countries using a variety of media including international knowledge systems (see Sections 4.4; 5.5; and 6.2).

6.2 Impact of the Project

6.2.1 *Raised Awareness of the Importance of Data for Management and the Utility and Availability of New Guidelines to Develop or Improve Data Collection Systems*

The project has raised awareness among the projects partners and other target communication stakeholders of the importance of effective and sustainable data collection systems to support the co-management process, the existence and utility of the new Guidelines, and how they can obtain copies. Table 14 summarizes the number of stakeholders within different categories who have increased their awareness as a result of the project.

Table 14 Number of stakeholders with increased awareness of the guidelines through project flyer and leaflet

Stakeholder Categories	Number of stakeholders with increased awareness
Policy makers and influencers	30
National implementing organizations	102
Regional & international implementing organizations	37
Promotion organizations	132
International research organizations	2
National research organizations	7
Capacity building organizations	25
Consultants	5
Target beneficiaries	20

These numbers are based on increased awareness as results of project flyers and leaflets. However there are potentially a greater number of people made aware through other channels including websites, exposure to posters and newsletter articles. The numbers of stakeholder reached through these channels is estimated in Table 15. More details of the types of stakeholders targeted by these different communication channels are provided in Section 3.4.

Table 15: Estimated number of stakeholders with increased awareness through website, poster and newsletter article channels

Communications channels	Estimated number of stakeholders with increased awareness
Website links	100+
Poster	3,000+
Newsletter articles	1,500+
Draft Technical Guidelines	29
Draft Field Guide/Practical Guide	194
Policy brief	76

6.2.2 Established or Improved Data Collection and Sharing Systems

Data collection and sharing systems have begun to be developed and implemented by co-management stakeholders in at 8 locations in 7 Districts of Bangladesh (Thakurgaon, Rangpur, Khulna, Jessore, Tangail, Sunamganj and Mymensingh) and at the Huay Luang Reservoir in Udon Thani, NE Thailand (Section 4.2).

In Bangladesh, the data collection systems developed and currently being piloted under the FFP, will, if successful, help improve the management of fisheries resources at five locations in four Districts (Thakurgaon, Rangpur, Khulna and Mymensingh). The fisheries-dependent livelihoods of members of an estimated 1100 households from 56 villages are expected to benefit from this improved management performance including sustainable, less variable landings from their capture fisheries, increased production from their stocked waterbodies and increased income. The number of households that are likely to benefit, broken down by different socio-economic categories are given in Table 1 and includes more than 200 subsistence fishers. Further systems may be designed with the remaining forty or so fisher communities currently supported by the FFP, and implemented beyond the life of the project.

Designs for a community-based data collection and sharing systems have also been developed under the CBFM project with project staff, members of participating fisher communities, and staff from the DoF at sites in three Districts (Jessore, Tangail and Sunamganj). These designs include details of potential data collection tools and sources; and communication networks for sharing information among resource users, community-based organisations (CBOs), and administrative sub-divisions of the DoF (see Section 4.2.2). WorldFish Centre, responsible for administering the CBFM project expect that these preliminary designs can be refined and implemented to ensure that stakeholder information needs in these and other sites can be sustained beyond the life of the CBFM project (see CBFM Newsletter in Annex 17) potentially benefiting more than 20,000 participating fishing households, through improved management performance.

In Thailand, it is anticipated that the data collection and sharing system currently being implemented at the Huay Luang Reservoir, Udon Thani, following the application of the Guidelines, is, through improved management of the reservoirs resources, expected to directly benefit the livelihoods of more than 700 full-time fishers. Approximately 18,000 part-time fishers; water users; and 8 schools in three sub-districts are also anticipated to benefit indirectly from the shared information, and improved utilization and management of the reservoir resources.

Other co-management stakeholders in these two countries are also expected to benefit from the improved data collection systems, particularly the DoFs and their administrative sub-divisions. Improved data collection systems will improve their capacity to formulate, implement and evaluate policy and development plans aimed at sustaining or increasing production and improving the livelihoods of the poor.

6.2.3 Improved Knowledge and Capacity to Manage Fisheries Resources & Design Data Collection and Sharing Systems

The project activities have helped to improve target stakeholder knowledge and capacity to both manage fisheries and to design effective and sustainable data collection and sharing systems arising from their participation in the project and field testing activities and arising from the projects communication strategy. These impacts are described below:

(i) Arising from direct participation in the project and field-testing activities

From their participation in the evaluation of the Guidelines and the development of new or improved data collection systems, it is anticipated that a least 300 individuals representing four different stakeholder categories have an improved knowledge and capacity to manage fisheries resources under co-management partnerships and design appropriate data collection and sharing systems (Table 16). For example, the Udon Thani workshop participants reported an improved understanding of data and information needs of different stakeholders involved in the management of the reservoir. They also reported improved knowledge of reservoir resources management and raised awareness of the need to consider other sectors when formulating and evaluating management plans and activities.

Table 16 Numbers of stakeholders anticipated to have gained an improved knowledge and capacity to manage fisheries resources and design appropriate data collection and sharing systems. Details of these stakeholders are listed in the Guidelines Evaluation Reports (see Annex 3).

	Stakeholder	Bangladesh	Thailand	Total
DoF Staff	Fisheries Officers	31	3	34
	Biologists/technicians/planners	0	12	12
	Other Gov. Depts.	3	7	10
	Research Institutions	0	4	4
Project Staff	FFP Staff	9	0	9
	WorldFish Centre/CBFM Staff	40	0	40
	MRC Staff	0	4	4
NGOs	NGO staff	34	0	34
Local Managers	Resource users	120	34	154
	CBOs	15	0	15
	Total	252	64	316

It is estimated that over 2000 people will receive the FAO Guidelines through the FAO channels and this in turn will increase their capacity in designing and implementing data collection systems. Through the communications work it is estimated that over 4,500 stakeholders have been made aware of the forthcoming guidelines and so are more likely to make use of them in their work.

(ii) Arising from the Projects' Communications Strategy

As a result of the project and the guidelines a number of collaborators have increased their understanding of data and information collection systems for co-management (). The participatory nature of developing the guidelines resulted in a high-level of stakeholder buy-in to the main concepts including the need for a systematic approach, the need for participation and the need to share data and determine communications channels Table 11). All collaborators agreed that guidelines were required and that the FAO guidelines provided 'highly useful' guidance for co-management stakeholders.

Communications by the project collaborators succeeded changing some of the knowledge and attitudes of key stakeholders. In particular in Bangladesh the knowledge of data collection systems within the Ministry for Fisheries was increased from very low to medium and their attitude to improving systems was increased from 'some interest' to 'medium level of interest.' The knowledge of the LGED and Department of Environment was increased and the attitude of the provincial government and the Department of Environment became more positive towards the end of the project.

Also see details of communications activities reported in Section 4.5.

6.3 Further Work

6.3.1 Reporting future desk-based evaluations of the Guidelines and further or planned uptake

Reporting future desk-based evaluations

A feedback questionnaire will be sent out together with the FAO Fisheries Technical Paper requesting feedback from stakeholders how useful the Guidelines are thought to be, if they have used them or intend to use them, and if so what have they used them for, or what do they intend to use them for. Feedback received from the questionnaire will be reported in the next FMSP Annual Report.

Planned Uptake in Laos

Co-management stakeholders from Lao who attended workshops employed during the design of the data collection system for the Huay Luang reservoir, in Udon Thani, NE Thailand (see Section 4.2.3) are currently preparing a proposal to develop data collection systems to support the management of fisheries at four Lao reservoirs using the Guidelines. It is hoped that further information about these proposals or the results of any development activities can be reported in the next Annual Report.

