

**Goal 2:**

1. Creation of a national program in the area of strategic and basic research on biodiversity, to be effectively implemented through the provision of financial and human resources support.
2. Increased applied researches on sustainable management of biodiversity, particularly, but not limited to, its sustainable use for medicine, cosmetics, and agriculture products, through the development of an appropriate and effective incentive system.
3. Dissemination of information, easy access to information sources, and application of simple and appropriate technology for a sustainable and balanced management of biodiversity, at the levels of communities, the private sector; and the government at the local, regional, and national levels.
4. Implementation of incentive system for the application of simple and appropriate technology, as well as local wisdom in the management of biodiversity at the community, private sector and government levels.
5. Improvement in the development of up to date and accurate data base on the area of biodiversity-rich agro-ecosystems, together with local cultivation techniques to be initiated by 2004, with the objective to protect such areas, through the formulation and implementation of effective laws and regulations, by 2005.
6. Implementation of national biodiversity census during 2004-2007 to be used as a foundation for planning sustainable management of biodiversity for the period of 2009-2020.
7. Identification and mapping of damage to sea grass ecosystem, its rehabilitation and prevention of further damage, by 2005.
8. Identification of pollution level in marine and coastal ecosystems, particularly in densely populated and industrial areas, and recommendations for damage prevention and rehabilitation targets, by 2020.
9. Mapping the potentials and problems of karst areas by 2006.

**Objective 3:**

To reduce and stop the rate of biodiversity degradation and extinction at the national, regional and local levels within the 2003-

2020 period, along with rehabilitation and sustainable use efforts.

**Goal 3:**

1. Reduction in the degradation and loss of biodiversity by 2010.
2. Reduction in the deforestation rate of natural forests to zero level in 2020, beginning in 2003 for lowland forests in Java, Sumatra, and Kalimantan, followed by other regions, based on their respective conditions.
3. Rehabilitation of natural forest at an average annual rate of one million hectare, starting in 2004, by allowing natural regeneration and the cultivation of indigenous trees species.
4. Stopping conversion of natural forests by end of 2003.
5. Stopping destructive fishing practices at coral reef by 2003.
6. Recovery of fish stocks and other marine biota in the already depleted areas by 2015.
7. Starting the conservation of sea grass by 2004 and the recovery program of damaged areas by 2007.
8. Stopping the reduction of wetland areas to zero level by 2005.
9. Phasing out mining activities in conservation areas and small islands, beginning in 2003 until 2006, through the provision of national policy and regulations, with follow up implementation by regional government.
10. Stopping the disposal of mining waste, directly or through the river systems, into coastal and marine waters, by 2004.
11. Formulation of action plan for the sustainable management of karst in 2007.
12. Progress in the development of biodiversity sustainable use concept based on conservation principles at the local, regional and national level in 2004, followed by its implementation, beginning in 2005.
13. Implementation of non-extractive, bio-prospective management of biodiversity by increasing its utilization through a new paradigm.

**Objective 4:**

To empower institutional, policy and law enforcement arrangements at the national, regional, local, as well as at customary level so

as to be effective and conducive for the management of biodiversity in a synergic, responsible, accountable, fair, balanced and sustainable manner.

**Goal 4:**

1. Ratification of the Cartagena Protocol on Biosafety, ratification and implementation of national regulations on biosafety and food safety related to genetically modified organisms and products, by 2004.
2. Formulation and implementation of policies to restructure the forest-based industries, based on the carrying capacity of forests to produce raw materials, by 2003.
3. Elimination of illegal logging and harvesting of flora and fauna, including their illegal trade, beginning in 2004.
4. The issuance and implementation of sustainable timber harvesting, through environmentally friendly methods, and adapted to the carrying capacity of the local ecosystem, beginning in 2004.
5. Formulation of policy on and implementation of sustainable agriculture, based on agro-ecosystem characteristics and genetic resources richness of each bioregion, with emphasis on food security and local farmers welfare at the household level, by 2005.
6. Formulation and implementation of policies to address and prevent invasive species that threaten local biodiversity.
7. Formulation and implementation of policies to protect genetic resources and local/customary knowledge of communities, by 2006.
8. Completion of the initiative to formulate and ratify Natural Resources Management Act (PSDA), if possible, also integrating the management of genetic diversity and the sharing of its benefits, by 2004.
9. Development and mainstreaming of the ecosystem approach, the concept for archipelagic and small islands biodiversity management, and bioregional biodiversity management at the national level, followed by detailed elucidation and effective implementation at each region, starting in 2004.
10. Improvement in the capacity and competence of regional government officials in conducting biodiversity valuation as an instrument for developing management policies at the local and regional levels.

