

Policy options

This section aims to identify feasible policy options that target key components identified in the Causal chain analysis in order to minimise future impacts on the transboundary aquatic environment. Recommended policy options were identified through a pragmatic process that evaluated a wide range of potential policy options proposed by regional experts and key political actors according to a number of criteria that were appropriate for the institutional context, such as political and social acceptability, costs and benefits and capacity for implementation. The policy options presented in the report require additional detailed analysis that is beyond the scope of the GIWA and, as a consequence, they are not formal recommendations to governments but rather contributions to broader policy processes in the region.

Definition of the problem

The foremost consideration is the tri-lateral, transboundary nature of the Sulu-Celebes (Sulawesi) Sea, with three different national jurisdictions, many transboundary issues, and many national, regional and international “players” actively pursuing initiatives concerned with sustainable development of the region (see Annexes III and V). Further, significant transboundary impacts can also originate from outside the region, such as from the GIWA regions South China Sea and Indonesian Seas. The present analysis is predicated on the fact that actions by one country invariably impact on the jurisdictions of another.

On land, massive land-clearing and conversion has destroyed or fragmented much of the original vegetation cover, with severe loss and modification of catchments and loss of sediments to coastal waters. In the sea, major overexploitation and destructive fishing have caused

severe depletion of fish stocks, with associated habitat modification, in most areas of the region (e.g. 80% modification of original vegetation cover, 60% loss of mangroves, 50% of reefs degraded). As part of the three nations’ international obligations under tri-lateral and United Nations Conventions and Treaties (e.g. Biological Diversity, World Heritage, MARPOL), the respective national governments, with international assistance, recognise the need to address these impacts in a coordinated manner. However, implementation of effective interventions is hampered by lack of capacity, corruption and ineffective legislation and/or enforcement. See also Box 10.

The overall present situation and future prognosis for the Sulu-Celebes (Sulawesi) Sea is that:

- There are already severe environmental and socio-economic impacts from habitat loss and community modification and unsustainable exploitation of fish and other living resources;
- These impacts are expected to continue to worsen over the next 20 years, with additional significant deterioration in impacts of

Box 10 The need for improved management and cooperation in conserving and protecting the Sulu-Celebes LME.

There is a pressing need for improved management and cooperation between countries in conserving and protecting the Sulu-Celebes Sea Large Marine Ecosystem. Enforcement, education and research are necessary measures, as are efforts to curb illegal fishing. In 1988, Tubbataha Reef was declared as the first National Marine Park in the Philippines. In 1993, the United Nations Educational Scientific and Cultural Organization (UNESCO) declared the reef a World Heritage Site. Turtle Island has also been declared a protected area. These declarations indicate the government’s commitment to conserve the areas and have increased international awareness and support for their protection. When the government ran out of funds to carry out an action plan, international agencies such as the World Wildlife Fund (WWF) and GEF initiated some projects. It is clear that engaging the public is necessary, as well as developing livelihood alternatives for those communities that are affected. WWF’s plan is to raise the communities’ awareness level of the existing laws on fisheries and environmental protection. Other international groups that have committed to projects in the area are ASEAN and Conservation International. In 1996, an agreement was signed by Malaysia and the Philippines to protect two endangered turtle species, the Hawksbill and the Green Turtle. Although the Malaysian-Philippine agreement is a vital first step, all three governments in the region need to enforce sustainable ways of earning a living from the sea.

(Source: Excerpted from LME 2003)

pollution (becoming severe) and freshwater shortage (moderate);

- The human population is growing steadily with an expected doubling by 2035, although growth may slow slightly in the coming decades;
- Many people are at subsistence levels of agriculture and fisheries for survival, with approximately 60% of population at or below the poverty level;
- There is widespread continued use of inappropriate technologies and concern for the longer term sustainability of the production systems;
- Most laws and regulations are not well implemented or accepted by local populations;
- It will be possible to slow down the rate of increase of impacts, although, at present, environmental concerns are less important than development pressures, many of which have inappropriate environmental effects;
- The political situation is focused on the short-term (3-5 year cycles) with changes in officials, rather than on developing longer term strategies;
- There are concomitant significant deficiencies in vision, planning and implementation at political levels;
- A 'critical mass' of expertise and framework for change are developing, involving science, policy, private sector and government;
- There is a need to better integrate ocean-related sectors in policy, with linkages among food security, poverty, natural resources, environment pressures, market forces and governance;
- There is misallocation of significant amounts of local and international funds;
- There is a rapidly changing global situation with changes in funding priorities;
- There are major opportunities for improvement in both the political situation and from private sector and national/international NGOs;
- Better allocation of local funds and continued international donor funds are needed to alleviate present situation and to work towards improving future scenarios;
- Local and/or regional scale interventions by government, communities and NGOs (e.g. community-based management at Apo Island and Danjungan Island - WWF Sulu-Sulawesi Ecoregion programme) have the potential to slow the rate of deterioration significantly, provided these receive adequate political, fiscal and logistic support.