6.3.2 Testing the Guidelines in the Marine Environment and in other Sectors

Whilst the Guidelines have been developed on the basis of insights and experiences of collaborators working in both the freshwater and marine environments, they have, so far, been evaluated or applied only in the former environment. Therefore, whilst we are confident that the Guidelines will be equally applicable, it would be useful to include insights and experiences from workers applying the Guidelines in the marine environment (and elsewhere in the freshwater environment) in future revisions of the Guidelines. Alternatively, these lessons and experiences could be disseminated to the wider research community to demonstrate their wider applicability.

It may be useful to seek feedback on the utility of the Guidelines and means to improve them from other natural resource sectors such as agriculture and forestry. Opportunities may exist to include any recommendations into future revisions of the FAO Guidelines.

6.3.3 Training and Capacity Building

The Guidelines could be used in the future to develop dedicated training packages relevant to information systems for co-management or perhaps a distance learning package.

6.3.4 Means of continued uptake promotion of Guidelines

After the Guidelines have been published in the FAO Fisheries Technical Paper Series, FAO intend to undertake the following promotion activities:

- Make the guidelines available for download via the fisheries publications web pages;
- Upload promotional text/articles about the Guidelines on their FishCode-STF; SFLP and Fisheries Department websites;
- Promote and distribute the Guidelines at the next FAO Committee Meeting on Fisheries; FAO FISHCODE/STF regional workshops and FAO regional fisheries bodies meetings.

It is also planned to advertise the availability of the Guidelines on list servers and via email reminders once they are available on the FAO website, and further raise awareness of the Guidelines at relevant conferences.

A link to the electronic version of the Guidelines and articles on the FAO website will be added to the project's FMSP website after the Technical Paper is published in December 2005. Links to communications products on collaborators' websites and to other relevant websites could also be established.

6.3.5 Ongoing tasks

The GoB DoF with support from the FFP has recently prepared an article describing the Guidelines and their involvement with field-testing them. This article (Annex 12), together with a Bangla version of the *Information For Co-Management* leaflet will be uploaded onto their website shortly. The DoF also intend to circulate the leaflet to its staff members including local government offices and District Fisheries Officers with the project flyer.

7 Publications and Other Communications Materials

7.1 Peer-reviewed publications (published)

None to date.

7.2 Peer-reviewed publications (in press or submitted)

Halls, A.S., Arthur, R., Bartley, D., Felsing, M., Grainger, R., Hartmann, W., Lamberts, D., Purvis, J; Sultana, P., Thompson, P., Walmsley, S. (2005). Guidelines for Designing Data Collection and Sharing Systems for Co-Managed Fisheries. Part I: A Practical Guide. *FAO Fisheries Technical Paper*. **494/1**. Rome, FAO. 2005. 42p.

Halls, A. S., Arthur, R., Bartley, D., Felsing, M., Grainger, R., Hartmann, W., Lamberts, D., Purvis, J; Sultana, P., Thompson, P., Walmsley, S. (2005). Guidelines for Designing Data Collection and Sharing Systems for Co-Managed Fisheries. Part II: Technical Guidelines. *FAO Fisheries Technical Paper*. **494/2**. Rome, FAO. 2005. 108p.

See Annex 1 or <http://www.fao.org/documents/>

7.3 Non-peer reviewed publications, reports and communications materials

7.3.1 Promotion Material

Project Flyer: *Information For Co-Management: Guidance For Developing Data Collection Systems For Co-Managed Fisheries*, July 2005 (see Annex 8).

Poster: *Looking for guidance to support co-managed fisheries?* (see Annex 9)

Information Leaflet: *Information for Co-Management* (see Annex 10).

Policy Document: *Data Collection: Systems for Co-Management*, Synthesis Document, October 2005, London, MRAG Ltd, 17pp. (see Annex 11).

7.3.2 Articles and Newsletters

- Halls, A.S., Mustafa, M.G. & Rab, M.A. (2005). Testing Guidelines for Designing Data Collection Systems for Co-Managed Fisheries. *Community-Based Fisheries Management News*, Dhaka, WorldFish Centre, **5**, August 2005. (see Annex 17).
- Halls, A. S. (in press) New Guidelines for Designing Monitoring Programmes for Co-Managed Fisheries—publication announcement. *NAGA*, Volume **XX**, December 2005. pp **XX-XX**. (see Annex 13).
<http://www.worldfishcenter.org/publications/naga.asp>
- Walmsley, S., & Halls, A. S. Addressing challenges in co-management information systems. ID21 research highlights – rural livelihoods. The article has been accepted and will be published in the next few weeks <http://www.id21.org> (see Annex 14).
- Hartmann, W. (in press). Participatory data collecting and data sharing mechanism for resources management in Huay Luang reservoir, Udonthani, Thailand. *Catch and Culture* http://www.mrcmekong.org/programmes/fishery/fish_catch_culture.htm

7.3.3 Guidelines Evaluation Reports

- Kashem, M.A., Rab, M.A. & Mustafa, M.G. (2005). Field Testing of Guidelines for Designing Data Collection and Sharing Systems for Co-Managed Fisheries. Dhaka, WorldFish Centre, 47p.
- MRC (2005). Summary Report of Developing Data Sharing System and Participatory Data Collection Workshop in Huay Luang Reservoir, Udonthani, Thailand. Vietianne, MRC, 14p.
- Sultana, P. (2005). *Draft Evaluation Report with Fourth Fisheries Project, Bangladesh*. Dhaka, 29p.

See Annex 3.

7.4 Verbal presentations and project dissemination and other workshops

- The flyer and the *Information For Co-Management* leaflet (Section 7.3.1) were promoted through email and through project collaborators including the Mekong River Commission, Forth Fisheries Project and Community Based Fisheries Management Projects in Bangladesh. The flyer was translated into Benglai by the Forth Fisheries Project and also distributed at the Fish Fortnight Conference in Dhaka, Bangladesh in August 2005 attended by a wide range of the project's target communication stakeholders. It was circulated among Department of Fisheries' officials as well as among the visitors to the Fish Fair. In total 350 flyers were sent out to stakeholders and many more were distributed through events such as Fish Fortnight.
- The flyer was distributed to participants at the ParFish training workshop in India in July 2005. 15 people from a range of community-based, state and national level fisheries management, research and teaching institutions from India, Kenya and Tanzania were at the workshop and received the project flyer.
- The poster was displayed at twelve meetings or event in total.
 - This included the ParFish training workshop in India June 05; the Final Guidelines Evaluation Workshop in Bangladesh June 05; a climate change and fisheries meeting at DFID headquarters, London. Sept 05; a stock assessment training workshop in Bangladesh in Sept 05; and the FAO FISHCODE meeting in Rome in Sept 05.

- The poster was also displayed at the XIX Annual Meeting of the Society for Conservation Biology, at the Universidade de Brasília, Brazil, 15-19 July 2005, attended by about 1000 scientists, academics and students.
- Ten copies of the poster were displayed during the Fish Fortnight event in Bangladesh and posters were also on show during Co-management meetings in Thailand (See Table 5). It is estimated that over 3,000 people in total were exposed to the poster.