11. Improvement in the active participation and involvement of Indonesian delegation in the negotiations of international agreements related to biodiversity, by prioritizing national interests.
12. Improvement in the capacity of government and communities, at the national and regional level, to sustainably use biodiversity, but ensuring conservation priorities.
13. Better coordination in the implementation of CBD between government and non-government agencies, and improved coordination in the implementation of various other international conventions such as CITES and Ramsar.
14. Establishment of the National Council on Sustainable Development, which will be operational from 2003; one of its tasks would be to monitor and evaluate the implementation of IBSAP, to be effectively followed by the establishment of similar council at the provincial level, by 2004.
15. Establishment of Biodiversity Clearing House, which shall be in operation by 2005, with a standard operating procedure or working mechanism that takes into account easy access of information for the general public.
16. Development and implementation of the precautionary principle as part of the sustainable management of biodiversity.

**Objective 5:**

To achieve fair and balance of roles and interests of Indonesian society, as well as to reduce conflict potentials among all relevant sectors in a conducive, synergic, responsible, accountable manner in the sustainable use and conservation of biodiversity.

**Goal 5:**

1. Identification of conflict or dispute cases related to sustainable use of natural resources and biodiversity, at the indigenous community, local, regional, and national levels by 2004; this also includes global level disputes concerning the importance of Indonesian's biodiversity.
2. Identification of potential sources of conflict on biodiversity that would be useful to prevent further disputes in the communities, in 2005.
3. Compilation of existing laws and regulations at the national, regional, local lev-

els, including the indigenous communities, which should provide support for dispute resolution on the management, utilization and conservation of biodiversity, in 2004.

4. Establishment of mediatory and advocacy institution to deal with biodiversity dispute settlement, to be organized by government or communities, at the national, regional and local levels.
5. Establishment of an early prevention, resolution and appeal mechanism for settling disputes on biodiversity management, at the national, regional and local levels.
6. Establishment and implementation of a transitional mechanism for resolving conflicts on biodiversity management in the past, at the national, regional and local levels.
7. Identification of existing and potential conflict cases arising from human activities that have negative impacts on wildlife, by 2005 and establishment of a mechanism to overcome and prevent such conflicts, by 2006.

## STRATEGIES FOR IBSAP IMPLEMENTATION

To achieve the above objectives and goals, two types of strategy are formulated for the management of biodiversity in Indonesia for the period of 2003–2020. This section also discusses the mechanism for IBSAP implementation and coordination, as well as its monitoring and evaluation.

### Time Period Strategy

The time period for IBSAP implementation is set based on the time period stipulated in the Decree of MPR No. VII/2001 on Vision for Future Indonesia, that is until 2020. Given that this is a relatively long term, IBSAP needs to be implemented in a sequence as described below.

- *Initial and Dissemination Phase (year 2003)*. The implementation of IBSAP will start in 2003, the main activity being the dissemination of the IBSAP documents. Preparation for institutional infrastructure as well as national policies related to the long-term management of biodiversity is also conducted during this phase.
- *Transitional Phase (2004-2008)*. National

programs and policies, paradigms and actions supportive of sustainable biodiversity management will be created and disseminated, and implemented as a basis to achieve biodiversity management objectives in the next phase or period. Efforts to reduce the rate of biodiversity degradation as a basis for sustainable management must also be strengthened during this phase.

- *Consolidation of Action Phase (2009-2020)*. A comprehensive and coordinated implementation of the entire action plan for national biodiversity management will be accelerated during this phase. One of the most important components is the measurable rehabilitation, conservation, and utilization of biodiversity in a balanced manner, with consideration for its conservation principles. The implementation of good governance, particularly in the sustainable, responsible and accountable management of biodiversity will hopefully have been developed during this period. Other important components during this phase are the development of effective and just law enforcement, and management practices based on traditional wisdom and local knowledge, with equitable sharing of benefits. It is hoped that sustainable biodiversity management has been realized during this phase, in order to improve the welfare of Indonesians, as well as human kind in general, including the future generation.

### Operational Strategies

There are four main operation strategies: mainstreaming, capacity building, decentralization, and participation and movement.

