Part III. Lessons and Recommendations for Expansion

The first chapter in this part briefly summarizes major lessons learned from implementing activities under this project, and the second and final chapter provides a brief summary of major recommendations for expanding application of lessons learned under the project to other sub-basins.

7. Major lessons from project experience

This chapter summarizes major lessons learned under this pilot project according to lessons regarding the overall approach to participatory integrated sub-basin management, and to lessons associated with major lines of activity under the project.

7.1. Overall approach

There already appears to be very substantial existing interest and basic awareness about issues related to management of natural resources and the environment in Ping River sub-basins. While their linkages with livelihoods and public health are less familiar points for public discussion, in most cases people appear to have little difficulty in understanding why and how such linkages are important. In association with this growing interest and awareness comes recognition of needs to further develop consciousness, knowledge, skills and other dimensions of the capacity of local organizations, communities, groups and individuals. This improved capacity is needed to effectively plan, conduct and assess activities that can improve sustainable management of natural resources and the environment while supporting viable livelihoods and improving public health and other aspects of the quality of life.

Thus, the broad approach of this project was not difficult for local leaders and communities to understand and appreciate. There were questions, however, about how such a broad approach could be achieved under programs of government agencies.

There is also substantial and growing familiarity and experience in Ping River sub-basins that is quite directly related to integrated management of resources in a watershed context. Indeed, considerable relevant work is already in progress at multiple levels in the Ping River Basin:

- ***River Basin Level***. Efforts to establish management organizations at various Ping River sub-basin levels have been underway at least since 1999, when the Lower Ping and Upper Ping river basin committees were established. Under the leadership of the National Water Resources Committee, these organizations have gradually become more participatory, and have established working groups at sub-basin, as well as district, sub-district, and even more local levels. Efforts are underway at the national policy level to further strengthen and provide funding and possibly legal support for these organizations.

  Various local leaders in all project pilot sub-basins have had contact with this process, and generally view this as a good idea. Especially in the two pilot sub-basins in the Upper Ping, however, there is some confusion about the role of these organizations, many observe that there seems to be no support available for implementing activities, and some local organizations and stakeholder groups feel that participation has not yet reached their level.

- ***Government Agency Level***. Although establishment of the Ministry of Natural Resources and Environment included efforts meant to consolidate water resource programs such as development of river basin organizations, it also resulted in efforts to expand their focus on water management to include more attention to other natural resource and environment concerns that should be part of river basin management under MoNRE's mandate. Thus, the Department of Water Resources, the Department of National Parks, Wildlife and Plant

Conservation, the Department of Environmental Quality Promotion, and now the Office of Natural Resources and Environmental Policy and Planning have all conducted or supported various studies, projects and programs aimed at developing sub-basin level management. Unfortunately, there appears to have been little communication and coordination among some of these efforts, as well as various somewhat unclear relationships with Lower and Upper Ping River Basin Committees.

In the view of most local leaders in all pilot sub-basins, this has resulted in much confusion and uncertainty. Since various plans have been made, but very little implementation has taken place, some have begun to question how serious the government really is about river basin management in general, and about local participation in particular. Again, especially in the Ping part 1 and Mae Kuang pilot sub-basins, there are various local organizations and stakeholders who feel these efforts have put strong emphasis on government agency programs and concerns, while other views and needs have been poorly represented, distorted, or not included.

- ***Local Community Level***. A wide range of more local level activities related to natural resources and the environment have also been developing for several years in Ping River sub-basins. Many of these have been induced and/or supported by various government agencies with which they are closely linked. Many others, however, have been developed by traditional local groups and organizations, or by newer locally-initiated issue-oriented local groups and networks, an increasing number of which use local sub-watersheds as an important organization and management unit. Some of these have received different types of support from various non-government, academic, government-related or international sources, while others depend only on local support.

  The distribution of these types of organizations varies among the three pilot sub-basins. In the Ping part 5 sub-basin, government agency-induced groups and networks are dominant, while locally-initiated groups and networks are dominant in the Ping part 1 sub-basin. The Mae Kuang sub-basin has more of a mix between agency-associated and locally-initiated groups and networks, and there has been less interaction among them.

  In terms of their views about participation in river basin programs thus far, most say that participation has focused mainly on those groups and networks most closely associated with the agencies who serve as the organizing patron of any particular river basin activity. Others feel that their views and activities have not been reflected in sub-basin plans, which they feel have been dominated by government agencies, or that they have never really participated in any of these processes. Some are skeptical of river basin programs so far, and concerned that important policy issues seem to be ignored.