7.5 Other types of project output (e.g. literature reviews, websites etc)

7.5.1 Websites

- **R8462 Project Website:** Containing details of the project, latest project developments and downloadable communications products. <http://www.fmsp.org.uk/r8462.htm>
- **OneFish Website:** The English version of the flyer (Section 7.3.1) and the Information For Co-Management leaflet have been uploaded onto the OneFish Website (see <http://www.onefish.org>), the latter of which was highlighted in OneFish's monthly email summarising latest additions to the site.
- **MRC Website:** The flyer and the *Information For Co-Management* leaflet have also been uploaded onto the Mekong Research website. This includes a link to the FMSP website. (see http://www.mekonginfo.org/mrc_en/doclib.nsf/0/43D606A65586D8E4472570680011C18F?OpenDocument).
- **STREAM Website:** The information leaflet together with an article describing the project (see Annex 16) will appear on the STREAM website under their Other Organisations Webpage. <http://www.streaminitiative.org/Library/organizations/index.html>
- **Government of Bangladesh, Department of Fisheries Website:** The DoF is planning to upload the *Information for Co-Management* leaflet onto their website (<http://www.mofl.gov.bd/>) together with an article describing the results of their field evaluation activities of the Guidelines under the Fourth Fisheries Project (see Annex 12).

7.5.2 Other

- The flyer (Section 7.3.1) was distributed to 73 stakeholders by email. The break down according to stakeholder categories is provided in Table 4, and the distribution list given in Annex 5.

References cited in FTR

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Project Logframe

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
Goal			
Existing FMSP research outputs relating to: the contribution of <u>capture</u> and <u>enhancement</u> fisheries to the livelihoods of the poor; fisheries management tools and strategies that could benefit the poor; and, the means to realise improved management, further developed, disseminated and promoted to relevant stakeholders at all levels.	Information systems to support the co-management of fisheries important to the poor field tested with target groups and institutions in at least three locations in two countries, adapted, and widely promoted (in target countries, international knowledge systems and DFID) by 31 March 2006.	<p>Programme Management review</p> <p>Project FTRs</p> <p>Programme highlights</p> <p>Publications and other communications materials</p> <p>Teaching materials</p> <p>Fisheries management tools</p> <p>Quarterly and annual reports</p> <p>FMSP project database</p> <p>FMSP Website</p> <p>Requests for manuals and guidelines received</p> <p>Uptake of research products by target institutions monitored and reported in Annual Report</p> <p>National statistics and publications</p> <p>International networks, databases and publications</p>	<p>Policy makers remain receptive to information on fisheries management</p> <p>Government policies continue to support co-management</p> <p>Government policies continue to support pro-poor approaches</p> <p>Target beneficiaries remain receptive to management approaches proposed.</p> <p>Stock enhancement process cost effective and socially appropriate.</p> <p>Target beneficiaries adopt and use strategies</p>
Purpose			
FMSP guidelines for designing and implementing fisheries data collection and sharing mechanisms for co-management applied with target institutions, adapted, and with lessons learnt, widely promoted, including relevant DFID bilateral country projects.	<p>1. By October 31 2005 FMSP guidelines for designing and implementing data collection systems field-tested (applied) under at least 3 co-management projects in east Africa, and south and south-east Asia.</p> <p>2. By October 31 2005 (continued) uptake or use of the guidelines (in these and) in other countries or under different co-management projects.</p>	<p>Final Guidelines</p> <p>Field-testing</p> <p>Evaluation Workshop Report.</p> <p>Project Reports, and publications.</p> <p>FMSP Guidelines</p> <p>DFID and other donor funded bilateral country projects.</p>	Target institutions are receptive to outputs.
Outputs			
1. Widely promoted field-tested <i>technical</i> guidelines for designing and implementing data collection and sharing systems for co-managed fisheries important to the poor.	1. By month 4, technical guidelines further field-tested or evaluated under the following DFID and other donor funded bilateral country projects: (a) CBFM2 project, Bangladesh, (b) MRRF Project, Lower Mekong basin, (c) (d) FFP, Bangladesh, (e)	<p>Final Guidelines</p> <p>Field-testing</p> <p>Evaluation Workshop Report.</p> <p>Evaluation Questionnaires</p>	Effective field-testing and evaluation is possible within a four month period or continuing from field testing

<p>2. Through field-testing or adoption of the guidelines, established or improved data collection and sharing systems in co-managed fisheries important to the poor in DFID's FMSP geographic focus.</p> <p>3. Widely promoted concise <i>non-technical</i> versions of the guidelines containing lessons learnt from the application of the full technical guidelines, tailored to meet the needs of different target communication stakeholders (cross cuts to FMSP activity 6.2, Project 05/09).</p>	<p>MACH Project, Bangladesh, (f) FAO Capacity Building Project on Lake Victoria (see Table 1).</p> <p>By month 7, technical guidelines, adapted in response to the outcome of field-testing and evaluation, published in the FAO Fisheries Technical Paper Series, and promoted via a variety of channels and media (see communication matrix attached).</p>	<p>Quarterly, annual and FT reports.</p> <p>Distribution lists for FAO Fisheries Technical Paper.</p> <p>DFID and other donor project reports.</p> <p>Project 05/09 quarterly, annual and FT reports and related output.</p>	<p>activities begun under R8285.</p> <p>FMSP guidelines will improve the design of data collection and sharing systems for co-managed fisheries important to the poor.</p>
	<p>2. By month 4 (but also beyond the life of the project) data collection and sharing systems for co-managed fisheries (or their designs) established or improved in at least three of the following countries Bangladesh, Kenya, Lao PDR, Thailand, and Vietnam.</p>	<p>Distribution lists for policy briefs</p> <p>Articles within donor magazines or circulars</p> <p>Flyers</p> <p>Library databases</p> <p>Requests for guidelines</p> <p>Web links</p>	<p>Measurable improvements in data collection systems can be detected during the life of the project.</p> <p>Capacity exists to establish or improve data collection systems</p> <p>Field-testing and evaluation leads to uptake and improved data collection systems.</p>
	<p>3. By the end of month 5, at least two concise, non-technical and highly visual versions of the guidelines containing lessons learnt from the field testing and evaluation phase produced and promoted via a variety of channels and media (see communication plan attached) and made available to Project 05/09.</p>		
Activities	Milestones		
1.1 Stakeholder analysis with project partners to identify specific communication stakeholders, products and pathways to promote both the full technical guidelines and the concise non-technical versions.	1.1 By the end of month 1, a detailed communication and uptake plan building upon the communications matrix attached including details of activities for monitoring the implementation of the plan.		
1.2 Develop and distribute promotion material to generate interest and awareness of forthcoming guidelines, flyers etc (see comms plan)	1.2 By the end of month 1, promotional material distributed to key communication stakeholders.		
1.3 Develop questionnaire to evaluate the utility of the guidelines and distribute to project collaborators with a copy of the draft <i>technical</i> guidelines.	1.3 By end of month 1, questionnaire to evaluate utility and uptake of the guidelines (including indicators) developed and circulated to project partners along with the existing draft <i>technical</i> guidelines.		
1.4 Final Guidelines Evaluation Workshop held in Bangkok? to identify necessary changes and revisions to the <i>technical</i> guidelines and to report on lessons learnt from their field application and evaluation (see activity 2).	1.3 By end of month 5 Final Guidelines Evaluation Workshop Report, with details of future uptake and adoption plans of project partners (including details required for project impact monitoring purposes).		

