

# INDONESIA: A WATERSHED APPROACH TO COASTAL ZONE MANAGEMENT IN BALIKPAPAN BAY CASE #85

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## ABSTRACT

### Description

This case study demonstrates how the successful evolution of a coastal management project depended upon the development of an inter-jurisdictional, watershed-based management plan for Balikpapan Bay, East Kalimantan, Indonesia. The project achieved early success in building watershed consciousness in individual villages within the region. However, progress stalled when initial training, education and demonstration projects in communities failed to generate commitment at the higher government levels required for watershed-level management. An adaptive management approach helped formulate a new model for Balikpapan Bay that successfully engaged both institutions and local communities.

Structured interviews and an internal assessment to refocus the project on problems confronting institutional counterparts resulted in an immediate increase in local stakeholder ownership and integration among local institutions with watershed management authority. Inter-agency integration was critical for any significant or sustained movement toward watershed-level results, i.e., improved or stabilized condition of marine and coastal resources in Balikpapan Bay. Early implementation actions demonstrated the effectiveness of interdepartmental issue teams and techniques for progressively moving work from independent projects to integrated institutional planning and budgeting. Interdepartmental collaboration led directly to new institutional arrangements codified in the signing of the Balikpapan Bay Strategic Management Plan.

### Main Tools Used

A1.2: Policies with relation to water resources  
B1.5: Regulatory bodies and enforcement agencies  
C1.2: Water resources assessment  
C2.2: Basin management plans  
B2.2: Training to build capacity in water professionals  
C5.2: Shared vision planning

### Keywords

Adaptive management; integrated coastal management; inter-jurisdictional regulation; watershed management.

## MAIN TEXT

### 1 Background and problems

The Balikpapan Bay project is part of the Indonesia Coastal Resources Management Project (CRMP) supported by United States Agency for International Development's (USAID). The CRMP is implemented through a cooperative agreement with the Coastal Resources Center at the University of Rhode Island (CRC). In 1996, CRMP reached agreement with the Government of Indonesia on three broad objectives for the project (USAID, 1996):

1. Develop models for greater stakeholder participation in decisions about the planning, management, use and monitoring of natural resources
2. Improve policy development and implementation
3. Strengthen institutional capacity for biodiversity conservation

The Indonesian name for CRMP is *Proyek Pesisir* (Coastal Project). Implementation sites were selected in Minahasa District in the Province of North Sulawesi; Lampung Province in South Sumatra; and in the Province of East Kalimantan (KalTim) in Indonesian Borneo. *Proyek Pesisir* originally focused on three geographic and administrative scales. Minahasa focused on developing a model for community-based coastal resources management. Balikpapan Bay set

out to introduce watershed-based planning loosely based on the United States' National Estuary Program (Knight, 2000). Lampung worked at the provincial scale to develop a provincial coastal atlas and strategic plan.<sup>2</sup> Decisions and actions taken