#### Mainstreaming strategy

This strategy is aimed at developing a national policy and legal framework that also incorporates the provisions in relevant international conventions. It is hoped that the framework can become a reference for the behavior and actions on the sustainable management of biodiversity. The policy framework must be followed by and incorporated in the operational procedures by all levels of regional government in the form of regional regulation and technical guidelines, in conformity with the local conditions. Mainstreaming biodiversity management at the national level also includes

the formulation and implementation of the concept for community behavior and actions on the sustainable management, rehabilitation, conservation, and sustainable use of biodiversity at the local, regional, and national levels, and in a responsible and accountable manner. This process needs to be supported by conducive and just law enforcement, improvement in policies and institutions, by recognizing and integrating traditional wisdom and local community knowledge, based on equitable sharing of benefits arising from the utilization of such knowledge and wisdom.

#### **Capacity building strategy**

This strategy involves the dissemination of various laws and regulations, concepts and methods, knowledge and technology as well as information on the sustainable management, rehabilitation and conservation of biodiversity. This would hopefully empower national and regional governments, communities, private sector and other stakeholders in the sustainable and fair management of biodiversity. One of the initial steps towards capacity building would be to identify those who are involved, interested and competent in biodiversity management. In the process of the preparation and publication of the IBSAP documents, some of the stakeholders have been identified and the list is provided in the Directory of Stakeholders on Biodiversity in Indonesia.

#### **Decentralization strategy**

This strategy is based on local specific problems in biodiversity management, and therefore it cannot be uniformly applied in all areas. Its effectiveness also depends on the capacity of the local communities, together with local government. This strategy conforms to the national policy to grant autonomy to the regions in managing the interests of the people based on local aspirations. Therefore the national policy and legal framework for biodiversity management must provide a wider space to the regions to formulate and implement their own local biodiversity action plans. National policies must function as facilitators for the development and implementation of local biodiversity action plans, and they must provide clear and firm performance indicators in order to accelerate the achievement of the national objectives of managing biodiversity in a sustainable, responsible and accountable manner.

#### **Participation and movement strategy**

Sustainable biodiversity management cannot be undertaken only by one agency or only by the government. This strategy is aimed at involving all components of the nation in implementing IBSAP in the form of a movement in which each community group take actions in synergy with other groups. The first step would be to encourage all those groups who were involved in the formulation of IBSAP (as listed in the Directory of Stakeholders on Biodiversity in Indonesia) to conduct dissemination and socialization of the IBSAP document, and integrate its contents into their activities. Nevertheless, the participation and movement strategy would still depend on the facilitation and the political will of the government at the early stages to involve all stakeholders. This needs to be conducted continuously so as to create a movement for national biodiversity management, and communities are willing and able to implement some of the IBSAP programs independently, or in synergy with other stakeholders.

The above strategies will be implemented through a process approach, in which the national biodiversity management action plan for 2003-2020 will emphasize and prioritize the learning process and genuine implementation so as to realize the sustainable use and conservation of biodiversity in a responsible and accountable manner. The approach will also prioritize the involvement of communities, NGOs and the private sector in all aspects and process of biodiversity management, starting from data collection, planning, and implementation to supervision and evaluation. Hopefully this will create a sense of belonging, sense of responsibility, sense of accountability, even sense of crisis towards conservation and utilization of biodiversity.

For these strategies to work there must be an effort to develop data base and information centers on biodiversity at the regional and national level, including assessment of its actual and potential damages and problems.

#### **Mechanism for coordination and implementation**

The national IBSAP was formulated under the coordination of BAPPENAS, involving various sectors of the civil society, academics, the private sector and governments at the national, provincial and kabupaten levels. It is hoped that IBSAP becomes a reference for any

agency in Indonesia, such as local and national government, local, national and international NGOs (operating in Indonesia), the private sector and donor agencies interested in biodiversity management in Indonesia. To that end, provincial, kabupaten and city governments are encouraged to formulate their Regional and Local IBSAP documents. Similarly, relevant sectors such as forestry, agriculture and others need to compile sectoral action plans on biodiversity, using the national IBSAP as a reference.

At the national level, the implementation of IBSAP is the responsibility of the head of Republic of Indonesia, since the document is legitimate based on the MPR decree No. VII/2001 on Vision of Future Indonesia. The head of the state can delegate certain Coordinating Minister, or the Minister of Environment, or NCSD to coordinate the implementation of IBSAP by various stakeholders. Recommendations on the institutional arrangement for IBSAP implementation are provided in Chapter 7. Subsequently, each government agency involved in or are relevant with IBSAP needs to take follow up measures by formulating or revising (if already in existence) their respective strategic plans and budget allocation.