1.5 Review and revise the communications plan	By end of month 6, results of the review of the communications plan reported in the Q2 report.	
1.6 Revision, adaptation and promotion of technical guidelines incorporating lessons, and feedback from evaluation workshop and questionnaire (see communication plan attached).	1.5 By end of month 7 Final Version of technical guidelines published in the FAO Fisheries Technical Paper Series and widely promoted.	
2 On-going and additional field-testing and evaluation of <i>technical</i> guidelines to (further) test their validity and utility (see Table 1).	2 By month 4 guidelines field tested or evaluated for between 3-9 months in at least three countries.	
3.1 Production of at least two concise, <i>non-technical</i> and highly visual versions of the guidelines containing lessons learnt from the field testing and evaluation phase and tailored to needs of different communication stakeholders, and made available to Project 05/09.	3.1 By month 6 at least two <i>non-technical</i> versions of the guidelines produced.	
3.2 Promotion of <i>technical</i> and <i>non-technical</i> guidelines including and beyond existing project partners via a variety of channels and media (see communication plan attached)	3.2 By the end of month 7 <i>technical</i> and <i>non-technical</i> guidelines promoted with a short questionnaire (3 questions?) to further assess the utility and likely future uptake of guidelines.	

8 Keywords

Fisheries, Information, Monitoring, Co-Management, Data

9 Annexes

Annex 1 The FAO Fisheries Technical Paper Parts 1 & 2

(For electronic version please see: Annexes\FAO Guidelines\494_Part I.pdf and 494_Part II.pdf)

Annex 2 Final Guidelines Evaluation Report

(For electronic version please see Annexes\Evaluation Reports*.Doc)

Annex 3 Guidelines Evaluation Reports

Contents:

Fourth Fisheries Project Report (Bangladesh)

WorldFish Report (CBFM Project) (Bangladesh)

MRC (MRRF Project) (Thailand)

Annex 4 Abstract of the paper presented at the 7th Technical Symposium on Mekong Fisheries, November 2005, Ubon Ratchathani, NE Thailand.

Participatory data collecting and data sharing mechanism for resources management in Huay Luang reservoir, Udonthani, Thailand

Phairat Phromthong¹, Jaruk Nachaipharm² and Benjamas Musikaew²

Abstract

Fishery resources management in Huay Luang reservoir is one program affiliated by Department of Fisheries and MRRF component since 2001. Continuing consultation with local stakeholders identified that they have lacked adequate information of Huay Luang for their management and planning. Even some information has been regularly collected by government organizations, but there were no appropriate data sharing mechanisms.

The workshops among all local stakeholders from ten communities, four primary schools, three Tambon Administration Organizations (TAO), Provincial Fisheries Office, Udonthani Inland Freshwater Research and Development Center (IFRDC), Provincial Natural Resources and Environment Office, Tourism Office and Irrigation Project Office were held in January and September 2005 to identify the data and information needed by all local stakeholders and to develop a sustainable way of data collection methodology and sharing system for resources management and planning of Huay Luang Reservoir.

An information needed by all local users were identified as initial priorities in four main issues, namely, water level and management strategies of Department of Irrigation; water quality in reservoir and sources of water pollution; and fish production from reservoir; annual development plan which related to Huay Luang Reservoir of all government organizations and non-government organizations.

The Data collection methodology agreed among all users was to conduct a so called "folk research" on water quality monitoring by monthly basis and collection fish catch by fisherman in all target communities by local researchers represents from each community within technical supervision by government agencies. Data sharing mechanisms was developed during the workshop and based on current capacities and lesson learned of government agencies and integrated with existing sharing system of TAOs and communities and schools under their affiliated area. The activities at Huay Luang were promoted in the context of a DfID-funded project on "Data Collection and Information Sharing for Fisheries Co-management" which is jointly implemented by a number of fisheries development organizations under the leadership of MRAG Ltd, England. A draft "Field Guide on Data Collection and Sharing", which is a product from the DfID-project, was useful in developing the methodology used at Huay Luang. The promising data

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² Khon Kaen Inland Fisheries Research and Development Center

sharing mechanism will be continue to be tested through the Participatory Action Research process (PAR) for consensus learning process among all local stakeholders.

Keywords: Partiipatory data collecting and sharing; Huay Luang reservoir

Presentation type: Poster presentation

Annex 5 Distribution lists for project flyer, policy brief and FAO Guidelines

Distribution of the Information collection flyer by email

Stakeholder Category	Organisation	Name
Policy makers (10)	DFID	Tim Bostock
	DFID Cambodia	Chris Price
	DFID India	Kevin Crockford
	FAO	Richard Grainger
	FAO	Fabio Pittaluga
	FAO	Devin Bartley
	World Bank	Indu Hewawasan
	ADB	Olivier Serrat
	NORAD	Kristen Bjoru
	SIDA	General
National implementation organisations (17)	Africare	General
	MACH, Bangladesh	Paul Thompson
	CHARM, Thailand	Yves Henocoque
	Department of Fisheries, Bangladesh	Swapan Chandra
	Department of Fisheries, Bangladesh	Dr Sitdhi Boonyaratpalin
	Forth Fisheries, Bangladesh	Arne Andreason
	Department of Fisheries, Cambodia	Thay Somony
	Department of Fisheries, Andhra Pradesh, India	Raju Venkata
	Conservation society for the Galapagos	Alex Hearn
	AID India	General
	Department of Natural Resources, Philippines	Hehrson Alvarez
	Department of Fisheries, Cambodia	General
	Department of Fisheries, Thailand	Dr Mala Supongpan
	IMWI	Sophie Nguyen
	LARReC	General
	Udon Thani Fisheries Station, Thailand	Kanokporn Deeburee
Regional and International Implementing Organisations (27)	World Fish	Patrick Dugan
		Christopher Bene
		Simon Heck
		Ilona Strobutzki
		Blake Ratner
		Eric Baran
		Kuperan Viswanathan
		Madan Dey
		Mark Prein
		Sugunan VV
	WWF Living Mekong	Marc Goichot
	Aquaculture Asia	Simon Wilkinson
	Asian Fisheries Society	Elsie Tech
	Australian Mekong Resource Institute	Doug Bailey
	CBNRM Net	Lars Pedersen
	Community Based Coastal Resources Management	General
	IDRC	Silke Reichrath
	IIED	General
	LakeNet	Dr Barker
	NACA	Mike Philips
	Participatory Development for Natural Resources Management	General
	Bay of Bengal Programme	Yugraj Yadava

	CORDIO	David Obura
	SFLP	Benoit Horemans
	LVFO	James Scullion
	LVFO	Richard Ogutu
	NOAA	Paul Dalzell
Promotion organisations (2)	STREAM	Graham Haylor
	STREAM	Paul Bulcock
International research organisations (2)	Agricultural research	Jurgan Hagmann
	Ford Foundation Vietnam	Charles Bailey
National research organisations (7)	AID India	General
	CIFRI, India	Dr Utpal Bhaumik
	CIFRI, India	Pradeep Katiha
	KMFRI, Kenya	General
	TAFIRI, Tanzania	General
	Kerala Central Marine Fisheries Research	Mohan Modayil
	Mumbai Central Institute for Research	Dr Mukherjee
Capacity building organisations (3)	Hull University	Ian Cowx
	Reading University	Bob Burn
	Philippines University	Roberto Pagulayan
Consultants (5)	Independent	Eric Meusch
	Independent	Daniel Pauly
	Independent	Inigo Everson
	Independent	Ian Bryceson
	Independent	Barry Pound