It became clear during implementation of this project that all three of these levels of activity need to be considered. Thus, the project's participatory watershed management component (component 1) developed into a two-phase process.

- The first phase was conducted by project pilot sub-basin working groups and was facilitated by project implementation consultants. They made considerable effort to coordinate sub-basin planning activities with existing organizational structures at river basin and sub-basin levels under national and agency programs, as well as with existing plans at province and local government levels. Their work resulted in initial drafts of sub-basin action plans and proposed long-term sub-basin organization structures, with emphasis on similar structures among sub-basins.
- The second phase focused on review of these initial drafts by local leaders and local networks within pilot sub-basins, including both government agency-associated and locally-initiated community level groups according to the sub-basin context, as well as local government

leaders. They emphasized modifying proposed plan and organization structures to make them more appropriate according to local views and conditions.

The final plans and proposed organization structures found in this report were a result of this overall process.

The basic principle of decentralization in integrated river basin management is associated with more efficient and effective management where it is well adapted to local conditions. The differences found in project outcomes in the three pilot sub-basins reflect various aspects of the great diversity of conditions among Ping River sub-basins. Experience with the two phases under the participatory watershed management component of this project has helped clarify why a single uniform approach is not likely to succeed in all sub-basins, and what types of differences are likely to result from allowing sub-basins to adapt the approach to fit more closely with their perceived needs, views and capacities. These results do not suggest that the differences among sub-basin approaches will create major obstacles for efforts to build a larger system of overall management of the Ping River Basin. But they do suggest that efforts to try to force sub-basins to have uniform organizations and plans are likely to reduce the amount of local participation and the effectiveness of river basin management programs.

Results from this pilot project suggest that emphasis in efforts to develop basin and sub-basin management organizations and plans should be placed on developing and strengthening a long-term gradual learning approach at the sub-basin level. This means that these efforts should begin with recognition of the types of relevant organizations, approaches and plans that already exist within sub-basins, including their ideas and perceptions of directions in which they want to develop. Views from Bangkok and national-level programs tend to see the sub-basin as a very small local unit. Views from local areas, however, see the sub-basin as a fairly large unit that needs to incorporate, synthesize and build upon various smaller and more local units of organization and resource management. Results from project activities in the three pilot sub-basins appear to confirm the strong potential for sub-basins to provide an effective venue for interfacing, negotiating and integrating the top-down and bottom-up processes that are both seeking to achieve more efficient, effective, equitable and sustainable management of river basin natural resources and environment. But sub-basins need to have the flexibility, support and time that will be required to realize this potential.

7.2. River Sub-basin Organizations (RSBOs)

There have already been various efforts to begin establishing organizational structures at the sub-basin level, and a substantial amount of awareness and experience already exists. Thus, many people already see the potential value of organization at this level, and are already learning about many of the difficulties and obstacles that it will face.

This project has found considerable agreement across sub-basins on some of the basic roles and duties for a sub-basin management organization. These include:

- ***Problem analysis*** at the sub-basin level is an area where there is broad agreement for an RSBO role, although there are some differences among sub-basins in the degree to which agency officials or local people take the main leadership role in the analysis process;
- ***Sub-basin planning*** is seen as a very important role for RSBOs in all sub-basins. But there are again differences in whether the RSBO has a strong leadership role versus a role more focused on coordination, review and support. There is broad agreement that sub-basin plans need to be compatible with planning processes at local government and province levels, and to various degrees with planning processes of central agencies.

- The general areas of ***participation and public education*** are seen to include campaigns, building awareness and understanding, capacity building and mobilizing participation by local communities and other major stakeholders. This is another role where there is broad agreement on a strong RSBO role, with local leadership seen as very important.
- ***Negotiating and mediating conflicts*** among stakeholders is seen as an important role for RSBOs in all pilot sub-basins, and relevant skills of RSBO leaders are seen as an important topic for capacity building.
- ***Monitoring and evaluation at the overall sub-basin level*** is another RSBO role where there is complete agreement among pilot sub-basins. Although results-based measurement approaches are still new to most people in sub-basins, initial discussions appear to have been well received and there appears to be interest in learning more about how they might be further developed, adapted, implemented and used to improve sub-basin management.

