

MAJOR GOVERNMENTAL BODIES IN THAILAND: THEIR FUNCTIONS AND POLICIES IN CONSERVATION

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The 8th National Economic and Social Development Plan (1997–2001)

It is vital that conservation and rehabilitation of natural resources are incorporated into a development plan to protect both urban and rural environments. Local people and community organizations should be urged to play a more active role in management of natural resources. Where possible, economic instruments should be used to control and guide such management. Furthermore, more efficient use should be promoted so that natural resources can be used to the greatest possible advantage for the economy as a whole while minimizing any negative environmental impacts. Thailand should also play a more active role in natural resources management at regional and international levels (National Economic and Social Research Development Board 1997). The objectives of the 8th National Economic and Social Development Plan (NESDP) are:

- To ensure that utilization of natural resources is counterbalanced by rehabilitation and protection programmes; and
- To promote more effective management with the collaboration of different sectors of society. Opportunities will be provided for local people and organizations to play a greater role in natural resources and environmental conservation, with support from the public and academic sectors, non-governmental organizations and private businesses.

Strategies for natural resources and environmental management

The 8th Plan proposes the following strategies to meet its objectives for natural resources and environmental management.

Rehabilitating natural resources and the environment:

- Manage rehabilitation of degraded and abandoned land to increase agricultural output and to minimize negative environmental impacts. Attention should be given to former mining sites, former shrimp ponds and farmlands abandoned because of unfavourable soil conditions such as excessive salinity or acidity.
- Reduce the volume and distribution of pollution in local environments by the proper management of community and industrial wastes and other hazardous substances.
- Support the establishment of comprehensive waste treatment and disposal systems.
- Promote the development of waste disposal technology and green technologies to be used in production processes to minimize environmental impacts.

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Promoting participation by local people and communities in natural resource and environmental management:

- Expand the role of the public sector in promoting people's participation.
- Develop information networks on natural resources and environmental conservation.
- Provide more opportunities for local people and communities to participate.

Improving natural resources and environmental management:

- Promote systematic management of water resources.
- Coordinate land-use policy and management development.
- Ensure sound management of community environment and green areas.
- Conserve nature reserves and heritage sites.
- Improve prevention systems for natural disasters and relieve the hardship and suffering caused by such disasters.
- Improve the efficiency of public agencies involved in natural resource management.
- Enhance Thailand's role in international cooperation on environmental protection.

Royal Forest Department (RFD)

Background to forest conservation

King Rama V founded the Royal Forest Department (RFD) in 1896. In 1900, the government passed a law conserving wild elephants, which thus became Thailand's first protected animal species. Conservation movements in the United States and Canada raised public awareness in Thailand and in 1941 the Forestry Act was passed.

In 1958, the Ministers of Agriculture and the Interior were directed to establish and legislate for national parks and other protected areas. In 1959, the Cabinet established the National Park and Wild Animals Reservation and Protection Committee and, with the help of IUCN and the US National Park Service, selected 14 sites for national parks. The Wild Animals Reservation and Protection Act and the National Park Act were passed respectively in 1960 and 1961 (Faculty of Forestry, Kasetsart University 1987).

Thailand's protected area system was established in 1962 with the designation of Khao Yai as the country's first national park. Since then, the system has expanded to include 235 protected areas covering more than 78,000km², or about 16% of the country's land area. The system comprises 96 national parks (equivalent to IUCN category II), 47 wildlife sanctuaries (IUCN Category I), 54 non-hunting areas (IUCN Category VI) and 64 forest parks (IUCN Category III). The system does not yet include the large areas of watershed protection forest (IUCN Category I) and other protected areas such as wildlife breeding centres, mangrove conservation areas, botanical gardens and arboreta. Additional parks and sanctuaries are being proposed for incorporation into the system. To date, however, no written policy statements exist for protected areas. Table 1 summarizes Thailand's progress in terms of protected areas and forest cover during the past seven national economic and social development plans.