Distribution of the policy brief

Name	Institution
Tim Bostock	DFID Policy
Simon Anderson	DFID Policy/Research
Richard Beales	DFID Policy
Robert Carlisle	DFID Policy
Jim Harvey	DFID Policy
Paul Ackroyd	DFID Bangladesh
Joanne Alston	DFID Caribbean
Sam Bickersteth	DFID Bolivia
Bella Bird	DFID Vietnam
Simon Bland	DFID Kenya
Elizabeth Carriere	DFID Jamaica
Ashim Chowla	DFID India
Shantanu Das	DFID India - West Bengal
Elizabeth Ditchburn	DFID Tanzania
Alan Tollervey	DFID Uganda
William Kingsmill	DFID Nigeria
Daniel Kisauzi	DFID Uganda
Martin Leach	DFID Bangladesh
Mark Mallalieu	DFID South East Asia
Miranda Munro	DFID Caribbean
Hushe Mzenda	DFID Southern Africa
Supriya Pattanayak	DFID India - Orissa
Rex Quaye	DFID - Ghana
Duncan Roy King	DFID - Bangladesh
Charlotte Seymour-Smith	DFID - India New Delhi
David Stanton	DFID - Tanzania

Sue Wardell	DFID - Southern Africa
John Winter	DFID - Ghana
Erick Zeballos	DFID Bolivia
Chris Price	DFID Cambodia
Kevin Crockford	DFID India
Simon Croxton	DFID SE Asia
Patricia Silva	World Bank
Nina Doetinchem	World Bank - Tanzania
Indu Hewawasam	World Bank - Tanzania
Ron Zweig	World Bank
Olivier Serrat	ADB
Robert Carreau	Administrator EU Aid
Anne Sweetser	Asian Development Bank
Lennox Hinds	Canadian Development Administration
DANIDA	DANIDA
Roland Hanff	DG Dev Document Centre
Cornelia Nauen	EU IC Research
Fabio Pittaluga	FAO
FAO India	FAO
Richard Grainger	FAO
Serge Garcia	FAO
Simon Funge-Smith	FAO Asia
Dr Benedict Satia	FAO
Rolf Willmann	FAO
Jaques Prade	Fisheries Cooperation, DG Dev EU
Marc Steinlin	Helvetas
Kirsten Bjoru	NORAD
SIDA	SIDA
Melita Samoilys	IUCN
Oviedo Gonzalo	IUCN
Devin Bartley	FAO
Patrick Dugan	WorldFish Centre
Graham Haylor	STREAM
Paul Bulcock	STREAM
Christopher Bene	WorldFish Centre
Simon Heck	WorldFish Centre
Ilona Stobutzki	WorldFish Centre
David Obura	CORDIO
Blake Ratner	WorldFish
Eric Baran	WorldFish
Kuperan Viswanathan	WorldFish
Madan Dey	WorldFish
Mark Prein	WorldFish
Parvin Sultana	WorldFish
Sugunan VV	WorldFish
WorldFish Cambodia	WorldFish

Annex 6 The KAP Survey Questionnaire

Knowledge, Attitudes and Practice Questionnaire

Data Collection and Sharing Systems

Name of respondent

Date

Organization

Position

Please complete the following questionnaire. This is to help the project monitor changes in knowledge, attitude and practice of stakeholders with respect to data collection and sharing systems.

Where a single box is provided please enter in a score from 1-5 as given below. There are lines provided for text answers. Please add text to the lines underneath and insert more lines as required.

Scoring

1 = None/not at all
2 = Low
3 = Medium
4 = High
5 = Very high

Knowledge

1. Are you familiar with the content of the FAO Guidelines for Data Collection and Sharing Systems?

	Yes	No
Practical guidelines		
Technical guidelines		

2. How would you rate your understanding of information and data collection systems for co-management?

	Score
Before using the guidelines	
After using the guidelines	

Comment:

Attitudes

Score:

1. How do you rate the importance of information for co-management?

Comment:

2. To what extent is there a need for a systematic approach to information collection and sharing for co-management?

Comment:

3. To what extent is there a need for participation of a wide range of stakeholders when designing a data collection system for co-management?

Comment:

4. In your understanding, does sharing of information reduce overlap in data collection systems?

Comment:

5. In your opinion is there a need for guidance to assist stakeholders design an information collection and sharing system?

Comment:

6. In your opinion do the FAO technical and practical guidelines provide sufficient assistance to stakeholders to design an information collection and sharing system?

Comment:

7. In your opinion does the eight-step approach in the guidelines capture the main steps required to design a data collection and sharing system?

Comment:

Practice

Please tick yes or no in questions 1-4.

1. Have you used the FAO Technical or Practical Guidelines for Information Collection and Sharing Systems in your work?

	Yes	No
Technical Guidelines		
Practical Field Guide		

Comment:

2. If you have not yet used the technical guidelines, how likely are you to use them in the future?

	Very likely	Likely	Possibly	Unlikely
Technical Guidelines				
Practical Guidelines				

3. How would you rate the Technical and Practical Guidelines for current or future use?

	Very useful	Useful	Only slightly useful	Not at all useful
Technical Guidelines				
Practical Guidelines				

Comment:

4. Do you think the Guidelines will be useful to other stakeholders involved in co-management? If so which stakeholders.

	Yes	No	Stakeholders
Practical Guidelines			
Technical Guidelines			

5. Is your organisation involved in developing data collection and sharing systems?

Yes	No

Comment:

If **yes**, please answer the following questions:

To what degree does your organisation currently.....

Score:

Use a systematic approach to assist designing data collection and sharing for co-management?

☐

Comment:

6. Involve a range of stakeholders when designing and implementing data collection and sharing systems?

☐

Comment:

7. Identify common data needs between stakeholders before designing an information collection system?

☐

Comment:

8. Review existing data collection systems and assess the gaps before designing an information collection system?

☐

Comment:

9. Identify data and information sharing pathways as part of a data collection system?

☐

Comment:

10. Design data recording and data management systems for the collection of data?

☐

Comment:

11. Review data collection systems on a regular basis?

☐

Comment:

Stakeholder Knowledge, Attitude, Practice and Influence

11. Which stakeholders do you think are likely to use the technical guidelines and the practical field guide?

	Stakeholders
Technical Guidelines	
Practical Field Guide	

Annex 7 The Communications Monitoring Form

Communications Monitoring Forms

Data Collection and Sharing for Co-Management

Name of respondent

Date

Organization

Position

Instructions

Please complete the following questionnaire. There are references made to Categories of Stakeholder throughout the questionnaire. Please use the following numbering.

Categories of Stakeholders

1. Policy makers & influencers
2. National implementing organisations
3. Regional and International implementing organisations
4. National Research Institutions
5. Regional Research Institutions
6. Capacity building/training organisations
7. Promotional organisations
8. Target beneficiaries
9. Other

Questions

1.1. Have you distributed any project flyers? Yes ☐ No ☐

1.2 If you have distributed flyers, who have you sent it to, and in which language?

Stakeholder category	Number of people within stakeholder category received flyer	Example organisations	Language of flyer

2.1 Have you published an article in a newsletter? Yes ☐ No ☐

2.2 If yes what is the distribution of this newsletter?

Give estimated numbers of people distributed by post, email and in-person.

.....

Describe the types of stakeholders distributed to (see categories above)

.....

What language is the newsletter published in?
.....

3.1 Have you presented the FMSP poster at any meetings/events? Yes ☐ No ☐

3.2 If you have presented the poster describe the occasion and the audience.

What was/were the occasions?
.....

Estimated number of people present?
.....

Type of stakeholders present (see categories above)
.....