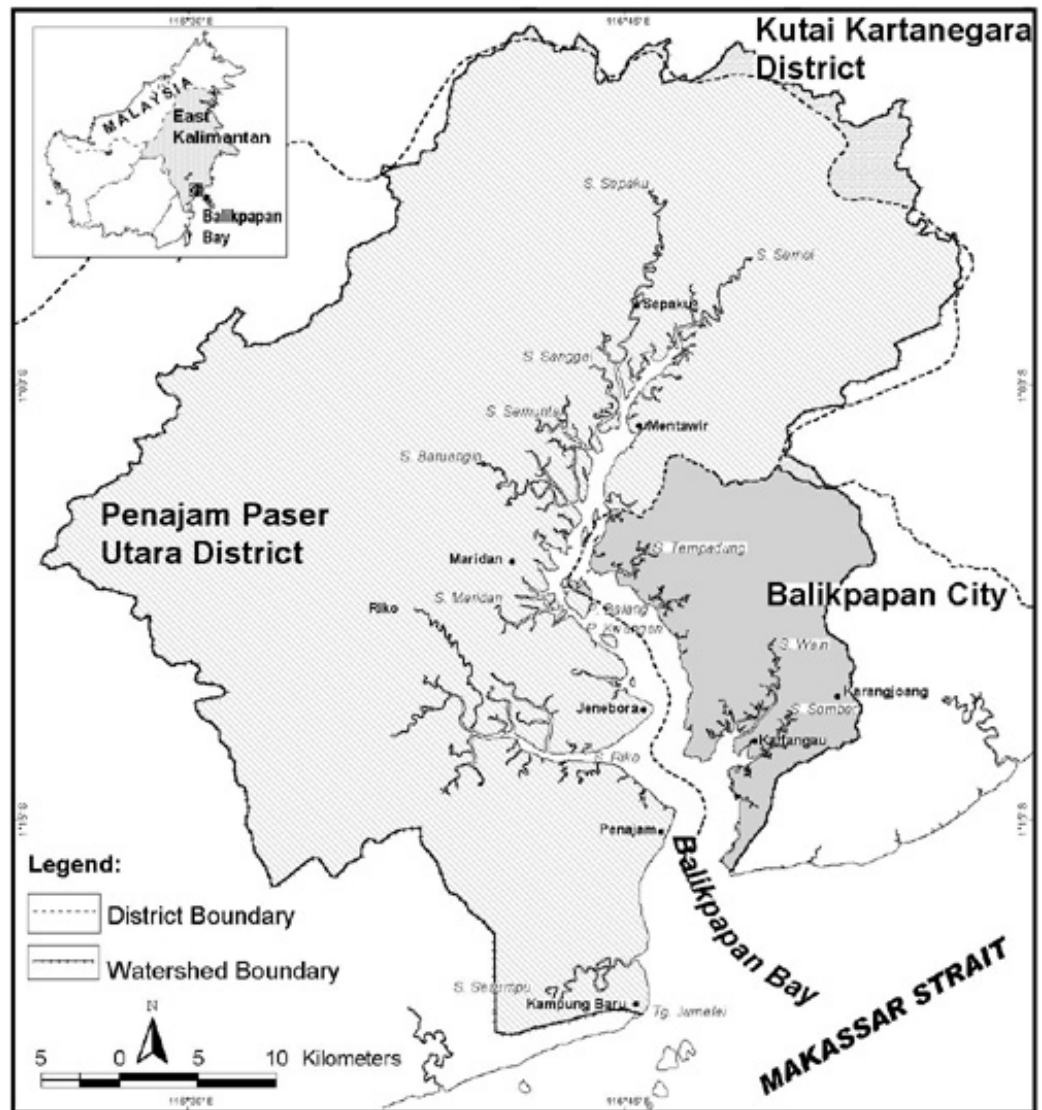


Figure 1: The Balikpapan Bay Watershed

Balikpapan Bay is relatively small and self-contained with a shoreline 80 kilometers and an area of 16,000 hectares. The entire watershed covers 211,456 hectares (Figure 1). Most of the watershed's population and development are concentrated in Balikpapan City at the mouth of the bay. However, most of the watershed lies within Paser and Penajam Utara Districts across the bay from Balikpapan. Almost three-fourths of the watershed area lies in Penajam Paser Utara District (Paser) alone. A small part of the watershed also lies in Kutai Kertanegara District. The shoreline of Paser District has many small settlements and scattered industrial sites. Balikpapan City has a good harbor and international airport and serves as the major gateway to and from the rest of the Province.

The land and water resources of the watershed are already intensively exploited and development pressure continues to grow. Major industries include an oil refinery, plywood mills, a cement plant, a coal port and shipyards. There is little or no treatment of any of the domestic or industrial waste entering the bay. Most of the original rainforest in the watershed has been destroyed and soil erosion and sedimentation are common. A remnant forest within the jurisdictional boundaries of Balikpapan City serves as a habitat reserve but is under heavy pressure from farming and logging. The bay is fringed with mangrove but within the last 10 years significant areas of mangrove have been converted to shrimp and fish ponds.

*Proyek Pesisir* was initiated during the regime of President Suharto when government was highly centralized and authoritarian. In line with Indonesia's top-down decision-making structure that existed until the year 2000, official agreements for the *Proyek Pesisir* KalTim project were made at the national level and officially communicated to the province. However, the province was consulted as part of the provincial site selection process and their initial enthusiasm is one of the reasons Balikpapan Bay was chosen as a project site. Both KalTim Province and Paser District eventually formed coastal task forces with the assistance of CRMP. However the City of Balikpapan, from which most of the direct bay impacts derive, never developed a formal management task force.

Indonesia entered a major economic crisis in 1998, one year after starting *Proyek Pesisir* in East Kalimantan. The Suharto regime eventually collapsed, leading to implementation of new laws for regional autonomy and fiscal decentralization in 2000. While this political climate presented new opportunities for local coastal management, it also left unanswered many questions about the roles and abilities of local authorities. The long legacy of top-down national decision-making resulted in low local capacity and little coordination among governmental sectors. There were few incentives for initiative or risk-taking by local government officials. Funding and enforcement of local government environmental programs were low. Few government staff had information about resources of the watershed or were involved in major resource planning projects. Previous donor-funded, natural resource projects focused primarily on terrestrial issues and were unconnected to broader watershed concepts.

