V

INSTITUTIONAL REFORM AND STRENGTHENING TO SUPPORT IMPLEMENTATION OF THE PLAN

Increased commitment of funding and resources to biodiversity conservation will only be effective to the extent that responsible institutions have the capacity to act effectively. Current efforts to conserve biodiversity are restricted by policies, legislation and institutional weaknesses. The objectives outlined in the Biodiversity Action Plan can only be attained through an integrated programme of institutional, legal and policy reforms coupled with increased investments.

A. Legislation

Recommended Actions:

1.1. Review all existing legislation relevant to conservation of biodiversity with a view to reform and more effective implementation. All national laws and regulations relating to biodiversity should be based on sound ecological principles.

1.2. At present land tenure and coastal zone management issues are regulated both by national and *adat* law. Review control of biological resource use in different provinces to aim for greater consistency to promote conservation of biodiversity.

1.3. Specifically review and revise regulations that govern the ownership, access and management of forest lands , which are incompatible with the objective of conserving biodiversity *in-situ* outside protected areas. Revision is needed to recognise a range of 'peoples' rights'.

Such rights affect *adat* community property uses, sustainable harvesting of non-timber products from some production and protection forests (extractive reserves), legal status of buffer zones, recognition of community forests owned and managed by local communities under a set of conservation covenants and rules.

1.4. Review and revise the laws relating to ownership and access to marine resources to recognise community property rights to harvest coastal and marine resources. Many sophisticated marine management systems are employed by local communities in Indonesia but are being systematically undermined by a combination of the 'open access' that 'public' ownership creates and the increasing pressures of local commercial fishing fleets. Recognition of marine common property rights will enfranchise local communities in the conservation and wise use of marine resources.

1.5. Ensure that new regulations under the Conservation Law provide a framework for controlling exploitation and stress conservation of biological resources.

1.6. Improve the effectiveness of existing legal mechanisms by creating awareness of conservation regulations and by stricter law enforcement, e.g. for the wildlife trade.

1.7. Review the effectiveness of current protection for plants, animals and cultivars. Prepare and adopt integrated species / habitat protection laws and regulations.

1.8. Require as a matter of law the development or management of recovery plans for harvested or endangered species.

1.9. Consider the protection of areas of major biological diversity, e.g. wetlands and marine areas, and integrate mechanisms for these needs in non species-specific legislation e.g. agriculture.

1.10. Establish legal relationships to govern collection of genetic materials and the distribution of benefits derived from their use.

B. *Institutional Capability*

Recommended Actions:

2.1. A thorough review is needed of the management capabilities, personnel and financial resources available to all institutions charged with managing biological resources (PHPA, Ministry of Forestry, Fisheries, Agriculture, KLH, Dalam Negeri, LIPI, LON, universities, BKLH). The review should deal with such issues as: 1) overall budgets; 2) personnel numbers and division into technical and administrative staff; 3) number and size of areas under the responsibility of individual institutions; 4) general assessment of performance; 5) con straints and limiting factors e.g. recruitment procedures in PHPA; and 6) recommendations for overcoming constraints e.g. improved training, revised mandates, redistribution of manpower and resources.

2.2. Review and adjust the mandates of the agencies which are the main actors in conservation of biodiversity in accordance with capabilities and resources.

2.3. Review the marine conservation programme to determine the most appropriate agency/agencies to manage marine reserves and to develop an action strategy commen surate with current institutional resources and budget allocations. Although historically Ministry of Forestry has been entrusted with respon

sibility for all conservation activities, it is widely recognized that MoF has limited expertise and inadequate resources for a marine conservation programme. A new agency for marine conservation could draw on staff from LON, LIPI, local universities and PHPA.

2.4. Determine the most appropriate control and management authority for buffer zones outside national parks.

2.5. Review and adjust the roles, organization and reporting mechanisms of directorates and sub-directorates within PHPA for better coordination of field programmes.

2.6. Evaluate current staff policy within Ministry of Forestry (and other agencies as appropriate) in regard to staff transfers and redistribution of manpower and resources to increase the agency effectiveness to fulfil its conservation mandate. With the current policy of transferring middle level staff between conservation and production sections, it is difficult to main tain a corps of qualified and experienced conservation officers.

2.7. Recognize the limitations of existing government agencies for implementing conservation programmes and encourage collaboration from other sectors e.g. LIPI, NGOs, private sector (Appendix 14).

2.8. Ensure that decision makers in spatial (land use) planning have the capability and access to appropriate information to make informed decisions for conservation of biodiversity. Strengthen provincial planning authorities.

2.9. Strengthen the capabilities of NGOs and community institutions to play an effective role in development decisions relevant to conservation of biodiversity (Appendix 14).

C. *Development of Inter-sectoral Coordinating Mechanisms*

3.1. Inter-ministerial committees already exist and can be an effective mechanism for encouraging better linkages between sectoral programmes which will impact on biodiversity.