In addition to the need to develop or strengthen various types of skills, leaders in all pilot sub-basins see ***availability and access to information*** as an important current constraint on their ability to conduct all these types of roles. There appears to be needs (1) for more access to accurate and consistent information from outside sources; (2) for explanation or training where needed in how to interpret and use outside information; (3) for more development of local sources of useful information and any appropriate monitoring systems that are needed; and (4) for development, updating and maintenance of appropriate river basin and sub-basin database and information systems.

In terms of its ***implementation role***, there is also general agreement among pilot sub-basins that direct implementation of activities by an RSBO should be limited to those types of activities that are not already conducted by other existing organizations or institutions.

There were some significant differences, however, in the type of organization considered to be most appropriate to conduct these roles and duties in the different pilot sub-basins:

- ***Ping 1 sub-basin***. Strong locally-initiated and led organizations have been developing for some time in this sub-basin, including traditional groups, newer issue-oriented groups, and networks among local community groups and among local governments. In this context, there is a strong preference for a sub-basin organization that has clear local leadership. Strong linkages with local levels would be supported by sub-committees based on local sub-watersheds, and by close coordination with local governments. They hope government agencies and other organizations would play important but clearly supporting roles.
- ***Mae Kuang sub-basin***. Strong local groups exist in this sub-basin as well, but many are associated with different government agencies, and have their activities focused in different parts of the sub-basin. There are also traditional groups and various local networks. In this context, several factions have developed, and more time and effort is required to agree on a common approach at the sub-basin level. Most local leaders appear to want to develop a sub-basin organization with clear local leadership, but a local consensus needs to be developed regarding the nature of that leadership. Many feel that cooperation from government agencies, local governments, and provincial administrations is likely to be required for a workable consensus to emerge. RSBO sub-groups are likely to center on different areas in upper, middle and lower portions of the sub-basin.
- ***Ping part 5 sub-basin***. In addition to local governments, relevant local organizations in this sub-basin are almost exclusively based on volunteer groups and networks induced by and closely linked with various government agencies. Given the mix of long established communities and more recent migrant communities, there are fewer traditional types of

organization and more heavy reliance on government administration systems for social organization related to natural resources and the environment. In this context, there is a preference for a sub-basin organization with clearly stronger roles for government representatives from local, provincial and central agency levels, and for functional sub-groups that roughly correspond with different agency mandates. This also results in considerable focus on concerns about government policy, legal and administrative issues that are obstacles for coordination, funding and action.

It is clear that initial suggestions to select a single type of organization for all three pilot sub-basins were not appropriate. Modifications made by individual sub-basins appear to make sense according to their local conditions. Differences that emerged among pilot sub-basins have had little impact on the ability of these sub-basins to interact and collaborate with each other under the project phase coordinated by Wildlife Fund Thailand. Sub-basins seemed to have little difficulty accepting the differences in views and orientations found in the different sub-basins. And none of them sought to impose their own views on the other sub-basins. This may be seen as a preliminary indicator that a uniform structure for organizations and processes is not a necessary element of building an overall system of sub-basin management organizations in the Ping River Basin, or perhaps other river basins of the country. Thus, the set of five alternative types of organizational options for RSBOs developed under this project may be a useful tool for helping other sub-basins to consider the range of possible options.

Additional factors that project experience suggests are important include:

- Allowing more time for local preparations to organize and plan for sub-basin management when sub-basins are especially large and complex with many diverse stakeholder groups that have had relatively little previous experience in working together. In such contexts it appears particularly important to find suitable ways to select people who can really represent interests and views of all major groups, as well as people who can negotiate and mediate conflicts.
- In sub-basins where there are multiple administrative jurisdictions (especially at the province level) a number of problems emerge that relate largely to participation and coordination of government units. Some feel that working in such contexts may make it necessary to establish an initial sub-basin committee with a structure or components that come from government agencies with management duties in the sub-basin. This would clarify lines of command to provide technical advice and both formal and informal coordination among agencies, networks, community organizations and other levels of river basin committees. More local leadership could then be gradually developed. Since not all stakeholder groups are likely to agree with this type of approach in some sub-basins, however, some type of compromise may be necessary.
- There is substantial concern among local leaders working with sub-basin activities under the project regarding the need for clear policy and reliable sources of basic operational funding support for further development of sub-basin management organizations.
- There is clear interest at sub-basin levels in ways to develop channels for interaction and exchange among sub-basin organizations in different areas.