Construction of policy options

As noted above, the Philippines, Malaysia and Indonesia have adequate legislation to address most of the key issues and concerns raised in the Assessment (see Annex IV). These nations are also parties to most of the key international conventions and treaties. What is currently lacking is multi-lateral coordination and capacity to apply the existing legislation and to review and amend the legislation to improve its functionality, particularly cross-sectorally (Chua pers. comm.). There is a clear and pressing need for an integrated multi-national conservation and development approach for the Sulu-Celebes (Sulawesi) Sea, complemented by implementation of an effective strategy to address multi-lateral and international obligations under the various conventions and treaties (see Annex IV) (Chua pers. comm.).

Consolidation of national laws and multi-lateral agreements to encompass all sectors, with better coordination in management and much improved enforcement, with ongoing and expanded community education programmes are also needed. National and international surveillance strategies, with participation from all levels of government, NGOs and local communities may be the best way of bridging the gaps between formulation, legislation and enforcement of regulations. Towards some of these goals, UNEP and GEF have formulated a Transboundary Diagnostic Analysis and preliminary framework for a strategic action programme for the Sulu-Celebes LME (GEF 1999). The PDF-A has been completed and the PDF-B is currently in draft form. The success or otherwise of the PDF will greatly depend on how the participating governments engage.

Rather than re-evaluating the many and various options that have already received substantial analysis by these governments, donors, academia and NGOs in the region and elsewhere, a subset of recommended policy options are presented, arising from the various analyses conducted to date that were considered most appropriate. These options are focused initially at the broadest policy levels, becoming increasingly directed to finer scale policy and interventions. Relevant case studies are presented throughout.

Recommended policy options

Given that the region lies at the centre of global biodiversity with adjacent GIWA regions of Indonesian Seas and South China Sea, more extensive and intensive intervention is required immediately. At the broadest policy levels, recommended options include:

- Programmes to address population growth;
- Programmes to reduce poverty, including significant focus on alternative and/or additional income generation programmes (AIG);
- Direct on-the-ground community-based conservation programmes, particularly focused on improving management of and further development of protected areas, including AIG for locals, linked with:
 - Assessment programmes for identification of critical areas for biodiversity (e.g. through government agencies and NGOs);
 - Training programmes to build additional long-term capacity among government, NGOs, and communities;
 - Multi-lateral integration to maximise effectiveness of obligations under international conventions and treaties (e.g. CBD, WHA, UNCLOS, MARPOL, Ramsar, PEMSEA).

The Sulu-Sulawesi Marine Ecoregion (SSME) approach being developed by WWF and partners provides a useful model for policy development and implementation. The approach is two-pronged: conservation planning in the long-term, and implementation of immediate conservation actions in key sites. The SSME recognises that immediate interventions should be implemented in five priority areas:

- Bio-physical (biodiversity) and socio-economic research;
- Establishment of a network of protected areas;
- Development of sustainable livelihoods;
- Information/education/communication;
- Institution and capacity building including establishment of inter-governmental mechanisms.

At the finer scale of this GIWA analysis, the key recommended policy option is improved management and expansion of the protected areas network. In light of the strong linkages between Habitat loss and community modification and Unsustainable exploitation of fish and other living resources concerns, the ameliorative role of protected areas in both regards cannot be overemphasised.

There are insufficient resources for management and enforcement of fisheries and other regulations in many MPAs, which limit their effectiveness. By contrast, several small community-based management initiatives have proven very successful at protecting coral reefs and facilitating replenishment of reef-based fisheries e.g. Apo Island (Russ 1985, Russ & Alcalá 1996a,b) and Danjungan Island (Sherwood 2002). Thus, several key examples of the successes, failures and lessons learned from previous attempts at improving management and expanding the MPA network in the region already exist (Annex X).