Table 1. Progress of forest and biodiversity conservation in Thailand

Plan	Number of Protected Areas	Coverage (%) ^{a)}	Forest Cover (%) ^{b)}	Remarks	
1st NESDP 1961–66	National Parks	4	1	51	The National Park Section was established in 1961 and became a Subdivision of the National Park and Wildlife Sanctuary.
	Wildlife Sanctuaries	1			
	Forest Parks	3			
	Non-hunting Areas	–			
2nd NESDP 1967–71	National Parks	4	1	42	
	Wildlife Sanctuaries	1			
	Forest Parks	3			
	Non-hunting Areas	–			
3rd NESDP 1972–76	National Parks	13	4.9	38.7	The National Park and Wildlife Sanctuary Subdivisions became two separate divisions. The Enhancement and Conservation of National Environmental Quality Act was passed in 1975.
	Wildlife Sanctuaries	12			
	Forest Parks	6			
	Non-hunting Areas	8			
4th NESDP 1977–81	National Parks	40	8.9	30.5	
	Wildlife Sanctuaries	24			
	Forest Parks	12			
	Non-hunting Areas	21			
5th NESDP 1982–86	National Parks	52	10.5	29.4	The Cabinet approved the National Forest Policy in 1985. A target of 40% forest cover was set (15% protection forest and 25% production forest).
	Wildlife Sanctuaries	29			
	Forest Parks	27			
	Non-hunting Area	40			
6th NESDP 1987–91	National Parks	71	13.9	26.6	A nationwide logging ban was introduced in 1989. The first conference on biodiversity was held in 1989. Forest zoning was initiated in 1989. The Cabinet approved measures for managing mangrove forests and coral reefs in 1991. Huay Kha Khaeng-Thung Yai Naresuan was declared a Natural World Heritage Site by UNESCO.
	Wildlife Sanctuaries	34			
	Forest Parks	32			
	Non-hunting Areas	48			
7th NESDP 1992–96	National Parks	82	15.2	25.6	The National Park Division was divided into two divisions: Terrestrial National Parks and Marine National Parks. The 40% forest cover target was revised to 25% for protection forests and 15% for production forests. Revision of the Enhancement and Conservation of National Environmental Quality Act (1992). Revision of the Wildlife Preservation and Protection Act (1992).
	Wildlife Sanctuaries	42			
	Forest Parks	49			
	Non-hunting Areas	49			
8th NESDP 1997–2001 ^{c)}	National Parks	105	16.9	25.3	
	Wildlife Sanctuaries	47			
	Forest Parks	64			
	Non-hunting Areas	54			

a) Percentage of land area.

b) Percentage of land area at end of Plan.

c) As of February 2001.

The Royal Forest Department has five technical bureaus and seven administrative divisions and regional offices. Forest resources are administered locally by 75 provincial offices and 524 district forestry offices. Bureaus with direct responsibility for forest conservation are the Natural Resources Conservation Bureau (*in situ* conservation), Technical Forestry Bureau (*ex situ* conservation) and Plantation Promotion Bureau (*ex situ* conservation), as well as regional and local administrative offices. An unofficial Bureau of Biodiversity Issues also plays an important role (Sutthisrisin & Noochdumrong 1998).

Policies

On 3 December 1985, the Cabinet approved a National Forest Policy drafted by the National Forest Policy Committee under the 5th NESDB. This contains 20 key statements of policy. Some of the important statements relevant to forest management and conservation are:

- Thailand intends to have at least 40% of its land area covered by forests. Of this percentage, 25% shall be designated as 'economic' forest and 15% as 'conservation' forest (subsequently changed to 15% economic forest and 25% conservation forest). Economic forests are used primarily to produce timber and other non-wood forest products. Conservation forests are used to protect habitats and biological diversity.
- All stakeholders, including local people and ethnic minorities, are responsible collectively for protecting, managing and using forest land.
- Land use zoning suitable for the country as a whole must be undertaken carefully to conserve forest resources.
- Provide education on conservation and increase environmental awareness.
- To achieve these policy goals and objectives, forestry programmes and projects must be devised accordingly and evaluated and revised periodically. These programmes and projects shall be integrated into the country's National Economic and Social Development Plan.

These policy statements provide a framework for conservation actions. For example, RFD has drawn up a national forest land-use plan covering the economic forest zone and the conservation forest zone. RFD has also expanded its conservation forest and protected area system to meet national policy objectives (Rajani 1999). In addition, public participation in conserving forest resources has been addressed by a number of newly enacted laws, including the new constitution. Several forestry programmes related to forest resources conservation have been devised and integrated into the NESDB since 1987.

In response to the National Forest Policy's requirement for long-term management and development plans to maximize the social, economic and environmental benefits of forests, the Thai Forestry Sector Master Plan (TFSMP) was drafted in 1993 with support from the Finnish International Development Agency (FINNIDA). The TFSMP guides long-term development of the forestry sector along socio-economic, technological and institutional lines. Conservation of forest resources and biodiversity guidelines proposed by the TFSMP are outlined in the People and Forestry Environment programme. This is concerned with the conservation of representative ecosystems and diverse biological resources in protected areas, as well as conservation of biological resources outside protected areas (Royal Forest Department 1993).

Office of Environmental Policy and Planning (OEPP)

OEPP is the leading government agency for coordination, administration and management of natural resources. It facilitates economic activities that pursue conservation, social equity and an improved quality of life, and encourages the use of integrated systems for environmental administration and management. OEPP also promotes administrative and managerial decentralization from central government to local authorities. It builds public awareness and encourages the public to participate in environmental quality prevention, remedy and rehabilitation. OEPP also coordinates international and regional cooperation in environmental management.