7.3. Action Planning Processes

It was clearly important for the sub-basin action planning process to begin with review and consideration of existing sub-basin plans, as well as current development plans at sub-district (or municipality) and province levels. Experience appears to have already taught local leaders that conflict or competition among plans will only bring more problems. Thus, it is only by considering these other plans that appropriate sub-basin management plans can be developed.

Despite this common starting point, however, the basic orientation of the planning process and the composition of resulting action plans did vary among the three pilot sub-basins:

- ***Ping part 1***. When given the opportunity, local leaders substantially re-oriented the sub-basin action plan to place heavy initial emphasis on local participation, organization and capacity building outcomes. Their view is that local organizations should take leadership in developing plans and projects that can then be integrated into plans of local governments, provincial plans and central agencies, as appropriate. They also feel the need to conduct activities directed toward addressing some of the policy issues that are particularly important in upper sub-basins. In order to effectively do all this, they need to further develop their analytical, planning, monitoring and organizational skills, as well as their supporting information and database systems. As these are developed, emphasis will shift toward more specific activities to improve management of sub-basin natural resources and environment. They hope government agencies and other organizations will help support this process.
- ***Mae Kuang***. Several of the factions in this large complex sub-basin had already developed action plans in association with different patron government agencies, with particular focus on the issues and concerns in their portion of the sub-basin. Thus, much of the focus of action planning under this project has been on reaching a compromise agreement on the vision, goals and strategy of the sub-basin plan, and on matching and integrating measures and projects from the various separate plans. Most appear to want to move in the future toward more dialogue among the different portions of the sub-basin, so that they can develop more activities that can help address some of the issues associated with interactions and impacts among those areas, and to be able to function more effectively at sub-basin and higher levels. In order to help build a basis for work in this direction, their action plan places much emphasis on organization, participation and livelihood outcomes.
- ***Ping part 5***. Due to the orientation in this sub-basin, the action planning process has been developing much more smoothly, despite the different projects and agencies that have sought to move it in different directions. Although this sub-basin is also large and complex, its reliance on agency-induced groups and networks results in sets of activities and projects that are endorsed by various agency officials and can be recombined in different ways. While there is still a strong focus on water resources, efforts have been made under this project to expand especially into health-related areas. Many see an important continuing role for provincial and central agencies in developing plans, with the RSBO and sub-basin networks providing coordination, support and monitoring. Their current action plan emphasizes public education, and organizing and mobilizing local participation in implementation programs. They expect this approach will result in a number of natural resource, health and livelihood outcomes that appear quite well aligned with those promoted by various government agencies.

Although differences among action plans in the pilot sub-basins are substantial, it does not appear that these differences should create major problems for provision of support from government sources. While it might be easier and more tidy from a government bureaucracy point of view if all action plans had similar strategies, measures and types of projects, so that uniform lines of financial resources could be allocated across all sub-basins, the resulting costs due to ineffective use of resources are likely to be unacceptably high.

Overall project experience also indicates that if the planning process is really meant to be participatory, it is clear that more time is required for planning-related activities at community and very local levels. This is not a process that can be conducted quickly by consultants working only through workshops with leaders. Even in the Ping part 5 sub-basin, where the process is easier because many projects are linked closely with agency programs, local leaders complained about insufficient time to consult with communities and other local leaders who needed to be

involved. In the other two pilot sub-basins, complaints were much stronger, with some local leaders doubting that any of the river basin management programs they have seen so far even intend to have real local participation.

At the same time, there is a clear and quite urgent need for sub-basins to receive at least enough funding support to allow them to begin implementing top priority projects and activities. Repeated cycles of planning without implementation are resulting in growing skepticism among sub-basin leaders and stakeholders about the intentions of government leaders and policies related to river basin management. And from an operational point of view, further learning needs to be much more experience-based and empirical, in order to maintain and expand interest and participation, further motivate and build consensus, and begin putting into place, testing and improving remaining components of a river sub-basin management system that are not yet fully established and functional.

Additional planning-related experience of the project has also shown that:

- A number of policy-level issues were discussed in all sub-basins during formulation of the action plans. It was only in the Ping part 1 sub-basin, however, where activities related to efforts to help address policy issues were included in the action plan, and that only happened during local review and modification of the initial draft action plan. Policy issues identified in pilot sub-basins relate especially to land use and economic development policies, and to conflicting policies among sectors, lack of government coordination, and many issues associated with outdated or inappropriate laws and the legal basis for sub-basin management activities.
- During action planning processes there were repeated complaints in all sub-basins about lack of access to relevant, high quality and consistent information and data.
- Many sub-basin leaders are interested in learning more about promising activities that are being conducted in other sub-basins, and in exchanging information and ideas about plans and projects. They are aware that there are diverse conditions, experience and ideas among different sub-basins, and they suspect that learning more about what works or not in other places may help improve planning and implementation in their sub-basin.