The Governors, as the head of province as well as the representative of the national government will coordinate the implementation of IBSAP at the regional level. The Bupati/Mayor will do the same for the Kabupaten/City level. Although administratively the government (the public sector) will drive the implementation of IBSAP, it has to seriously take

into account good governance practices, emphasizing the need for public and private sector participation in various forms of collaboration and partnership.

#### **Monitoring and evaluation**

The implementation of IBSAP at various levels needs to be monitored and evaluated regularly by agencies that have such authority. At the national level, BAPPENAS will conduct monitoring and performance evaluation through the existing standard mechanism at the government level. The head of sectoral government agencies and the Ministry of Environment will conduct monitoring and evaluation on the success of IBSAP implementation at the sectoral level. In addition, regional level monitoring and evaluation must also be conducted, in accordance with the spirit of decentralization and regional autonomy.

Communities and the private sector are also encouraged to independently conduct monitoring and evaluation of IBSAP implementation, based on the respective competence at the national, regional and local levels.

IBSAP evaluation will also be integrated into the long- and mid-term development planning at the national and regional level. The first evaluation period can be conducted in conjunction with the formulation of 2004/2009 National Development Program (Propenas), and then every five years; the strategy and action plan in IBSAP can be revised or adjusted, if necessary. Further discussion on evaluation and monitoring mechanism is provided in Chapter 7.





**The forests of Maluku** provide various services for the communities and environment, such as controlling flood, maintaining soil stability, providing industrial raw material, employment and non-timber forest products for daily consumption, medicine and socio-cultural purposes.



# 6

## NATIONAL BIODIVERSITY ACTION PLAN, 2003-2020

This chapter discusses the policy direction and the national action plan for biodiversity management for 2003-2020. It should be treated as one unit with Chapter 5, which elaborates on the strategy for biodiversity management. Basically, the action plan provides the means to achieve the vision, mission, objectives and targets of the biodiversity management as formulated in Chapter 5. The objectives and targets may only be reached if IBSAP is implemented on the basis of public participation and as a collective action.

### **POLICY DIRECTION FOR BIODIVERSITY MANAGEMENT**

The national policy direction of IBSAP implementation has eight components, as formulated below:

1. Improve the ability of communities in conducting sustainable and equitable management of biodiversity based on local knowledge and wisdom, supported by an easy access to accurate data and information on the functions and potentials of biodiversity, their distribution and abundance, etc., and by fair and profitable trade and pricing system which reflects the protection of biodiversity and local traditions and knowledge, for the achievement of equitable social welfare and the eradication of poverty.
2. Enhance and expand research and development of knowledge and technology for sustainable biodiversity management, followed by the development and dissemination of biodiversity information network, supported by a transparent and mutual partnership among the government, private sector, community at local, regional, national and international levels.
3. Improve and preserve ecosystem functions and equilibrium at the local, regional, and national levels that ultimately lead to sustainable and equitable welfare of the people, both for the present and future generations, as the realization of the competitive advantage of Indonesian economy in both domestic and global markets.
4. Build sustainable economy by developing biodiversity-based technology which is environmentally and socially friendly, and in conformity with the objectives to improve the welfare of the people, protect and respect the rights of local community, and consider equitable and responsible distribution of profits arising from its utilization.
5. Develop biodiversity management systems (conservation, rehabilitation, and utilization) which is fair and sustainable and based on local and indigenous knowledge for improving the welfare of the people, through generations; this will be achieved through an integrated planning, implementation, monitoring and evaluation of its results by the central and local government apparatus, community members, and the private sector through the implementation of good governance.
6. Build and develop effective institutional arrangement and policies at the national and local levels, accompanied by effective law enforcement for biodiversity management, which is synergic, responsible, and accountable and in conformity with international agreements on biodiversity management.
7. Enhance deconcentration and decentralization of government authority in biodiversity management to local government and community, gradually and selectively, supported with sufficient assistance, so that the local government is capable to sustainably manage biodiversity at local and regional levels based on people participation.
8. Develop mechanisms for natural resources and biodiversity conflict resolution at local, national and international levels, which is consensus oriented, fair, mutually beneficial, transparent, responsible, and accountable.

## ACTION PLAN FOR BIODIVERSITY MANAGEMENT

The national action plan for biodiversity management 2003-2020 is presented in five tables below, based on the five objectives that have been formulated. The time frame for action plan implementation is provided, along with its performance indicators for the institutions and regions responsible for its implementation. The programs proposed in this action plan are based on the results of regional workshops, technical reviews by the thematic consultants in forestry, coastal and marine resources, wetlands, and agro-ecosystem, and recommendations given by the Focus Discussion Groups and the results of second national workshop.