4.1 Have you publicised the project on a web-page? Yes ☐ No ☐

4.2 If yes, what is the address of the web-page?
.....

4.3 What is on the webpage (tick all that apply)

- ☐ Description of the project or an article about the project
- ☐ Project flyer for download – please state in which languages: _____
- ☐ Co-management leaflet for download – please state in which languages: _____
- ☐ Link to the project website

4.4 Are hits on the webpage measured? If so give an average hit-rate per month or year.
.....

5.1 Have you given presentations or held any one-to-one meetings on the project?
Yes ☐ No ☐

5.2 How many people and what types of stakeholders were present?

Stakeholder category	Number of one-to-one meetings per stakeholder category	Example organisations	Comment on any positive outcomes of meetings

6.1 Have there been any radio or TV broadcasts on the project? Yes ☐ No ☐

6.2 If yes, give details.

.....

7.1 Have there been any newspaper articles on the project? Yes ☐ No ☐

7.2 If yes, give details.

.....

8.1. Have you distributed any press releases on the project? Yes ☐ No ☐

8.2 If yes who were they distributed to?

.....

9.1 Are there any other dissemination or communication activities you have undertaken? Yes ☐ No ☐

9.2 If yes, list them below

.....

.....

.....

.....

10.1 Have you distributed guidelines or the field guide? Yes ☐ No ☐

10.2 If yes, who have you sent them to, and in which language?

a) Guidelines

Stakeholder category	Number of guidelines sent to this category	Language

b) Field Guide

Stakeholder category	Number of field guides sent to this category	Language

Annex 8 The Project Flyer: *Information for Co-Management*

JULY 2005

INFORMATION FOR CO-MANAGEMENT

GUIDANCE FOR DEVELOPING DATA COLLECTION SYSTEMS FOR CO-MANAGED FISHERIES

This flyer is the first in a series following the development of guidance to support the design of data collection systems for co-managed fisheries. It covers:

- Why develop co-management information systems?
- What Guidance is available?
- Who is the Guidance for?
- Where is the Guidance being tested?
- Further information.



Why develop co-management information systems?

Information is vital to be able to make informed choices and decisions concerning the management of natural resources.

There are four basic categories of information typically required to support co-management arrangements (see box).

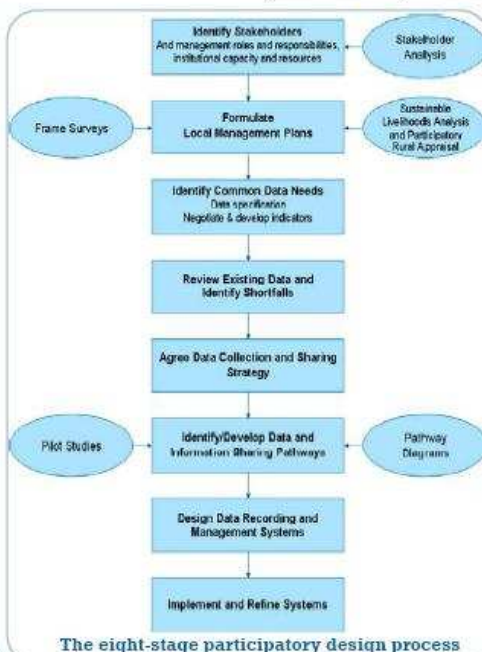
With the shift towards fisheries co-management (including decentralised

Box: Types of information to support management

Policy	Information to formulate and evaluate national fisheries policy and development plans.
Planning	Information to formulate and adapt local management plans.
Implementation	Information to implement management plans including enforcing rules and regulations.
Evaluation	Information to evaluate implementation of local management plans.

and collaborative approaches) there is a need for managers to reflect upon their new roles and reconsider their information requirements.

Data collection systems must be designed to support the diverse needs of a range of potential stakeholders according to their objectives, capacity, and available resources.



What Guidance is available?

In order to meet the growing need for simple guidance to develop data collection systems to support co-management the following products have been developed:

1) **Technical Guidelines** providing details on an eight-stage participatory process for designing data collection and sharing systems for co-managed fisheries.

The Guidelines also provide examples of data types that can be selected and an overview of data sources and collection methods.

This will be published as an FAO Technical Paper.

2) **Field Guide**

A summary of the Technical Guidelines and a practical guide for putting data collection and sharing systems into practice.

In addition to these two main products this project will also produce the following:

- **Policy brief:** synthesising the main points in the context of fisheries co-management issues;
- **Newsletters:** articles within collaborators publications
- **Leaflets:** providing guidance on the importance of data and information in co-management.

Information for Co-management

Who is the Guidance for?



Discussion of results from catch composition surveys with users, Lao PDR

The Guidance can be used by Local Management Institutions (LMIs), National Fisheries Management, Non Governmental Organisations (involved in fisheries management), Fisheries Research Institutes, Fisheries Training Organisations and other stakeholders.

It is hoped that at the local level, the Guidelines will enable fisher community to make informed choices and decisions concerning the co-management of their resources to improve their livelihoods.

The Guidelines will also assist national fisheries departments to design appropriate systems to generate data and information to:

- Meet national and international reporting responsibilities;
- Define information needs to inform policy;
- Share lessons of success (and failure) among local managers;
- Design monitoring systems for management plans;
- Coordinate local management activities.

Where is the Guidance being tested?

The Technical Guidelines and Field Guide were developed in collaboration with a range of

collaborators, involving institutions and stakeholders from all management and advisory levels (see box).

Project Collaborators:

The Food and Agriculture Organization (FAO), the Mekong River Commission (MRC), Lao, the Community-Based Fisheries Management (CBFM) Project managed by the Worldfish Center, Bangladesh, 4th Fisheries Project managed by Bangladesh Department of Fisheries, the Integrated Lake Management Project, Uganda (ILM), the Sustainable Fisheries Livelihoods Programme (SFLP) in West Africa and the Regional Fisheries Information Systems Project (RFIS) in Southern Africa.

The current project will further evaluate the Guidelines and Field Guide through test case studies in the Lower Mekong Basin under the MRC's River and Reservoir Fisheries Project, and in Bangladesh under the Community-Based Fisheries Management (CBFM2), Fourth Fisheries and MACH projects.

Feed-back will also be sought from managers of the fisheries of Lake Victoria who have used the guidelines to aid management planning and the identification of appropriate data collection strategies.



Testing of the Guidelines with stakeholders in Bangladesh.

Following further testing the Guidelines and Field Guide will be updated and made available to a range of stakeholders (see below).

Further information

Further information can be obtained from:

Website	Download Technical Reports, Flyers, Policy Briefs and related information.	www.fmnp.org.uk
FAO Technical Paper	The Technical Guidelines and Field Guide will be available as a FAO Technical Paper.	Request from contacts below or FAO