7.4. Capacity Building

The basic approach of this project in designating sub-basin facilitators, community facilitators and community members and providing training and capacity building activities for them was generally quite well received in pilot sub-basins. But it also became clear that sub-basin and community facilitators are people with many other activities in their lives, and they will not always be able to conduct or participate in every activity where they are needed. Thus, there have been suggestions from sub-basins that these types of capacity building efforts should be expanded to more people, especially through women's groups and youth groups, in order to begin developing a broader base of resource persons and future leaders related to management of natural resources and the environment in sub-basins.

While the handbooks developed under the project have been found useful by many people working in pilot sub-basins, some have suggested that it would be more useful if handbooks could be more detailed and specialized for various types of conditions found in different sub-basins. They also see a need to develop handbooks and/or other types of information materials that are adapted to different types of user groups, such as local governments, schools, health centers and hospitals, *etc*. Information access, packaging and dissemination are seen as important needs associated with capacity building in all pilot sub-basins. Many local leaders feel that

exchange of knowledge, experience, ideas and information across sub-basins could and should be seen as another useful approach for capacity building. This indicates that broader and more systematic methods to meet these needs may be necessary.

The general areas of information access and capacity building have been found to be major concerns in all pilot sub-basins. Information related to monitoring, problem identification and assessment, planning and operations will be needed on a continuing basis over the long term. It is also clear that the needs for capacity building are long-term, and that these needs are likely to change over time. Yet it appears difficult for existing types of services or education programs currently offered by institutions in the area to meet many of these needs. And even where useful services exist at various institutions in the northern region, information about them is often not available to local sub-basin leaders.

In response to these issues and needs, a proposal has been raised within the project for the establishment of knowledge and support center at the Ping River Basin level that could provide three types of support functions for RSBOs and other major stakeholders in the Ping River Basin. These functions include:

- Information center. Services would include (a) a library and clearinghouse for access to relevant training and extension materials and publications in a variety of forms; (2) a contact center to link groups, organizations, agencies and resource persons who can provide or exchange information on experience and tools; (3) a center for developing forms of materials appropriate for the range of stakeholders; (4) a center for coordinating translation and adaptation for international exchange and minority languages.
- Responsive technical support teams. Services would focus on helping guide and mentor RSBO-related groups, especially on topics where systematic local assistance is difficult to obtain. Topics might include technical and operating issues and processes, incentive measures for pollution control, representation, accountability, stakeholder interaction and negotiations, building consensus, improving equity and participation, using monitoring data in learning processes, managing information to provide wide access, transparency, public education, *etc*.
- RBO data and analytical support system. Services would focus on sophisticated tools to support RBO and RSBO programs and activities, such as spatial information systems, analytical modeling, instrumented monitoring, and other types of databases and analytical tools. This would build partnerships with ongoing work at CMU, DNP and elsewhere.

The center would depend on partnerships with institutions and groups in the Ping Basin, and serve as a focal point, convenor, and channel for information synthesis and dissemination to complement existing activities and increase their coverage and impact. It would not seek to duplicate or compete with other existing efforts or institutions.

This proposal has been reviewed and endorsed by a wide range of project staff, partners and local leaders, as well as by senior outside reviewers. All have agreed that these needs are very important and urgent, and that an approach like this is required to meet these needs.

7.5. Economic incentive measures to reduce pollution

Based on the situations found in pilot sub-basins, it appears that economic incentive measures need to be assessed and developed in close association with related regulatory and social measures. Regulatory measures can help support economic incentive measures, while economic incentive measures can help increase compliance with regulations. Social measures such as the community monitoring measure explored under this project can help increase the compliance and

credibility of both regulatory and economic incentive measures, while the existence of regulatory and economic measures provides more motivation for social measures.

Project experience has confirmed that development and implementation of appropriate and effective incentive measures to reduce pollution is very complex and must involve numerous agencies and institutions. For measures explored in pilot sub-basins this was found to include the Department of Pollution Control and Department of Environmental Quality Promotion under the Ministry of Natural Resources and Environment, the Department of Agricultural Research, the Department of Agricultural Extension and the Department of Livestock Promotion under the Ministry of Agriculture and Cooperatives, and units under the Ministry of Industry, as well as local governments, units in provincial governments, and various other government agencies and academic institutions.