Most of the programs will be implemented at the national level, but there are specific activities for certain regions as indicated in the

column for institution/region. The inclusion of the institutions responsible for each program is indicative because it has not been discussed intensively with each relevant institution. Therefore for each program listed an arrangement for collaboration is required and should follow the principle of openness, which means that other institutions that are currently not listed are encouraged to participate according to their interests. There is a list of abbreviations at the end of this chapter, to facilitate easy reading of the tables.

The budget allocation for each program is not provided as yet here. The first action that should be conducted in 2003 by BAPPENAS and other related institutions is to prepare the budget needed for each step of the action plan, so that it can be used to mobilize the potential fund for implementing IBSAP effectively.

**Table 6.1. Action plan for capacity building in biodiversity management, 2003-2020.**

Objective 1	To develop the quality of Indonesian individuals and society who are concerned with the conservation and sustainable use of biodiversity.		
Policy Direction	Improve the ability of communities in conducting sustainable and equitable management of biodiversity based on local knowledge and wisdom, supported by an easy access to accurate data and information on the functions and potentials of biodiversity, their distribution and abundance, etc., and by equitable and profitable trade and pricing system ( <b>Point 1 in the Biodiversity Management Policy Direction</b> ).		
Program	Time Frame	Performance Indicator	Indication of Institutions/regions
1. Program for IBSAP dissemination and distribution to all communities, private sector and government (to achieve common perception and understanding about biodiversity)	2003/04	IBSAP document and contents are known and understood by various communities, private sector and government, through workshops and social campaigns	BAPPENAS, Bappeda, MoE, NGOs, KADIN, media, etc.
2. Program for developing common perception and understanding about biodiversity among members of the executive and legislative bodies, and the public, at the national and regional levels	2003/05	There are efforts to develop common understanding about biodiversity among various members of communities, through seminars, workshops, and socialization on IBSAP at national and regional levels and involving all segments of stakeholders	BAPPENAS, Bappeda, MoE, NGOs, DPR, adat community, relevant business association, KADIN, DPRD, LIPI, mass media, universities



Program	Time Frame	Performance Indicator	Indication of Institutions/regions
3. Program for improving the effectiveness of conservation area management based on partnership and local community participation	2003/08	There is an increase in community participation and partnership in the effective conservation area management	MoE, MoF, MMF, local communities, NGOs
4. Program for developing community capacity in biodiversity management	2003/20	Regular trainings are held for improving the capacity of community	As above
5. Program for developing policies and regulations for the protection of indigenous knowledge in biodiversity management	2003/08	There are regulation and law on the protection of indigenous knowledge in biodiversity management	MoE, MoF, MoA, MMF, adat community, NGOs
6. Program for developing Pilot Projects on building partnerships in management, utilization and conservation of biodiversity between the (national, provincial, and district/city) government, the community and private sector	2004/09	There are 3 pilot projects on partnership between the government and community and private sector in each bioregion	BAPPENAS, Bappeda, MoE, MoF, MoA, MoA, MIT, local govt., business sector, local communities
7. Program for developing biodiversity science and technology curriculum for elementary and secondary schools, and for vocational trainings	2004/05	There is an established curriculum on science and technology for biodiversity management for elementary and secondary schools, and vocational trainings	MoE, MoNE, Nat. and Reg. Education Council, LIPI, MRT/BPPT, NGOs, teachers association
8. Trial programs for the integration of biodiversity science and technology curriculum into the syllabus of elementary and secondary schools, and vocational trainings	2005/08	There are trial programs on the integration of biodiversity science and technology into the curriculum of elementary and secondary schools, and for vocational trainings in several pilot projects areas	As above
9. Training program for teachers of elementary and secondary schools and vocational trainings on applying the curriculum of biodiversity science and technology	2005/08	Teachers of biodiversity science and technology are available for elementary and secondary schools and vocational trainings	As above
10. Program for integrating the biodiversity science and technology curriculum into environmental education at elementary and secondary schools, and vocational trainings at national level	2008/10	The biodiversity science and technology curriculum is integrated into the national education system, at elementary and secondary schools, and vocational trainings	As above

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
11. Program on the intensification of extension and law enforcement relating to biodiversity management and conservation	2003/20	There are programs for extension and law enforcement in biodiversity management and conservation, especially in important regions	MoE, MoF, MoJ, AGO, Supreme Court, State and High Court, Police, NGOs
12. Program for identification of biodiversity issues in business activities and preparation of guidelines for best business practices based on sustainable and balanced biodiversity management	2005/10	There is a manual/practical guidelines for business activities based on sustainable biodiversity management	Relevant business associations, KADIN, MoE, MIT

**Table 6.2. Action plan for developing resources, technology and application for local indigenous knowledge for biodiversity management, 2003-2020.**

Objective 2	To strengthen resources for supporting the development of science, technology and the application of local wisdom for the conservation and sustainable use of biodiversity.
Policy Direction	To improve and expand the research and development of sustainable biodiversity science and technology, with widespread dissemination of network of biodiversity information and partnership ( <b>Point 2 in the Biodiversity Management Policy Direction</b> ).