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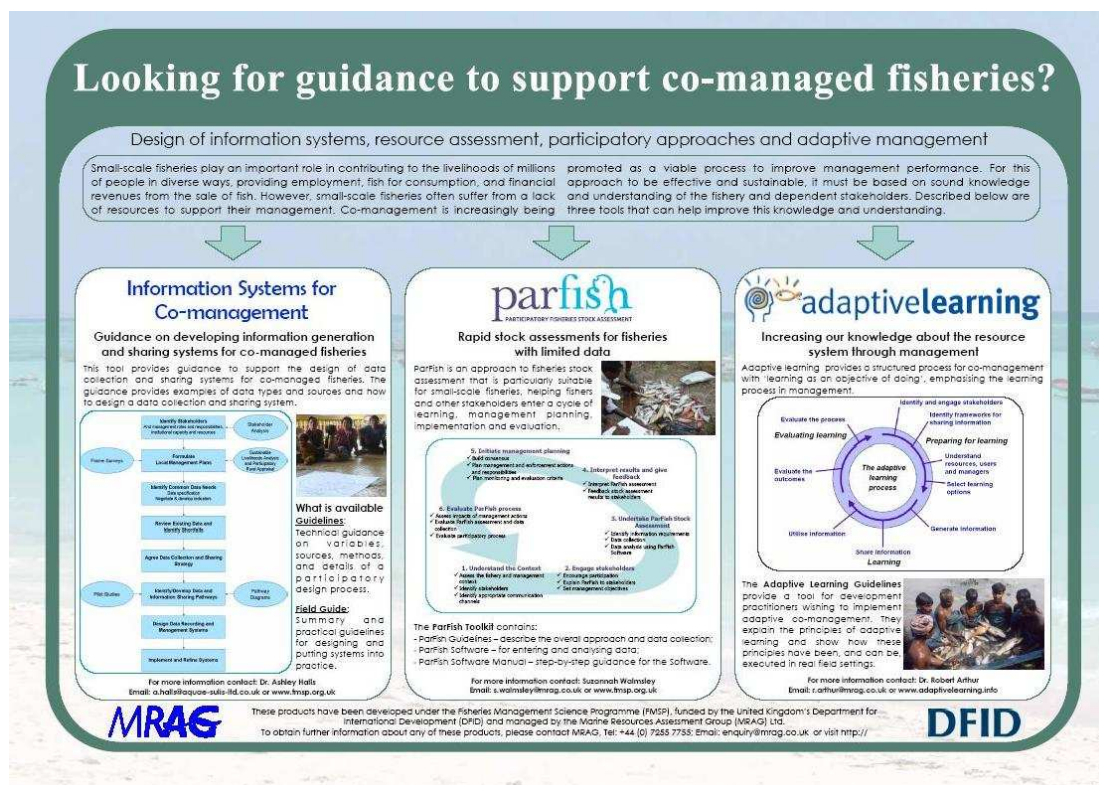
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(For electronic version of translated into Bangla see: Annexes/Bangla Flyer/ *.jpeg)

Annex 9 The Project Poster: Looking for Guidance to Support Co-Managed Fisheries?



Annex 10 Information Leaflet: *Information for Co-Management*

How can the information be obtained?

By using a data collection and sharing system. This is the combination of sources of data, collection methods, networks and activities that provide co-managers with the four categories of information they need to undertake the management process. These systems must be designed to support the diverse needs of a range of potential stakeholders according to their objectives, capacity, and available resources.

What Guidance is available for designing data collection and sharing systems?

A two-part set of guidelines has recently been developed to help fisheries co-managers design and implement appropriate and cost-effective systems to deliver their data and information needs. They are intended to complement, rather than replace, existing relevant manuals and guides already published by FAO.

Part I: **Practical Guide** has been written specifically for co-managers and facilitators working in the field and offers simple and practical advice on identifying the information needs of different stakeholders in relation to their management objectives and responsibilities, and developing collaborative ways of collecting and sharing the information in the most effective way.

Part II: **Technical Guidelines** provide more technical detail on each of the sections included in the Practical Guide, including examples of the types of data that might be of interest to different stakeholders, data collection methods and sources, the design of sampling programmes and some guidance on data analysis and interpretation. They provide field practitioners with an additional resource that can be referenced when necessary, but they are also expected to appeal directly to Department of Fisheries and extension staff, research agencies and academic institutions.

How can the guidance be obtained?

The Guidelines will be published in the FAO Fisheries Technical Paper series before the end of this year and circulated to Fisheries Departments of Member States. You will also be able to download electronic copies free of charge from: <http://www.fao.org/fisherysearch/publications/form.asp?lang=en>. In the meantime, further information can be obtained using the links below.

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Why do co-managers need information?

Co-managers need information to be able to make informed choices and decisions concerning the co-management of natural resources. By using the best available information, co-managers are more likely to be able to make, and put into practice, policies and plans that meet the needs of the stakeholders that they represent.

Who needs information?

This depends upon who the co-managers are. Typically they will include policy makers, usually the Government, and their departmental (e.g. Department of Fisheries, DoF) staff and the local managers who put government policy into practice through management and development plans. Department of Fisheries staff might include Provincial or District Fisheries Officers whilst local managers might include the resource users themselves or a local management institution (LMI) representing their interests.

What information do they need?

The co-managers described above will need information to support the management process (Figure 1). This cyclical process involves making fisheries policy and development plans work in real life.

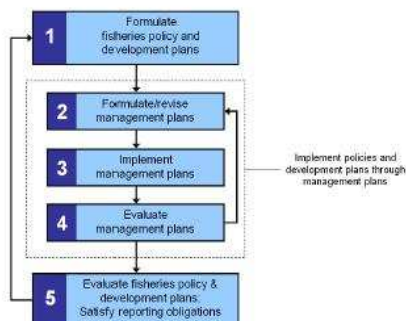


Figure 1: The management process

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Information for Fisheries Co-Management



Introduction

With the shift towards more decentralised and collaborative approaches to natural resource management, there is a need for fisheries managers to reflect upon their new co-management roles and reconsider their information requirements.

This leaflet aims to raise awareness, in particular among fisheries department staff and field workers of the importance of information for the co-management of fisheries resources, and provides links to further information and guidance on how to collect it. It answers the following important questions:

- Why do co-managers need information?
- Who needs information?
- What information do they need?
- How can the information be obtained?
- What guidance is available to design data collection systems?
- How can the guidance be obtained?

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Fisheries policy describes the general goals on how resources should be used and managed including co-management arrangements. These goals are implemented through management plans for each fishery, resource or management unit with the help of local managers. Therefore we can identify four basic categories of information that are needed to support the management process:

Category	Information to...	Examples
1	Formulate and evaluate national fisheries policy and development plans ...and evaluate the success of a co-management policy and meet reporting management and reporting obligations.	Gross value of production (GVP), fish landings, imports and exports, fish consumption, employment in fisheries sector, number of co-managed fisheries, catch per unit effort (CPUE), distribution of benefits.
2	Formulate make or improve local management plans	Fish species, catch weight or value, fishing gears and seasons, socio-economic categories and numbers of fishers, fisheries legislation and management responsibilities.
3	Implement management plans including enforcing rules and regulations, co-ordinating management activities and monitoring and resolving conflicts.	Registers of fishing units and licences, information from various local management plans to coordinate actions.
4	Evaluate local management plan performance.	Abundance or CPUE of different species, income, fish consumption, occurrence of conflicts, fishing effort, environmental factors.

The co-managers will be interested in different categories of information depending on what aspects of the co-management process they are responsible for. For example, governments and their administrative levels will mainly be interested in Category 1 information and also Category 4. The latter can be used to help evaluate the performance of co-management policy. Category 2 and 3 information may also be of interest to help them coordinate local management plans or if they have agreed to help enforce management plans on behalf of the local managers. Local managers on the other hand will be more interested in Category 2 and Category 4 information.

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Annex 11 Policy Document: *Data Collection: Designing and Implementing Systems for Co-Managed Fisheries*

(For electronic version, please see: Annexes/Comms Products/ Policy Doc.pdf)

Annex 12 Bangladesh MoFL Website Article.

(For electronic version please see: Annexes/Comms Products/GoB FFP Website.pdf)

Annex 13 NAGA Newsletter Article: New Guidelines for Designing Monitoring Programmes for Co-Managed Fisheries.

(For electronic version, see: Annexes/Comms Products/ NAGA article.pdf).