## **2 Description of Actions Taken**

The East Kalimantan project was originally designed to test and demonstrate integrated land and water management as part of a broader strategy to improve province-wide coastal management capacity. Specific objectives were (CRC, 1995):

- Improve the knowledge, willingness to act and capacity of the public and private sectors in KalTim
- Develop a bay management plan with broad support
- Develop an institutional structure for securing funding, overseeing implementation, monitoring results and updating the plan

To help jump-start the program at the beginning, a member of the Minahasa *Proyek Pesisir* staff who was trained in community-based coastal resources management (CB-CRM) was promoted to field program manager for the KalTim project. Additional staff were brought in from the Minahasa and Lampung project offices and from outside the project. The project office was physically separated from government offices to provide a neutral meeting place for stakeholders.

Work during the first few years of the project focused on building an understanding of integrated management principles and practices, building a shared awareness of the watershed and participatory planning. A US-based senior coastal planning advisor was hired to make periodic visits. Planning workshops were conducted to identify and discuss issues and actions with government officials, stakeholders and nongovernmental organizations. Additional actions included:

- Organizing village-level training and projects such as mangrove planting and signboards at river mouths. These built awareness and capacity for local management in an attempt to demonstrate concrete actions that could be taken to improve the watershed
- Forming interagency task forces in KalTim Province and Paser District
- Offering training, workshops and study tours related to CRM for government partners and community leaders
- Conducting surveys of environmental and socio-economic conditions
- Developing a GIS database and providing data and training to key partners
- Initiating a public awareness program using local newspaper articles, radio shows, and television specials

## Problems Encountered during the Implementation Phase

By May 2001, two years after project initiation, awareness was high but progress toward a bay management plan had not advanced as planned. A draft Bay Management Plan (BMP) was still not ready for final review and approval. An internal review, which included structured interviews with stakeholders and partners, was conducted as part of a conscious process of project learning and adaptive management. The review reaffirmed primary stakeholders' priorities and gathered recommendations on what should be done to effectively move forward in a way that is consistent with local counterpart priorities, perceptions and capacity. It also assessed government institutional capacity, political context and institutional readiness for change.

The review revealed a number of critical problems that had impeded more rapid progress toward a watershed-based BMP:

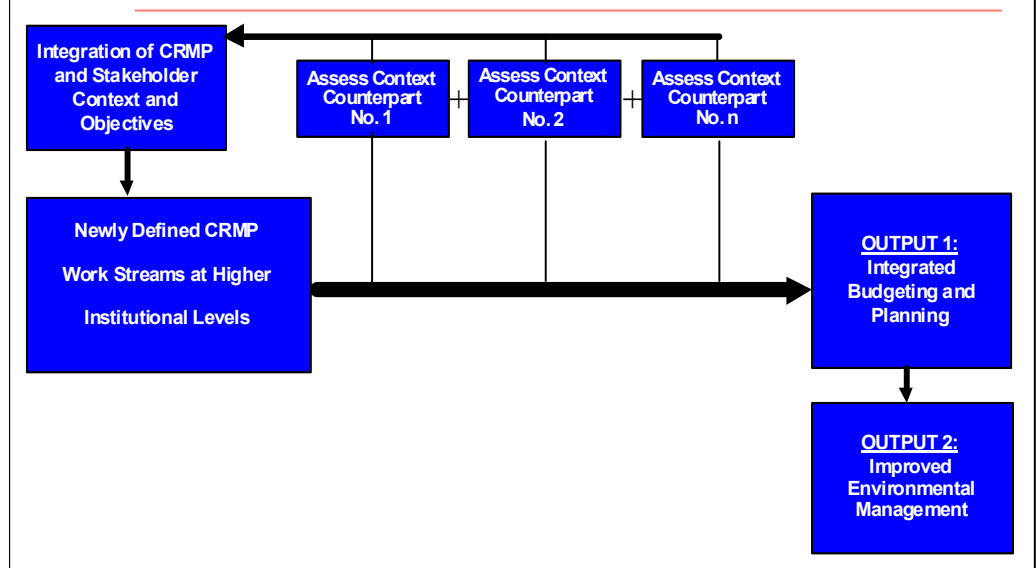
- Lack of interagency communication and coordination. Few local counterparts really understood the form and degree of institutional integration required for watershed-based management
- Institutional ownership of the initiative was low and limited to a few low- to mid-level government personnel
- Some key actors were not engaged, particularly large private sector industries and the city government of Balikpapan
- The complexity of watershed-based management presented greater difficulties than anticipated for local staff and counterparts who had no previous experience in bay and watershed planning. A greater investment in capacity building and assistance from more experienced local and foreign technical advisors was required
- While there was general agreement on issues, there was no consensus on actions or institutional mechanisms for effecting change
- Community-based early actions such as mangrove replanting, village information centers, training and study tours were not targeted at watershed scale impacts and were not connected to local agency priorities