Box 11 Benefits of MPAs in Fisheries Management

Marine Protected Areas have the potential to play a much bigger role in the successful management and sustainable use of fisheries resources on coral reefs and associated ecosystems. In particular, participatory development of no-take zones and protection of essential fisheries habitat in the context of an ecosystem management approach should be encouraged, where appropriate, at both the community level and for larger areas. The designation of no-take marine reserves may be necessary for sustaining fishery yields over the long-term, due to their ability to preserve genetic variation in the expression of fish size and growth rates. This is because in exploited situations, the fishery selectively removes larger individuals, giving smaller, less fertile individuals a selective advantage.

Marine protected areas are most effective when they are established where vulnerable species usually live, breed, or feed, the committee said. Creating these areas has quickly restored populations of fish, snails, and crabs, reduced pollution, and provided habitats for other marine organisms in some regions, including the Philippine islands. Less than 0.25% of coastal sea areas are designated as marine protected areas. To ensure the greatest benefit to depleted fish stocks, many more protected areas should be set aside that are or once were active, productive fishing areas. Moreover, fishermen should be involved in planning and designating protected areas.

(Source: Dight et al. 1999, NRM Headline News 2002c, Roberts et al. 2002, The National Academies 1998)

In the protected zones around Apo Island (Philippines), CPUE has increased in two key families of reef fish, in response to effective protection and decreasing fishing effort (Russ & Alcalá 1996 a,b). This is an excellent example of community-based management, but to date, despite good intentions by the relevant government agencies and NGOs, there has been a lack of implementation in many other areas. The Nature Conservancy has recently conducted a detailed analysis of the benefits of MPAs in fisheries management (see Annex VII) (Mous and Pet-Soede pers. comm.). The major recommendation is included in Box 11.

Expansion and improved management of protected areas

There are several hundred protected areas already designated in the region, representing a wide range of terrestrial, coastal and marine habitats and over 100 more are currently being gazetted (Spalding et al. 2001, Cheung et al. 2002, Uychiaoco et al. 2002, WRI 2003). Most protected areas are in the Philippines, notably the large Tubbutaha Marine Park. East Kalimantan in particular is under-represented in terms of MPAs, with only two small areas gazetted in the Berau barrier complex (total area of 500 ha), and several Nature Reserves on the coasts of Pulau Laut and the adjacent mainland (Kahn & Fauzi 2001). North Sulawesi has just the one marine park, Bunaken National Park, and a few coastal terrestrial reserves.

Specific policy recommendations for improving the management and coverage of the MPA network in the region include (after Alino et al. 2000, Cheung et al. 2002):

- Review the current administrative frameworks and design strategies to resolve overlapping legal authority and jurisdiction in MPAs;
- Identify which MPAs are working, which are not and why, and

document successful case histories of MPA management (see Annex IX);

- Where necessary, design management plans that include identified source(s) of operational funding (see Annex IX);
- Retain flexibility in management approach, recognising the value of co-management through small-scale local, community-based approaches and larger scale internationally-supported management initiatives (see Annexes IX and X);
- Design and foster implementation of a system whereby each municipality or village (e.g. Barangay in the Philippines) is empowered to assist in the management of (or manage) the local MPA;
- Conduct strategic assessment of human resource requirements, including day-to-day management, surveillance and enforcement on a case-by-case basis;
- Encourage government and private sector to carry out integrated coastal zone planning and management (including watersheds), and incorporate protection of critical land areas within the parks or as buffer zones;
- Set aside as much as practicable (at least 20%) of MPA areas as 'no take' zones for biodiversity conservation and fisheries replenishment;
- Ensure Environmental Impact Assessments (EIAs) are conducted prior to any development in or adjacent to MPAs, and wherever practicable, minimise all future development of land within and adjacent to MPAs;
- Establish and/or refine monitoring programmes and re-evaluate research priorities to best address bio-physical and socio-economic management concerns;
- Work through ASEAN and other multi-lateral, international agencies and organisations to develop joint programmes, including innovative sources of ongoing funding (see Annex IX). Merrill (2001) states recommendations specifically for Indonesia's Protected Areas, but with relevance to the region as a whole, include development of:
 - Clear written policy in support of site-specific co-management of national parks and other protected areas in Indonesia provided by the Ministry of Forestry's Director General for Forest Protection and Nature Conservation. Such policy should delegate clear support and responsibility to all national park directors to develop flexible co-management structures that reflect the site-specific opportunities and constraints of their national park. Criteria for co-management include excellence in technical service delivery, professionalism and flexibility.
 - Relevant conservation user fees policies assessed and revised by the Ministry of Forestry and Ministry of Finance in order to clearly support local self-financing for conservation

Box 12 Policy for collaborative management of Indonesia's National Parks.