The project has also shown that there is clear need for agencies responsible for reducing pollution to interact more closely with people and groups whose activities are associated with sources of the pollution. Development of incentive measures under the project was well supported by representative polluters who were keen to offer their opinions on the advantages and disadvantages of alternative measures. Information they provided clearly showed the importance of participation by polluter groups in developing economic incentives. These dialogues also show that representatives from different areas have different levels of satisfaction with economic incentives. This reflects considerations of economic incentives that include factors relating both to their enterprises and to their own situations. It also shows they offer their opinions freely, making the development of measures more reliable and practical.

Most participating polluters in each pilot sub-basin were pleased to accept the measures. But since measures were developed with participation of only 20 to 25 representative polluters from each sub-basin, results might not be acceptable to all enterprises in these areas. Thus, further steps toward implementing incentive measures should inform all enterprises in the sub-basin about the details of the program, assure that they understand their advantages and disadvantages, and invite their voluntary participation in the program. Public communications can be conducted with assistance from sub-basin facilitators and community facilitators as demonstrated under other components of this project.

The initial design of this project included implementation of economic incentive measures in pilot sub-basins on a trial and demonstration basis. But activities under the project to develop these measures showed that this would not be possible due to the institutional complexities involved, the amount of time required to effectively implement various incentive measures, and limitations in the terms of assistance from the World Bank. The project adapted in the short term by providing introductory training to increase local awareness and knowledge associated with priority measures in each sub-basin, and in the longer term by helping assure that activities to implement priority incentive measures are included in sub-basin implementation plans. In this regard, there are some concerns among some sub-basin leaders that costs associated with some types of pollution control measures are likely to be high, and it is not clear what kind of funding mechanisms will be available and viable.

7.6. Results-based Measurement

Activities under this project have clearly shown that leaders in all three pilot sub-basins agree that managing and conducting monitoring and evaluation at sub-basin level is seen as one of the most important roles and duties for RSBOs. Thus, project activities to develop a results-based measurement framework for sub-basin management have sought to develop this type of approach

in a manner that could be compatible with the diverse interests, capacities, and organizational and planning arrangements found in pilot sub-basins.

In order to help match the results-based measurement framework with organizational arrangements developed in pilot sub-basins, separate components of the framework focus on the project and overall sub-basin levels. This is necessary because individual partner organizations and agencies are expected to monitor and evaluate projects that they implement in local areas. The RSBO will combine results of project-level monitoring and evaluation with additional sub-basin level activities to monitor and evaluate overall sub-basin level plans, strategies and measures.

Overall sub-basin monitoring and evaluation requires input from various stakeholder groups, and will produce findings useful for participatory management processes in the sub-basin. Thus, roles and responsibilities of various stakeholder groups have been suggested.

In terms of results-based aspects of current sub-basin action plans, it is clear that progress has been made, and that further effort is necessary. Thus far, sub-basin action plans include basic expected outcome statements at the level of measures or projects. Assessments show that many of these need some further clarification, and specific measurable indicators (and appropriate baselines and targets) need to be determined for all of them. Indicators will need to be matched with types and sources of data and information that is either available or feasible to collect.

Data and information needs should link results-based measurement with wider needs for information from both outside and local sources. While some needs for monitoring data, especially at outcome and impact levels, may be met through access to monitoring information collected by outside sources, other types of information will need to be collected locally. Outside technical assistance and capacity building will be needed for conducting evaluation studies, as well as for developing local monitoring and information systems.

Another role for RSBOs that is seen as important in all sub-basins relates to negotiations and mediation of conflicts among stakeholder groups. Results-based measurement systems and the monitoring and information systems to which they are linked can make important contributions to this function. This should be another consideration in their further design and development.

The most important immediate need is for information and capacity building activities that are necessary for further development of results-based measurement approaches and systems in pilot sub-basins. An education campaign has been suggested to reach people responsible for management and other related stakeholders in pilot sub-basins. The campaign would focus on building knowledge, understanding and ability to apply the results-based measurement framework in assessing projects and sub-basin workplans. Emphasis would be on indicators and results evaluation criteria for various indicators, which would vary among the natural resource and environment conditions in each sub-basin.

8. Recommendations for further expansion to other sub-basins

Based on experience and lessons learned under this project, this chapter summarizes major recommendations for further efforts to expand learning from this project to other sub-basins in the Ping River Basin and possibly elsewhere in the northern region or the country.