3.2. Establish greater linkages in programming and implementation between MoF/PHPA, KLH and other concerned institutions and NGOs. Within MoF establish better linkages in programming between various directorates so that overall activities are better coordinated to conserve biodiversity.

3.3. Establish a Biodiversity Commission under an independent chairman. This Commission will draw members from all institutions and agencies concerned with conservation and management of biological resources. The Biodiversity Working Group already established under KLH will provide core members for the Commission. The Commission will review major biodiversity projects and ensure that funding is channelled to those areas and projects identified as priorities by the National Action Plan.

3.4. Establish better linkages between MoF/PHPA and LIPI/LON to blend the LIPI research, inventory and monitoring programmes with reserve and forest management priorities to facilitate conservation planning and management to maintain biodiversity.

3.5. Establish better linkages between KLH/BKLH, NGOs and MoF/PHPA at national and provincial levels to provide increased in formation, awareness and publicity for current management priorities. Greater sharing of

plans and perceptions can strengthen programmes of mutual interest.

3.6. Provide specific rulings on development concessions e.g. oil and gas, and logging in or near established reserves.

3.7. National forestry policies, e.g. revision of the TGHK map, should be prepared in consultation and coordination with other agencies.

3.8. At the provincial level, improve coordination of various sectors in and around conservation areas to develop a consistent policy towards protection and management issues. This will avoid situations as in Kutai and Gn Leuser, national parks where settlement is legally prohibited but pioneer settlements within the park boundaries have received facilities and assistance from other government sectors such as Health, Education and Agriculture.

3.9. Establish mechanisms for greater information sharing between relevant government and non-government agencies.

3.10. Incorporate biological diversity concerns into development projects in all sectors.

3.11. Establish a management authority in each province or region (with representatives drawn from all relevant sectors) to coordinate marine conservation programmes and to evaluate development programmes which will impact on coastal and marine biodiversity e.g. a coastal zone biodiversity authority.

D. *Allocation of Management Responsibility*

4.1. Review and adjust management authority and responsibility between central, provincial and local government to strengthen management and conservation of biological resources. This is in process, in accordance with the government policy of decentralization.

4.2. Priorities for conserving biodiversity must be established at a national level, in order to give adequate protection to all of Indonesia's varied ecosystems and species. Action plans will usually have to be implemented at a regional or provincial level and will therefore require strong provincial support and endorsement.

4.3. Review the current government policy of decentralisation, increasing *kabupaten*-level authority, for its implications on the effectiveness of protected area management and biodiversity conservation.

4.4. Review and reconcile the responsibilities of Kantor Wilayah (responsible to the Ministry) and Dinas Propinsi (reporting to the Governor) for each department to avoid duplication of functions and avoid conflict of interests.

4.5. Where protected areas overlap several provincial or administrative units *(kabupaten)* appoint a management authority with representatives from all relevant agencies (on the model of the proposed Lake Toba Authority) to ensure close coordination between responsible agencies for a holistic and consistent management approach to conserve biodiversity.

4.6. With decentralization of authority to the *bupati* level, explore the options for greater local involvement in conservation of biodiversity, especially for sites or resources of particular local interest. For conservation of extensive habitat blocks, wide-ranging or migratory species, local management may be less appropriate than management from provincial level.

4.7. Establish a direct link between BAPPENAS and provincial BAPPEDAs so that agreed national conservation priorities are reflected at the provincial level. Upgrade the BAPPEDAs by providing environmental and ecological training to key personnel so that conservation planning becomes an integral part of the regional planning and development process.

4.8. The BKLH should play a larger role at the provincial level concerning environmental issues and management of biological resources.

E. Needs and Potential Roles of Local Communities

5.1. Review the needs of local communities in biological resources management, addressing such issues as land tenure; traditional rights; community property rights and utilisation of wild resources for subsistence/income; limitations on migration; incentives to relocate; taboos and special sites within reserves. These are complex issues which need to be considered at national, provincial and local levels.

5.2. Provide opportunities and incentives for local communities to play a management role in conserving biodiversity either by supporting protected area management or implementing conservation-orientated agricultural or management systems, e.g. agroforestry/community management of reefs (Appendix 14). Participation will vary according to the skills and traditions of the local community and may require different application with regards to traditional and tribal groups versus immigrant settlers, transmigrants and newcomers.

5.3. Devise and implement management strategies for greater community participation in protection and management of terrestrial and marine reserves e.g. local recruitment for park staff/tourist guides; participation in management committees; buffer zone activities; improved education/health/employment opportunities; conservation education and extension programmes; guardians of special cultural or traditional sites.

5.4. Discuss and agree boundaries of protected areas with local communities, taking into account their present and future needs. The ultimate responsibility for planning and demarcation of reserve boundaries will still remain with PHPA and be guided by ecological and geographical principles.