The Ministry of Forestry's PHKA worked with NRM, TNC and WWF to bring together more than 120 government, non-government and community stakeholders from the national to local level to strengthen and clarify its policy in support of decentralised collaborative management of Indonesia's National Parks. Specifically regarding the legal aspects of collaborative national park management policy, PHKA will focus on short-, medium- and long-term targets. PHKA will facilitate the development of a ministerial decree supporting decentralised collaborative management. This will strengthen the impact of PHKA SK No. 1633/IV/KK-6/02, in effect since November 2002. Over the next two to three years, PHKA will facilitate the development of a presidential decree (Kepres) and joint ministerial decree (SKB) between Ministries of Forestry and Home Affairs. Finally, over the next five years, PHKA will facilitate a review and possible revision of Law 5/1990 (UU 5/90) on biodiversity and ecosystem conservation, then draft an implementing regulation for decentralised collaborative management of national parks. This strategy balances immediate policy creation with the timing to create the strongest possible legal basis for collaborative management. The Ministry of Forestry's commitment to decentralised collaborative management is a significant and broadly welcomed policy shift from its previously highly centralised approach to national park management. Experience showed that a centralised approach to conservation management was ineffective and costly. Innovative field approaches clearly demonstrated that collaborative management - the bringing together of relevant government, non-government, community and private-sector stakeholders - was more efficient in harnessing technical and financial resources as well as commitment for effective conservation management in the context of regional development.

(Source: Excerpted from NRM Headline News 2003)

management. A national policy on protected areas conservation financing should ensure local collection and distribution of a majority of user fees, with only a minority going to the central government. All finances should be accounted for and booked at the national level. Transparent third party monitoring and evaluation on financial management as well as conservation management impact is essential.

- Clear guidelines and standard operating procedures are necessary for both joint patrol systems and participatory zonation processes.

Importance of co-management

Policy recommendations to better support approaches toward decentralised co-management include guidelines for co-management, conservation financing, joint patrolling and zonation (see Box 11). Co-management strengthens service delivery for conservation management. It enables national park managers to tap into the rich and diverse technical and financial resources available locally. Co-management offers flexibility. Site-specific in nature, co-management efficiently links available resources to address local constraints. From a financing standpoint, co-management provides flexibility for reaching beyond regular budget processes to tap necessary financial resources for unplanned problems. Financing co-management is possible though accessing into a range of local, site-specific financing opportunities. But such local self-financing mechanisms can only be sustained when there is a clear link to user fee collection with local conservation management initiatives. Joint patrol systems, including relevant government and community stakeholders, are effective in reducing illegal and

ecologically damaging activities in and around a protected area. Local stakeholders have a keen knowledge about the organisation of such activities. Local stakeholders appreciate the cessation of illegal activities as it supports their sustainable livelihoods. Participatory zonation is an effective strategy for balancing stakeholder aspirations with conservation management objectives of a national park. There should be monitoring and evaluation of participatory zonation agreements to ensure both objectives are met. (Merill 2001).

Notably, in a major boost of support for decentralised co-management of Indonesia's national parks, the Ministry of Forestry announced 2002 its support for the establishment of site-specific co-management forums for all the country's national parks. This policy announcement is also an indication of the growing importance of iterative, field-driven policy reform for decentralised natural resources management. Rather than relying on extensive academic studies and technical analysis, the Ministry of Forestry has taken on-going, Indonesian-based field initiatives to support national policy. Over the past few years, Ministry of Forestry officials have been able to learn about and witness positive conservation management changes, for example, in and around Bunaken National Park (Merrill pers. comm.). Ministry officials were thus able to recognise the value of supportive co-management policy in achieving their objectives of enhanced conservation management. This is a major, positive step in ensuring responsible decentralisation of Indonesia's protected areas and forest resources (see Box 9).