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
1. Program for basic and strategic research on endemic and indigenous fauna and flora species of Indonesia	2004/20	There are at least five basic and strategic research at the national level, and five more in each bioregion	LIPI, national and regional universities, other national, regional, private research institutes
2. Research and development of applied science in sustainable biodiversity utilization	2003/20	There are at least five applied research results over five years that are easily applicable in sustainable biodiversity utilization	MoE, MoA, MoF, LIPI, BPPT, NGOs, private sector
3. Development of incentive policy to accelerate applied research activities on biodiversity	2004/20	There is an incentive mechanism to increase the quantity and quality of applied research	BPPT, MoA, LIPI, MoE, local universities, private sector,

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
4. Research on socio-cultural aspects related to sustainable biodiversity management	2004/20	There is an improvement in knowledge in socio-cultural aspects relating to sustainable biodiversity management	LIPI, MoE, NGOs, adat community, local universities
5. Program for mapping agro-ecosystem areas and the potential of their biodiversity	2004/08	There are maps of agro-ecosystem areas including their biodiversity potential	BPS, BAPPENAS, MoE, CRB, local govt. NGOs, local universities
6. National census on the state and potential of biodiversity	2004/07	Statistics data and maps on the state of biodiversity are available	As above
7. Program for mapping damaged coastal and marine biodiversity, including seagrass in densely populated areas	2003/08	There are data and maps of damaged areas in coastal and marine ecosystems, including seagrass	MMF, MoA, NGOs, universities
8. Mapping of the potential of and damages to small islands, starting with the Nusra dan Maluku	2004/09	There are maps and documentation on the potentials and damages of biodiversity in small islands	MMF, LIPI, universities in Nusra, Maluku, national
9. Continue the existing program for germplasm collection and maintenance by the Research Center for Biology, especially in the regions	2003/20	There are information on the germplasm collection including the specimens	CRB, local govt., NBIN, universities
10. Mapping and revising the boundaries of Biosphere Reserves	2004/06	There is up to date information on and delineation of boundaries in the six Biosphere Reserves	MoF, LIPI, universities, local communities, six biosphere reserves
11. Documentation of best practices in sustainable biodiversity utilization, followed by site-specific applications of those practices	2004/10	There are guidelines for and examples of sustainable biodiversity utilization	BAPPENAS, BPPT, NGOs, natural resource valuation experts
12. Development of funding strategy for biodiversity conservation and management within the IBASP framework, through incentive system, utilization of reforestation fund, community fund, and environmental taxes	2004/08	There are funding sources for IBASP activities	BAPPENAS, MoE, Min. of Finance, MoF, funding agencies

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
13. Program for facilitating local IBSAP preparation and supporting the implementation of existing biodiversity strategic plan (West Nusa Tenggara and Papua)	2004/05	Local IBSAPs are formulated as a guidance for the implementation of sustainable biodiversity management	BAPPENAS, MoE, Bapedalda, Bappeda, local NGOs, DPRD
14. Development of business investment concept in sustainable and equitable biodiversity management	2004/10	Improvement in the investment of sustainable and equitable biodiversity management	BKPM, BAPPENAS, universities, private sector
15. Program for mapping Karst ecosystems and their potentials, starting from Sulawesi bioregion	2004/06	There are maps of karst ecosystems and their potentials	LIPI, local universities, speleological groups, Sulawesi and national
16. Development of diversification in community-based business in sustainable management of non-timber forest products	2004/07	There are pilot projects on community-based business in non-timber forest products starting in Nusra in 2005	MoF, local govt., BPPT, local NGOs, local communities/ Nusra, Papua, national

**Table 6.3. Action plan for improving biodiversity conservation and rehabilitation, 2003-2020.**

Objective 3	To reduce and stop the rate of biodiversity degradation and extinction at the national, regional and local levels within the 2003-2020 period, along with rehabilitation and sustainable use efforts.
Policy Direction	To improve and preserve ecosystem functions and balance at local, regional, and national levels that ultimately lead to the welfare of the people as the realization of the competitive advantages of Indonesian economy in both domestic and global markets ( <b>Point 3 in the Biodiversity Management Policy Direction</b> ).