As a consequence of the review, the project team developed a new model for engaging institutions and individuals, with a focus on fostering a high level of ownership and commitment. The strategy was to move toward institutional action centered on issues in the larger watershed that were important to local counterparts (see Figure 2). This new focus on institutional action recognized the importance of the local institutional context; i.e., the importance of building the implementation framework of the project around issues important to the day-to-day work streams of project counterparts.

The interviews and review provided detailed information on counterpart priorities and specific recommendations for how to revise the project. These priorities and recommendations were then integrated with overall project objectives set at the beginning of the *Proyek Pesisir* project. Integration of the two sets of objectives and priorities resulted in newly defined work streams at institutional levels high enough to achieve allocation of significant financial, staff and political resources, as opposed to the earlier focus on community-scale early actions. Project and counterpart resources were more effectively allocated and work on the BMP itself became more focused. Technical assistance was better targeted to needs and the participation of local counterparts and stakeholders increased significantly.

Pilot activities were jointly identified by *Proyek Pesisir* and counterparts based on priorities shared across institutions. These pilot activities provided the vehicles for building joint planning and budgeting teams around two priority issues: mangrove management and erosion/sedimentation. Institutional integration around these two issues foreshadowed broader institutional integration that would be required later on.

**Figure 2. Adaptive Management – Integrating Institutional Context with CRMP Implementation**



### Key Processes for Institutional Change

The key issues identified within the local social, technical and socio-political context provided the basis for increasing institutional commitment. These key issues provided the nexus around which *Proyek Pesisir* formed two issue teams on common problems that cut across numerous government departments (i.e. mangrove loss and erosion/sedimentation). The issue teams were tasked with looking at how the issues were currently institutionally managed. This included reviewing formal and informal management mechanisms such as permitting, land certification, community consultation and interagency coordination. The deliberation of the issue teams resulted in development of early institutional actions (coordinated permitting) as well as field activities (rehabilitation of mangroves and reforestation). These jointly agreed early actions were then used by *Proyek Pesisir* as the starting points for more detailed discussions of integrated work planning and budgeting, as well as other actions such as the creation of integrated local laws.

### Key Implementation Issues

Early in the project, considerable resources were spent on identifying issues and conducting technical studies, as well as implementing community-based actions. These had proven successful in other project locations. However, the review revealed that the driving forces of bay stress were large scale and required capacity building at higher levels of governance. Solutions to issues at the larger scale must come from government functions such as permitting, enforcement, spatial planning, public awareness and education, and interdepartmental coordination. While local community participation is important, it was clear that watershed-based approaches first required understanding and integration among government institutions with watershed-scale authorities.

The project review with stakeholders and counterparts confirmed the identity of key partners and more sharply defined critical watershed issues. With the assistance of local university-based technical advisors, the working groups continued to refine the issues and identified both internal and external options for early actions to address them. Importantly, the working groups were not focused on field project implementation, but were tasked to look at changes in the mechanisms through which their institutions attempted to manage watershed problems. While some early actions involved field initiatives (e.g., mangrove or forest rehabilitation), the main

focus was on demonstrating real-time cooperative planning and the rational integration of institutions' plans and budgets for sustained support for watershed management.

Parallel to this process, *Proyek Pesisir* facilitated the development of a new non-governmental organization, Friends of Balikpapan Bay (FOBB), dedicated to public involvement and education on watershed and bay management issues. In March 2002, FOBB was legally granted its charter and started operation with two main divisions. One division is dedicated to providing activities for members, and the other focuses on technical execution of contract projects with the government, donors and private sector. With a membership of over 200, FOBB has already received two contracts from local government dealing with priority issues identified by the project and is developing a partnership and funding with the private sector for additional community-based projects.