5.5. Involve local communities and NGOS in management of buffer zones adjacent to parks and conservation areas, utilizing traditional skills and knowledge of agroforestry or marine harvesting techniques as appropriate (Appendix 14).

5.6. Document traditional knowledge and recognise traditional needs and tribal rights to sustainably exploit biological resources, including benefits accruing from commercial applications of traditional knowledge.

5.7. Initiate socioeconomic surveys of communities living adjacent to terrestrial and marine reserves to determine community dependence on biological resources and/or need for land. Such surveys will provide information on buffer zone and management needs for the short-term and long-term.

5.8. Review regional development plans to rationalize intervention options for boundary stabilization of protected areas. Planned developments, (industries, roads and communications systems, marketing facilities) will be key regional factors dictating the relationships of protected areas to the surrounding communities. Options should also include resettlement alternatives, particularly for communities without established land tenure.

F. Economic Evaluation of Costs and Benefits of Biological Diversity

The ecological and environmental values of natural habitats such as forests, wetlands and coastal habitats are almost never considered in national accounts. Yet these benefits (watershed protection, genetic resources, soil protection, hydrological functions, fisheries protection, research and recreation potential) may far outweigh the costs of conservation (staff salaries, lost agricultural opportunities). Development and conservation objectives do not need to conflict. Most protected areas, for instance, can be justified according to traditional cost-benefits criteria.

Recommended Actions:

6.1. Identify and review existing agencies, at all tiers of government, involved in the allocation of significant levels of natural resources in order to determine their capacity to perform economic analyses of biodiversity conservation.

6.2. Nominate key agencies to assume future responsibility for economic analyses of biodiversity conservation.

6.3. Develop, document and adopt standardised methodologies for both rapid and detailed economic valuation of biodiversity conservation, tailored to the requirements of individual decision-making agencies. The results of the use of these adapted methodologies on the same resource allocation problem should be directly comparable across agencies.

6.4. Determine immediate and long-term training needs and priorities for strengthening agency capacity in economic analysis and initiate appropriate training.

6.5. Review existing resource allocation processes and criteria in agencies involved in the allocation of significant levels of natural resources and determine the most appropriate procedures for the incorporation of economic analyses into individual agency decision-making processes.

6.6. Review existing legislation governing environmental impact assessment and the allocation of natural resources. Draft additional legislation as necessary to require the consideration of economic issues in the resource allocation process.

6.7. Identify significant natural resources not adequately protected by the implementation of existing legislation and determine the economic costs of this lack of protection of biodiversity (e.g. fisheries). Develop appropriate measures to protect such resources.

6.8. Document economic returns from harvests of non-timber forest products: assess potential and sustainable yields of a given area and establish clearer property rights to these resources. Monitor wildlife trade and its sustainability.

6.9. Estimate the costs and potential economic, environmental and biodiversity returns from establishing specific national parks and reserves - see Table 5.

Table 5 Economic and Environmental Benefits of National Parks

Park	Total area (Km2)	Water-supply/ control	Agricul-ture	Fish-eries	Indust ry	Tourism potent-ial	Biodiv-versity	Genetic resources	Rese-arch/ education	Soil or coastal protection
1. Sumatra										
Barisan Selatan	3650	***	***	*		*	***	**	*	***
Kerinci Seblat	14846	***	***	*		**	***	**	*	***
Way Kambas	1235	**	**	***		***	***	*	***	**
Gn. Leuser	8080	***	***	**		***	***	***	***	***
2. Java and Bali										
Gede/Pangrango	150	***	***	*	***	***	***	**	***	***
Ujung.Kulon	761	**	**	***		***	***	**	***	***
Baluran	250	**	**	**		***	***	*	***	*
Bromo Tengger/Ijen	576	***	***	*	*	***	**	**	**	
Meru Betiri	580	***	**	**	*	**	***	**	*	**
Alas Purwo	620	**	**	**		***	***	**	*	*
Bali Barat	570	*	*	***		***	***	*	*	**
P. Seribu	1100			***		***	***	***	***	**
Karimun Jawa	1116			***		***	***	***	**	**
3. Kalimantan										
Gunung Palung	900	***	**	**		*	***	***	***	**
Tanjung Puting	3050	***	**	**		**	***	**	***	*
Kutai	2000	***	**	*	***	***	***	**	**	*
4. Nusa Tenggara										
Gn. Rinjani	1170	***	***	*		***	***	**	*	***
Komodo	340	**		***		***	***	**	**	*
5. Sulawesi										
Lore Lindu	2310	***	**	**		**	***	**	*	**
Rawa Aopa	1500	***	**	*		*	***	*	*	*
Dumoga Bone	3000	***	***	**		**	***	***	***	***
Bunaken	890			***		***	***			
6. Maluku										
Manusela	1890	***	***	**		**	***	***	***	***
7.Irian Jaya										
Wasur	4262	**	*	***		**	***	***	*	**
Tk Cenderawasih	14500			***		***	***	***	*	***