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
1. Program for national biodiversity conservation and rehabilitation	2003/10	Reduction in the rate of biodiversity loss, starting in 2010	MoE, MoF/ national
2. Program to restructure policies in granting forest management rights and prohibition of natural forest conversion, taking into consideration the needs of the local/indigenous communities	2003/08	Decrease in deforestation rate up to zero level in 2020 (national), starting in 2003 for Java, Sumatra, Kalimantan and Sulawesi	MoF (Java, Sum, Kal, Sul & national)

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
3. Reforestation and forest rehabilitation programs using various local species	2004/20	On average 1 million ha of forest is rehabilitated annually	MoF, local govt., communities, NGOs, business sector
4. Program to enhance the protection of coral reefs by controlling destructive fishing activities and banning coral reef mining	2003	Destructive fish catching and coral reef mining is stopped in 2003. The rate of coral reef destruction is reduced to zero level starting in 2003	MMF, reg. Govt., community, NGOs
5. Program to restock fish fry and conserve threatened fish species and other marine biota	2004/08	Fish stock and other marine biota in depleted areas is restored to its maximum sustainable yield level, in 2015	As above
6. Program to rehabilitate and prevent the degradation of sea grass	2004/08	Recovery of sea grass in 2015	As above
7. Program to prevent wetlands conversion and to rehabilitate of wetlands ecosystems	2003	Wetlands conversion is reduced to zero level in 2003	MoE, MIS, local govt., communities, NGOs
8. Program to prevent and control abrasion and coastal areas reclamation, and to rehabilitate coastal ecosystems	2004/07	Coastal ecosystem damage at zero level in 2007 starting from Sulawesi and Nusra in 2006	MMF, MIS, local govt, communities, NGOs Nusra, Sul, national
9. Program for implementing the Jakarta Mandate (under the CBD) on coastal and marine biodiversity conservation, as an integral part of points 4-6 and point 8 mentioned above	2004/20	There are five long-term program on the conservation of coastal and marine ecosystems in conformity with to the Jakarta Mandate	MMF, MoE, LIPI, universities, NGOs, coastal communities
10. Formulation strategic and action plan for the Sustainable Management of Biodiversity in small islands, followed by its implementation, starting with Nusra and Maluku	2005/10	There is a general action plan for biodiversity management on small islands, to be followed up in Nusra and Maluku	MMF, MoE, LIPI, NGOs, local govt., coastal communities, Nusra, Maluku, national
11. Program for improvement in the effectiveness conservation area management and conservation in small islands	2003/06	Improved effectiveness of conservation areas management and conservation on small islands from 2003	MoF, MMF, NGOs, local govt. / Nusra, national
12. Program for preventing marine ecosystems pollution due to disposal of tailing from mining activities, either directly into the sea or through local river networks	2003/05	Submarine tailing disposal technology is prohibited in 2004; Revocation mining licenses of companies that disposed of its waste directly to local river system at the end of 2003, and that currently applies STD, by 2004	MEMR, MMF, MoE, NGOs, mining companies



Program	Time Frame	Performance Indicator	Indication of Institutions/regions
13. Review of permits for mining in conservation areas and small islands to prevent biodiversity degradation and to support biodiversity conservation	2003/06	Cancellation of current permits and no release of new permits for mining activity in conservation areas and small islands, in 2003-2006	MEMR, MoF, local govt., Nusra, Sulawesi, national
14. Designing compensation system for restructuring the forest industry, and banning of natural forest conversion and mining activity, particularly in the case of existing permits	2003/05	Provision of compensation for investment already in place	MoF, MEMR, Coord. Min. for Economy, BKPM, Economist
15. Formulation and implementation of action plan for karst ecosystem conservation and rehabilitation	2004/08	There is an action plan for karst ecosystems in 2005 followed by its implementation, starting in Sulawesi in 2006, followed by other regions	LIPI, MoF, MoE, speleological groups, NGOs/ Sulawesi, national



(Doc. Beehler, B.M. et al. 2001)

**The lories live** in the rainforests and savannah. They can be found in many areas of Indonesia, particularly in Papua.