8.1. Overall approach and policy commitment

Results from this project clearly do NOT support recommendation of another separate new approach to sub-basin management. Rather, recommendations for the overall approach to development of river basin management organizations center on consolidation of efforts by different organizations and agencies, and on commitment to some basic principles to help guide their further development.

Given the current confusion and uncertainty that exists at sub-basin levels regarding river basin management organizations, there is an ***urgent need for clear high-level commitment*** to this process. This commitment is necessary (1) so that people in river sub-basins will know that the time and effort they are investing in this process is important; (2) so that stakeholder groups in the sub-basin will be motivated to participate in organization, negotiation, planning and operation processes; (3) so that local governments and provincial administrations will see the importance of their participation in these processes; and (4) so that central government agencies will participate with sincerity and consistency.

This policy commitment should include clear support for some basic key principles that will be used to guide further development of management organizations at sub-basin level. These principles should include:

1. There will be a single system of river basin and sub-basin management organizations that will be used for developing relationships at that level with all government organizations and agencies; this should include agencies related to natural resource management and to pollution control that are located in various ministries;
2. Sub-basin management organizations and action programs must be developed through processes that are truly participatory, and emphasize balanced interaction between top-down national processes and bottom-up local processes;
3. Acceptance of the diverse conditions found in river sub-basins, and thus acceptance that there does not need to be a single set of ‘model’ structures for sub-basin organizations, action plans or management processes; exchange of experience among sub-basins will be promoted;
4. Acceptance that existing local and sub-basin level organizations and plans – of all major stakeholder groups – will be the starting point for any necessary synthesis, and for gradual improvement and development of sub-basin organizations and programs;
5. Acceptance that river basin and sub-basin management is a long-term process, with needs for support and assistance that will change over time;
6. Government commitment to provide continuous support for basic operations and capacity building for a long enough period of time that sub-basin organizations will be able to function effectively, and can be integrated into broader development, administrative, regulatory and social systems; incentives should be provided to help accelerate this process.

8.2. Participatory watershed management organization and programs

1. Based on these recommended principles, one of the first steps in expansion of support to additional sub-basins should be local surveys of existing organizations, groups and networks that can provide a basis for further organizational development at sub-basin level. In some sub-basins there will probably already be sub-basin level committees or groups that are working under this approach. In others, sub-basin level efforts thus far may have focused only on government-associated local groups and networks, or they may have not included various stakeholder groups. Approaches should be developed to assure that all major stakeholder groups and types of relevant organizations are included.

2. River basin programs should not try to avoid conflict by focusing on particular government-associated groups. Since broad representation and consensus are very important for the success of participatory sub-basin management, sub-basins should actively seek to identify sources of disagreement and conflict in their sub-basin, so that the issues can be openly discussed and managed. Long-term effectiveness should not be sacrificed for short-term convenience.

3. Based on their capacities, experience and views, sub-basins should be allowed to choose and develop their own organizational structure and arrangements. A single 'model' for sub-basin organizations should NOT be promoted. Rather, examples such as the five alternative forms of organizational 'models' developed under this project, and cross-basin exchange of experience should be used to help inform their decision. They should also be encouraged to consider what is currently most practical, as well as directions for any changes in organizational arrangements they would like to see in the future. There should be mechanisms at the river basin level to help assure that sub-basin organizations are not dominated by a narrow set of stakeholder groups.

4. The basic structure and content of sub-basin action plans should be determined through participatory processes in each sub-basin. A single 'model' for action plans should NOT be promoted, but diverse examples of plans should be circulated and cross-basin exchange of experience should be encouraged. Planning principles that should be promoted include compatibility of sub-basin plans with plans of local governments and provinces, as well as any needs for areas of compatibility needed for interactions among sub-basins within the context of the larger river basin.

5. Sub-basins should be encouraged to build their sub-basin action plans into a broader long-term plan for sub-basin management and development, and to work with all major stakeholder groups to improve the plan and build a broad consensus in the sub-basin to support the plan.

6. Sufficient funding should be made available to support at least implementation of some top priority activities and projects in sub-basins. This is needed to address concerns related to repeated planning with no implementation, and so that further learning can be more experience based and empirical. It will also provide needed additional motivation, as well as opportunities to begin testing monitoring and results-based measurement systems.