In the related case of the Philippines, the President of the Philippines noted in an address to the Second International Tropical Marine Ecosystem Management Symposium 2003 (also see Annex IV and VIII): "A significant Philippines national strategy is devolving management responsibility to the municipality and 'barangay' level under the Local Government Code passed by Congress in 1991... When communities are given the responsibility of managing their own resources with a little help from government and scientists, the damage to the reefs can be reversed... The Philippines Government is increasing sustainable management assistance to people who have a large dependence on these reef resources."

In light of the strong linkages between terrestrial habitat loss and land clearing, and sedimentation and suspended solids in Sulu-Celebes (Sulawesi) Sea, the ameliorative role of terrestrial protected areas also cannot be overemphasised. Bruner et al. (2001) found that the majority of parks are successful at stopping land clearing and, to a lesser degree, effective at mitigating logging, hunting, fire and grazing. The findings of this study suggest three basic conclusions.

First, the claim that the majority of (terrestrial) parks in tropical countries are "paper parks" (i.e. parks in name only) is not substantiated. Tropical parks have been surprisingly effective at protecting the ecosystems and species within their borders in the context of chronic underfunding and significant land use pressure. They have been especially effective in preventing land clearing, arguably the most serious threat to biodiversity. Second, despite their successes, there is a clear need to increase support for parks to improve effectiveness against all threats, perhaps especially against hunting.

Finally, these findings suggest that parks should remain a central component of conservation strategies. Both creating new parks and addressing the tractable problem of making existing parks perform better will make a significant contribution to long-term biodiversity conservation in the tropics. Clearly, developing additional protected areas must include extensive community and stakeholder consultation, education and regulations offering real protection, with agreement and strong support from the customary resource owners and users."

Performance of the chosen alternatives

The above policy recommendations should assist in the establishment of well-planned, well-funded, and well-implemented protected areas representing major terrestrial, coastal and marine habitats to serve as models (potential immediate coastal and marine examples include Tubbutaha, Bunaken and Turtle Island) for future protected area development.

Improved management and expansion of the protected area network is, however, only one of a suite of possible policy options that might be used to achieve conservation and fisheries management objectives (Rudd et al. 2003). Other options in relation to fisheries include effective licensing and quota systems, closed seasons, size and catch limits among many others. However, these and the multitude of other options are less likely to achieve success in the Sulu-Sulawesi (Celebes) Sea region in the short-term, largely because of the lack of capacity for their implementation and enforcement.

It is nonetheless crucial that further rigorous policy analyses that consider a full range of environmental and socio-economic costs and benefits, including the transaction costs of management be undertaken (e.g. see Annex IX). If credible analyses are not undertaken throughout the region and elsewhere, there is a danger that current

enthusiasm for protected areas may wane as economic performance fails to meet presumed potential. As Rudd et al. (2003) note, fully accounting for the value of ecological services flowing from protected areas requires consideration of increased size and abundance of focal species within reserve boundaries, emigration of target species from reserves to adjacent fishing grounds, changes in ecological resilience, and behavioural responses of fishers to spatially explicit closures. These analyses are in their infancy, and are only now beginning to be undertaken globally. Nonetheless, the data available generally do support the effectiveness, efficiency, equity, political feasibility and implementation capacity of protected areas in mitigating both habitat loss and overexploitation of fish (e.g. Roberts et al. 2002 and references therein). For the Sulu-Celebes (Sulawesi) Sea region, the policy option is considered to have:

Effectiveness

Low to medium, as the levels of environmental and socio-economic impact to habitats are expected to increase to 2020, despite presently planned interventions. Notably, the key root causes of overpopulation, poverty and market demand, compounded herein by intra- and international differences in cultural/religious beliefs, must be addressed. Effectiveness can be improved markedly with more equitable use of funds and continuing donor, government and NGO support. Effectiveness correlates with basic management activities such as enforcement, boundary demarcation and direct compensation to local communities, suggesting that even modest increases in funding would directly increase the ability of protected areas to protect tropical biodiversity and restore harvested species.

Efficiency

Medium, with clearly prioritised objectives and goals and the development of transparent systems for funding and implementation, but with major remaining impediments of corruption across all levels from local to national, and unresolved political instability (e.g. separatist movements) in parts of the region. Efficiency clearly is linked closely with effectiveness, and thorough evaluation of efficiency will require expansion of future policy assessments beyond standard cost-benefit analysis, particularly considering the impact of social capital on the costs of managing fisheries.