**Table 6.4. Action plan to enhance institutional capacity and policy instruments for biodiversity management, 2003-2020.**

Objective 4	To empower institutional, policy and law enforcement arrangement at the national, regional, local, as well at customary level so as to be effective and conducive for the management of biodiversity in a synergic, responsible, accountable, fair, balanced and sustainable manner.
Policy Direction	<ol style="list-style-type: none"> <li>1. To build sustainable economy based on environmentally and socially friendly technology, and the protection and respect of local traditional community (<b>Point 4 in the Biodiversity Management Policy Direction</b>).</li> <li>2. To develop sustainable and fair biodiversity management system based on local knowledge, tradition and good governance (<b>Point 5 in the Biodiversity Management Policy Direction</b>).</li> <li>3. To build and to develop effective institutional arrangement and policies at national and local levels, accompanied by effective law enforcement and in conformity with international agreements on biodiversity management (<b>Point 6 in the Biodiversity Management Policy Direction</b>).</li> <li>4. To enhance deconcentration and decentralization of government authority in biodiversity management to local government and community (<b>Point 7 in the Biodiversity Management Policy Direction</b>).</li> </ol>

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
1. Program to develop a concept and policy for environmentally friendly and sustainable for economic development	2003	There is a concept and clear policy for environmentally friendly and sustainable economic development adopted in the National Development Program of 2004-2009	DPR, BAPPENAS, Coord. Min. for Economy, BPPT, universities
2. Program to restructure forest-based industry and to control illegal logging as well as harvesting flora and fauna, including endemic species, through improvement in forestry law enforcement	2003	There is policy for restructuring forest-based industry, and improvement in law enforcement to control illegal logging and harvesting of flora and fauna	MoF, MoE, MIT, Police, Customs, MoJ
3. Development of timber harvesting methods from natural forest based on the carrying capacity of the ecosystem	2003/20	Timber harvesting based on the carrying capacity of forest ecosystem is implemented gradually from 2004	MoF, LEI, NGOs, universities
4. Development of sustainable and community-based methods for the utilization of non-timber forest products	2003/20	The sustainable and community-based methods for utilization of non-timber forest products is implemented, starting in 2005 in Papua and Sulawesi, and then at the national level	MoF, NGOs, adat community, local govt./ Sul, Papua & national

Program	Time Frame	Performance Indicator	Indication of Institutions/regions
5. Program for improving national agricultural productivity and agribusiness through the utilization of diversification of seeds, fairer policy, and through protection of farmers in terms of commodity pricing and the use of seeds	2003/20	Agriculture productivity is increased seed diversity, there is a more equitable agricultural policy for the farmers, and there are seed conservation efforts	MoA, Bulog, local govt., NGOs, farmers org.
6. Program for the development of food crops agricultural system based on local agro-ecosystem and germplasm diversity of the bioregions	2005	Implementation of agricultural policy based on the agro-ecosystems of each bioregion, effective by 2005	MoA, ICRAF, NGOs, farmers org., local universities, local govt.
7. Program for controlling and preventing the spread of invasive wild as well as cultivated species	2003	The spread of invasive species is controlled, starting in 2003	MoA, MoF, MoE, MIT, MMF
8. Development of a policy to protect genetic resources	2003/06	There is a policy for protecting genetic resources, effectively implemented by 2004	MoE, KNPN, MoA, NGOs, LIPI
9. Program to develop and disseminate local and indigenous knowledge in sustainable agriculture	2003/08	There is widespread understanding about local and indigenous knowledge on sustainable agriculture through documentation and campaign	MoA, local govt., farmers org., NGOs
10. Program for improving law enforcement to protect conservation area, including Biosphere Reserves	2005/20	Forest damage, illegal logging and harvesting of wildlife are reduced in conservation areas including Biosphere Reserves	MoE, MoF, MMF, Police, AGO, LIPI
11. Improvement of law enforcement to prevent and control the overharvesting and degradation of biodiversity outside conservation areas	2005/20	Overharvesting and damage of biodiversity are reduced outside conservation areas (in forests, wetlands, coastal and marine ecosystems)	MoE, MMF, MoF, MoA, local govt., AGO, police, local communities
12. Program for formulating a legal status for Biosphere Reserves	2004/05	Biosphere Reserves have clear legal status	MoF, State Secr. DPR, MoE, MMF, NGOs, LIPI
13. Formulation of Natural Resources Management Law that will, if possible, include the management of and access to genetic resources, as well as equitable sharing of benefits arising from their utilization	2003/04	Enactment of Natural Resources Management Law and its institutional arrangements	DPR, MoE, MoA, MRT, BAPPENAS, PSDA WG