8.3. Information and capacity building

1. Urgent support should be provided to establish an information center and accessible database that compiles quantitative and qualitative data and information related to natural resources, environment, quality of life and related aspects of the Ping River Basin, including information related to their participatory management. The main objectives of the center and database should be (1) to provide access for river basin and sub-basin management

organizations to accurate and up-to-date data from all sectors relevant to basin management; and (2) to provide access to a wide collection of information that can help build capacity of river basin and sub-basin organizations to conduct efficient, effective, equitable and sustainable participatory river basin management programs.

2. The information center and skilled persons from other organizations and institutions should be provided with support to expand the range and availability of handbooks and other types of capacity building materials and media. Particular attention should be given to the needs of different sub-basin stakeholder and user groups, as well as to the different conditions found in different types of sub-basins.
3. Designation and development of sub-basin and community facilitators should be encouraged in other sub-basins. In addition to local people with knowledge, experience and leadership skills, capacity building programs should be conducted to develop more future leaders, with particular emphasis on women and youth.

8.4. Incentives for pollution control

1. An institutional assessment should be made to identify the most appropriate and effective methods to achieve coordination among government agencies in order to begin implementing economic incentive measures for pollution control in combination with associated regulatory and social measures. This should include identification of suggested improvements in relevant policies, regulations or laws that constrain coordination.
2. Sub-basin management organizations should help identify major sources of pollution in their sub-basins, and organize forums for discussions and negotiations with pollution source groups, with focus on identifying the most appropriate combinations of regulatory, economic and social incentive measures to address problems in the sub-basin.
3. Technical assistance should be made available to RSBOs to help them identify the range of potential incentive measures with potential to help them address pollution problems, and to build more in-depth and practical knowledge on incentives they seek to implement. This should include assistance services that can be available on a regular basis as local implementation issues and problems arise.

8.5. Monitoring and results-based measurement

1. A campaign should be conducted to provide sub-basin leaders and major stakeholder groups with easy-to-understand information on results-based measurement, why it is important, how it can be used to improve sub-basin management programs, and where they can find additional information and assistance. Emphasis in this initial campaign should be on building awareness, knowledge, and understanding.
2. Technical assistance should be provided to RSBOs to help build their capacity and improve their sub-basin action plans through clear outcome statements, identification of indicators that can really be measured, and sources of data and information that exist or will need to be developed locally. This can be done in association with relevant government agencies where that is appropriate. Linkages should be facilitated between RSBOs and relevant academic institutions or independent institutes from which further technical assistance can be provided.
3. Encouragement and technical assistance should be provided to develop appropriate and effective monitoring and multi-purpose information systems within sub-basins. In addition to basic knowledge and conditions, and to planning and project-related information needs, appropriate types of natural resource, environmental, livelihood and health-related monitoring

should be considered to supplement monitoring from outside sources. One useful example of approaches to local monitoring that may be useful is the stream detectives program supported by the Green World Foundation. Other types of examples should be identified and disseminated.

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Appendix 1. Project Outputs

Consultants	*Deliverables*	*Language*	*CD*
Panya Consultants Consulting Firm	1. Inception Report	English/Thai	-
	2. Sub-Basins Selection Report	English/Thai	-
	3. Component 1 Report (Draft)	Thai	-
	4. Component 2 Report (Draft)	English/Thai	-
	5. Component 3 Report	English/Thai	-
	6. Draft Action Plan for Natural Resources and Environmental Management Report for Ping Part 1, Mae Kuang and Ping Part 5 Sub-Basins	English/Thai	-
	7. Final Report (Draft) with Executive Summary	Thai	-
Dr. David Thomas Watershed Management Expert	8. Inception Report	English	-
	9. Interim Report	English	yes
	10. Final Report	English/Thai	yes
Dr. Dominic Moran Economic Expert	11. Inception Report: Practical Criteria for Identifying Key Pollution Sources	English	-
	12. Interim Report: Identification of Appropriate and Practical Incentive Mechanisms	English	-
Chan-Ek Tangsubutra Planning & Institutional Specialist	13. Participatory Action Planning Process Report	English/Thai	-
	14. Constitution of Sub-Basin Organization Report	English/Thai	-
Mr. Sanchai Sutipanwihan Training Specialist	15. Technical, Organizational, Education and Awareness Toolkits	Thai	yes
	16. Component 2 Report	English/Thai	-
Dr. David Thomas Watershed Management Specialist	17. Results Measurement Framework Report	English/Thai	yes
	18. Final Project Report	English/Thai	yes