The complete draft of the BMP was released in April 2002, 10 months after redesigning the Balikpapan Bay project. A series of stakeholder-led public review and verification retreats and meetings followed. For the first time, diverse stakeholders came together in public venues with a common vision for watershed-based management of Balikpapan Bay. While a number of milestones were reached prior to the review and verification retreats, these meetings were a turning point in the movement of the project. The success of the public meetings was reached primarily as a result of effectively expanding the participation of local institutional counterparts in the project.

The finalized BMP, entitled *Strategic Plan for Integrated Management of Balikpapan Bay*, was formally adopted on July 31, 2002 (*Proyek Pesisir*, 2002). An implementation agreement was signed by the Indonesia Minister of Marine Affairs and Fisheries, the Governor of East Kalimantan Province, the Mayor of Balikpapan City, and the Regents of Paser and Penajam Districts. A month after adoption, interdepartmental working groups coordinated by regional planning agencies were preparing detailed sets of projects and budgets to implement watershed-based management of Balikpapan Bay. A road map for transitioning from no or limited integration to fully integrated planning and budgeting at the institutional level was developed to provide a target and vision for counterpart institutions.

A new Bay Management Council (BMC) began meeting to coordinate and support implementation of the BMP. The BMC is chaired by the governor and includes the heads of Balikpapan City, and Paser and Penajam Regencies. A Bay Management Board (BMB) is being formed that includes the BMC members as well as a broader group of stakeholders. This Board will advise the BMC and involve stakeholders in watershed management decisions.

A new Science Advisory Group (SAG) that will be housed at the local university was also created in recognition that there are still major gaps in knowledge about the condition of the bay and cause-effect relationships. The SAG will be comprised of the scientific and academic communities and will advise the BMC, BMB and other stakeholders on the implementation of the BMP.

East Kalimantan Province began discussing enactment of a provincial law to coordinate development of watershed-based district laws (further increasing implementation capacity) across all coastal regencies in the province. This program is still a work in progress for the administrations of East Kalimantan, but initial indications show good potential.

### **3 Outcomes**

#### **Expected Outcomes**

Practicing adaptive management and learning throughout project implementation resulted in achievement of desired project outcomes. A BMP was adopted and is in the early stages of implementation. Local government departments are working toward integrated priority setting, budgeting and work planning based on the recommendations of the plan. Additional local laws are being considered to further strengthen watershed management in East Kalimantan. The private sector and civil society is now more fully engaged and supporting community-based

work through the FOBB. The threat in Balikpapan Bay, as in many developing countries, is that the pace of BMP implementation may be overwhelmed by the pace of urban growth, compounded by the lack of enforcement of basic land use and environmental controls.

## Unexpected Outcomes

Development of the BMP has stimulated broad government interest in improving coastal management, intergovernmental coordination and public involvement. The City of Balikpapan and Paser District are considering development of spatial plans for shoreline development. East Kalimantan Province has already allocated funds to coordinate a system of bay spatial plans and many administrative jurisdictions are discussing budgeting for new local ICM laws.

The transparent, inclusive public process used for bay planning made a big impression on local governments. For the first time, Paser District advertised opportunities for public comment on a new local spatial plan. Government staff are enthusiastically supporting interagency working groups and forums. In major part, the window of opportunity for *Proyek Pesisir* to introduce this broader approach to public participation was due to the Indonesian transition from centralized to decentralized government control and local empowerment. The BMP process provides a concrete example of how the new decentralization laws concerning local autonomy can be practically implemented.

At the national level, the BMP is being used as an example of inter-jurisdictional integration and coordination and is viewed as a model for planning. The Ministry of Marine Affairs and Fisheries is reviewing the BMP for lessons learned in the crafting of the new Indonesia National Coastal Management Law to be submitted to the Indonesia National Parliament in late 2002.

## Win-Win Outcome of the Balikpapan Bay Management Plan

There were no losers in the development of the BMP. This was a cooperative, consensus-based process without policy fights and without win-lose situations among administrative jurisdictions, institutions or stakeholders. District and city governments clarified priorities and gained new mechanisms for interdepartmental communication within and between administrative jurisdictions. Integrated budgeting around the two pilot initiatives has begun and local governments are already exploring opportunities for enacting new and stronger coastal resource management laws focused on integrated watershed management. However, as more complex and difficult issues such as pollution are tackled, solutions will require changes to the way stakeholders do business. Stakeholders with strong economic influence within the province may not be as cooperative as more conflict issues are addressed.