As Rudd et al. (2003) conclude: "In the short term, the amount of social capital that communities possess and the capacity of the state to support the rights of individuals and communities will affect the relative efficiency of marine reserves. Reserves may be the most efficient policy option when both community and state capacity is high, but may not be when one and/or the other is weak. In the longer term, the level

of social capital that a society possesses and the level of uncertainty in ecological and social systems will also impact the appropriate level of devolution or decentralisation of fisheries governance. Determining the proper balance of the state and the community in tropical fisheries governance will require broad comparative studies of marine reserves and alternative policy tools".

Equity

Low to medium, with increasing stakeholder involvement and major education and awareness campaigns occurring. The special circumstances of local subsistence fishers are being addressed explicitly in policy.

Political feasibility

Low, with unresolved conflicts and gaps in jurisdiction among the various government levels placing serious impediments on resolution of some of the key environmental and socio-economic issues. These key issues are only now beginning to be addressed in a coordinated tri-lateral, national, state and local manner.

Implementation capacity

Medium, with developing capacity among the three national governments, NGO and community groups for effecting change, and with considerable international donor support. There is also increasing recognition among the communities themselves that interventions are crucial to their longer-term sustainability. However, the area is very large and poorly known, with insufficient biodiversity and fisheries assessments and monitoring undertaken to date. There remain serious deficiencies in capacity in on-the-ground implementation, including unresolved difficulties in effective surveillance and policing (see Annex IX), providing challenges for implementation and, at present, levels of funding for these initiatives are not assured.

WWF's Sulu-Sulawesi Marine Ecoregion Programme (SSME) programme is receiving some support from the governments of Indonesia (through their Ministry for Marine Affairs and Fisheries (MMAF) coordinated by the MMAF Director General), and is also supported by the governments of the Philippines and Malaysia. Other global initiatives, including the International Coral Reef Action Network (ICRAN) and Millennium Ecosystem Assessment (MEA) have potential benefits for developing an integrated functional protected areas network in the region. ICRAN has chosen Bunaken National Park and Komodo National Park (in adjacent Indonesian Seas) as demonstration sites, while MEA (Sub-Global periodical meeting for 2003) has proposed two demonstration sites: Bunaken National Park and the Jakarta Bay Area (GIWA region Indonesian Seas). Bunaken National Park has already received substantial

support from the Government of Indonesia, USAID, WWF-Wallacea and other donors, and has been selected as one of four MPAs to participate in a pilot study to develop business plans for Asian MPAs under the auspices of the World Commission on Protected Areas South East Asia Marine (WCPA SEA Marine) working group. Its proposed selection as a demonstration site by MEA and ICRAN is also in accordance with the goals of the SSME Programme, providing a high degree of complementarity in these policy initiatives. Bunaken National Park is providing a useful model for innovative self-funding mechanisms, among other management initiatives, likely to be applicable in other protected areas (Annex IX).

Conclusions

When effectively implemented and managed, a fully integrated network of protected areas can play a key role in minimising future habitat loss and restoring the region's fisheries stocks, which are in urgent need of careful stewardship if their sustainable future utilisation is to be assured. In addition to a high degree of local community-

based support, success will require effective enforcement, particularly of poaching and fisheries regulations, and reliable biodiversity and harvested stock assessment and monitoring. These need to be founded in an improved understanding of the population biology of the target species and issues of ecological scale and connectivity in relation to replenishment. There is strong potential for well-planned mariculture of some ornamental and food species, with the need for continuing development of appropriate policy and legislation.

The refinement of these policy options will emerge during continuing development of the Sulu-Sulawesi Marine Ecoregion Program and GEF initiatives. The identification of the issues and options above, however, may provide guidance beyond that already gathered in the GEF process. Without doubt, the Sulu-Celebes (Sulawesi) Sea must be a priority area for future GEF initiatives, including those of the International Waters community. The region is at the centre of the world's marine and terrestrial biodiversity, and is surrounded by a rapidly growing population and rapidly deteriorating ecosystems. The challenge of gathering the national and international, transboundary cooperation necessary for the sustainable development of this critical region is great, but not insurmountable.