Annex 14 Newsletter Article for ID21 research highlights

For ID21 research highlights – rural livelihoods

Addressing challenges in co-management information systems

The increasing shift towards co-management has prompted fisheries managers to reflect upon their new roles and reconsider their information requirements. Co-management creates new challenges for information collection and use, with a larger number of stakeholders involved in the process. However, it also creates new opportunities for developing participatory data collection and sharing systems for their common information needs.

Co-management – the sharing of authority for resource management between government and resource users – is increasingly being implemented as a management system for fisheries where centralised, top-down approaches to management have failed to manage stocks sustainably. Information remains fundamental to the management process, to monitor management approaches and policy, and to develop and implement effective management plans. However, in co-managed systems, a wider range of stakeholders are involved with more diverse information needs, from local resource users and local management bodies implementing local management plans, to national governments setting co-management and fisheries policy.

Useful literature already exists to help co-managers design and implement data collection systems to support their evolving needs. However, much of it has been written for other sectors or with little emphasis on co-managed fisheries. A review of fisheries in seven developing countries found that designing and implementing data collection systems for co-management is challenging. The result is that systems are often poorly designed, resource intensive and unsustainable.

Research, funded under the Department for International Development's Fisheries Management Science Programme, found that:

- co-management raises new challenges for those responsible for the design and implementation of sustainable and efficient systems that can meet the information needs of all the stakeholders involved the management process
- whilst stakeholders' objectives and responsibilities vary, they often have overlapping data and information needs therefore opportunities exist to share data and the responsibility for collecting it
- an eight-stage participatory process was developed for identifying common data needs and designing data collection and sharing systems, which helped meet those new challenges.

The research projects compiled a set of guidelines around this eight-stage design process which will soon be published in the FAO Fisheries Technical Paper Series. The guidelines are currently helping to develop information systems to support the co-management process under a number of donor funded projects including Fourth Fisheries and Community-Based Fisheries Management projects in Bangladesh and under the Mekong River and Reservoir (MRRF) project in the Lower Mekong Basin.

Possible policy approaches for more effective data collection systems for co-managed fisheries systems include:

- encouraging the participation of key stakeholders in the design and implementation of data collection and sharing systems
- communicating the importance of the role of resource users in collecting and sharing information
- raising awareness of resource users of their role in shaping policy and of the importance of ensuring their resources are adequately valued, so that they are recognised in the multi-sectoral planning environment
- ensure feedback to stakeholders for sustained participation and cooperation.

Although specifically aimed at the fisheries sector, it is expected that the guidance provided and the eight-stage participatory process to designing data collection and sharing systems will be applicable to other natural resource sectors where government and resource users share responsibility for resource management.

Annexes

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Keywords co-management, information systems, monitoring, fisheries, data collection

Annex 15 The Project Website

(see <http://www.fmssp.org.uk/r8462.htm>)



Annex 16 The STREAM Article

(For electronic version please see: Annexes/Comms Products/Article for stream website.pdf)

Annex 17 The CBFM Newsletter Article: Testing Guidelines for Designing Data Collection Systems for Co-Managed Fisheries.

Testing guidelines for designing data collection systems for co-managed fisheries

A. Hails, M. G. Mustafa & M. A. Rabb

Since 2002, the WorldFish Centre has been working in collaboration with the Marine Resources Assessment Group (MRAG), Aquaculture Ltd (ASL), the Food and Agriculture Organisation of the United Nations (FAO), and the Mekong River Commission (MRC) to develop guidelines for designing data collection and sharing systems for co-managed fisheries.

The development of these guidelines, funded by the UK Government's Department for International Development (DfID), Fisheries Management Science Programme (FMSP), has focused around an eight-stage participatory design process which aims to provide co-managers, at all levels, with data and information they require to support the management process (Figure 1).

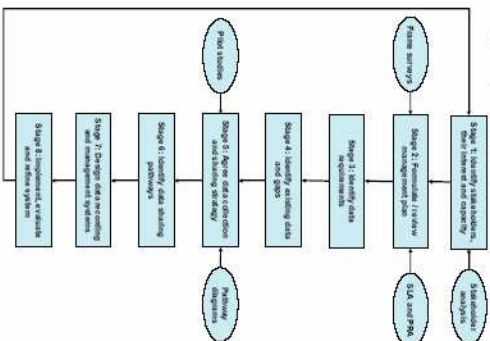


Figure 1. The eight-stage participatory design process.



The WorldFish Centre has played a key role in testing and evaluating the Guidelines under the CBFM Project. In June this year, the Guidelines were field tested with 50 stakeholders at three CBFM sites in Jessore, Tangail and Sunamganj in Bangladesh.

Using the guidelines, the stakeholders, representing the Departments of Fisheries and Agriculture, partner NGOs (PNGOs), Community Based Organizations (CBOs), Local Government Engineering Departments (LGED), the Bangladesh Water Development Board (BWDB) and Local Government and Rural Development (LGRD) were able to discuss and agree upon stakeholder roles and responsibilities by means of small group discussions, and a voting approach.



Stakeholders identifying their information needs.

Stakeholders were also able to identify detailed lists of information requirements to support these roles and responsibilities including explanations for why this information is needed.

In some cases, stakeholders also were able to proceed to stages 5 and 6 of the design process, focusing mainly upon identifying common data needs and potential data collection tools and sources using tables provided in the Guidelines. Potential networks for sharing information among stakeholders were also identified (Figure 2).

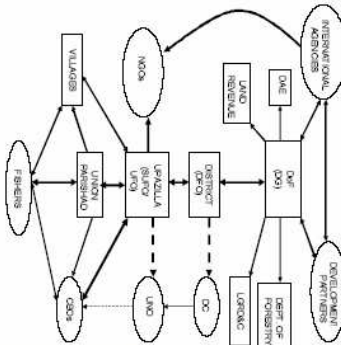


Figure 2. The information sharing network developed by stakeholders at Sunamganj.

It is expected that these preliminary designs can be refined and implemented to ensure that the information needs of local communities and government stakeholders can be sustained beyond the life of the CBFM project.

Summarising the results of the evaluation activities, Dr Mustafa reported that "The Guidelines...would be of immense help to the field practitioners in collecting valid, reliable and pertinent data in the context of co-management".

The Guidelines will be published as a two part FAO Fisheries Technical Paper before the end of this year. Part I: Practical Guide has been written specifically for co-managers and facilitators working in the field and offers simple and practical advice on identifying the information needs of different stakeholders in relation to their management objectives and responsibilities, and developing collaborative ways of collecting and sharing the information in the most effective way.

Part II: Technical Guidelines provide more technical detail on each of the sections included in the Practical Guide, including examples of the types of data that might be of interest to different stakeholders, data collection methods

The guidelines are intended to complement, rather than replace, existing relevant manuals and guides already published in this and other FAO publication series.



Participants presenting their information needs.

Upcoming events

- August
- Fish Fortnight 2005 (August 7-21)
- WorldFish Center and NGOs to fish handling over management of waterbodies to Community Based Organizations (CBOs)
- WorldFish Center DG Steven Hall expected to visit Bangladesh office
- Steering Committee Meeting
- 30th - Project Coordination Meeting at CARITAS office, Nepal
- Memorandum of Agreement (MOU) to fish being signed between CBOs and Department of Fisheries (DOF)
- September
- 12th to 16th - CBFM-2 Portfolio Director, Alan Brooks to visit WorldFish Center Board of trustee Meeting in Cairo, Egypt
- Media Advisory Committee Meeting at FEMCOM office, Dharmara
- Review workshops will be conducted at the waterbody

Please send your stories and photos to the Communications Team

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