Of all stakeholders, local communities were the least immediately or directly involved in the process of developing the BMP. However, the purpose of creating the new FOBB NGO is specifically to give voice and participation to the 40 villages within the watershed. In addition, as the bay management program is implemented, villagers will become very important players in supporting and enforcing BMP provisions. Public education on the BMP among villages in the watershed poses another opportunity for promoting openness and public participation.

## Sustainability

Sustained financial commitment is almost assured for the BMP. However, even with sustained budgeting, there are still institutional, implementation and technical challenges to consider. Local officials face many demands on their time and qualified local staff are limited. Continued capacity building will be necessary to improve staff performance and clarify the importance of watershed management to higher-level decisionmakers. Through the BMC, local governments will be asked to budget funds in FY 2003 to support a facilitator or ombudsman to continually push for watershed management plan implementation.

## Resources and Efficiency in the Process

The initial design and execution of the project underestimated the political, management and technical challenges to watershed management. Even sophisticated watershed management projects in politically stable countries can get mired in interjurisdictional struggles over authority, information, and resources. The Balikpapan project began testing a model for

watershed management just as Indonesia started shifting from a centralized dictatorship to a decentralized democracy.

Without experience to draw upon, the early project strategy adopted approaches of community-based coastal management that had worked in other communities. However, this alone was not sufficient to engage the institutions that have responsibilities at the larger scale of the watershed. Greater efficiency would probably have been achieved through more structured engagement from the start of local government agency planning partners. This would have resulted in deeper involvement and clearer understanding of local issues, priorities and political context.

Project funding is provided by USAID and local government provided limited staff. Opportunities for leveraging more local government resources were minimal due to heavy workloads and understaffed programs. Support from the private sector is expected to be important in the future. Additional resources might have been derived from local private sector sources if these had been approached earlier in the project.

## **4 Lessons Learned**

### **Elements of Success**

The success of the project derives from combining learning and adaptive management approaches to project administration with attention to local context and principles of institutional change management. Application of these approaches produces important information for project design on the underlying institutional, technical and socio-political structures. Incorporating this information in project design and strategies results in institutional frameworks that are more likely to be sustained and able to support field project implementation. The development assistance model applied requires reflection with local partners, and being open to having the results of self-assessment influence the design and implementation of the project.

### **Using Lessons Learned in Adaptive Management**

Active project learning and adaptive management, including the use of structured interviews, allows project managers to revise strategies and identify concrete steps for building trust, agreeing on common priorities, developing capacity and building shared visions and team thinking. Importantly, it leverages greater action by building on the priorities and perceptions of local institutional counterparts. In this way, projects can increase their effectiveness and efficiency by building on the interests of local institutions and strengths in carrying forward shared work priorities.

Other significant lessons were learned through the implementation of the project.

- A context-based model of project implementation is critical to institutional engagement, ownership and commitment. Structured interviews with stakeholders and all project partners followed by collaborative work planning produces a more knowledgeable, open and collaborative relationship with local partners
- Collaborative project planning establishes outputs and outcomes important to local counterparts, reveals their perception of the institutional, technical and socio-political environment, and clarifies their readiness to support various project implementation alternatives
- Political savvy and strong skills in negotiation and planning are key to developing intergovernmental agreements and for working with powerful stakeholder groups
- Involving local counterparts in all levels of project implementation (data collection and management, planning and decision-making, implementation, and evaluation) can produce a high degree of ownership of the process and outcomes, and can increase the potential for sustainability
- Early actions that focus on institutional priorities feed momentum and increase confidence through interim successes



## Importance of the Case to IWRM

This case study demonstrates how the successful evolution of a coastal project depended upon the integration of land and freshwater issues into coastal management. The case also demonstrates that while local community participation is important, many watershed-based approaches may first require an understanding and integration among government institutions with watershed-scale authorities.

## 5 Links to Additional Information

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University of Rhode Island Coastal Resources Center Web Site: <http://www.crc.uri.edu>

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USAID Natural Resources Management Program in Indonesia Web Site: <http://www.nrm.or.id>

### Acknowledgements

The authors of this case are Maurice Knight, Steve Tilley, J.J. Wenno, and Neil Makinuddin. The authors wish to acknowledge the concerted efforts of local stakeholder groups and

institutions, especially the Province of East Kalimantan, City of Balikpapan, and the Paser and Penajam Paser Districts. Without their leadership and support, this project would not have been possible. The authors also want to thank Brian Crawford, Lynne Zeitlin Hale, Stephen Olsen, and James Tobey for their comments and help with the article.