OEPP is divided into three sectors: Environmental Policy and Planning, Environmental Quality Management and Regional Environmental Management. The Environmental Policy and Planning Sector formulates national environmental policies. Policies related to conserving forest resources are the Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997–2016), a policy on natural resources, a policy on natural and cultural environments, and a policy on environmental education and promotion (OEPP 1997).

The Environmental Quality Management Sector monitors, controls, supervises and promotes incentives for prevention and remedy of environmental problems. It emphasizes environmental impact assessment in development projects and coordination in natural resources management. Its tasks also include coordinating international cooperation and global environmental obligations, as well as administering and managing Thailand's Environmental Fund.

The Environmental Quality Management Sector manages biological resources through the Divisions of Natural Resources and Environmental Management and Coordination. Within the framework of the Convention on Biological Diversity (CBD), OEPP has compiled a state of biological diversity report for Thailand. It has also formulated the National Policy, Measures and Plans on the Conservation and Sustainable Utilization of Biological Diversity (1998–2002), which were approved by the Cabinet in 1997. These have become the principal framework for biodiversity conservation and management in Thailand.

Policies

i) Policy and National Action Plan for Sustainable Development of Thailand (Agenda 21):

Under the supervision of the Steering Committee on Implementation of National Action Plan for Sustainable Development (Agenda 21), OEPP has implemented several projects on forest resources and biodiversity conservation (Faculty of Economics, Kasetsart University 1997). Some important implications of the action plan for forest conservation in Thailand are:

- The plan states that Thailand's forest cover shall be increased to 50% of the national territory. Of this, at least 30% is to be designated as conservation forest, and 20% as economic forest, to ensure that the needs of economic and social development are met, and that the environmental balance is maintained. The plan also states that remaining forest lands must be protected from further encroachment. Conflicts in utilizing forests and other resources on forest lands are to be reduced.
- The plan calls for efforts to protect, preserve and conserve the flora and fauna of forest lands.

ii) Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997–2016):

This policy focuses on natural resources and pollution. Six policy objectives for natural resources are listed below (DEQP 1994):

- Increase the efficiency of use of natural resources, coordinate any utilization of natural resources and reduce conflicts and accelerate rehabilitation of degraded natural resources.
- Enhance administration and management of natural resources by systematic decentralization of power and authority from central offices to regional offices, and strengthen relationships among government agencies, the private sector, non-governmental organizations and local people.
- Support the application of resource economics for effective management of natural resources and establishment of social justice.
- Amend the legal and regulatory framework to support more effective administration and management of natural resources and recognition of rights and responsibilities of local people to demonstrate ownership of resources.
- Support the research and development of a standardized database network for natural resources.
- Raise the conservation awareness of senior government officers, politicians at all levels, the private sector and the general public.

iii) National Policy, Measures and Plans on the Conservation and Sustainable Utilization of Biological Diversity (1998–2002):

Thailand has not yet ratified the Convention on Biological Diversity (CBD), although the Cabinet approved ratification in 1997. However, many activities advocated in the Convention are currently being implemented. One of these is the formulation of National Policy, Measures, and Plans on the Conservation and Sustainable Utilization of Biological Diversity, which was approved by the Cabinet on 15 July 1997 (OEPP 1997).

This policy proposes several new initiatives to support biodiversity protection in Thailand. One of the main foci of the policy is clarifying the responsibilities of implementing institutions. Actions to conserve and use biological diversity have been prioritized into seven strategies and their accompanying objectives:

Strategy 1: Building the capacity of institutions and their staff to conserve biodiversity.

- 1.1 Increase awareness of the importance of biodiversity to culture and society.
- 1.2 Support institutions in disseminating information on biodiversity conservation.
- 1.3 Promote basic and applied research, emphasizing biodiversity studies.
- 1.4 Build human capacity in biodiversity conservation.

Strategy 2: Improve management of protected areas to ensure protection of biodiversity at the local level.

- 2.1 Ensure that protected areas are capable of conserving rare and endangered species and ecosystems.
- 2.2 Support sustainable use of protected areas.
- 2.3 Increase capacity in protected areas management.

- Strategy 3: Improve incentives for conserving species, populations and ecosystems.
- 3.1 Support biodiversity conservation at the local level.
 - 3.2 Promote and extend sustainable use of biodiversity.
 - 3.3 Ensure that communities and individuals who have knowledge of biological resources conservation receive proper benefits from the use of such knowledge.
- Strategy 4: Conservation of species, populations and ecosystems.
- 4.1 Improve the conservation of species, populations and genetic diversity in their natural habitats.
 - 4.2 Improve *ex situ* conservation, promote public education and support sustainable development.
- Strategy 5: Control and monitor processes and activities that threaten the existence and richness of biodiversity.
- 5.1 Develop environmental impact monitoring and assessment systems to enable effective protection of biodiversity.
 - 5.2 Improve capacity to monitor changes in biodiversity and undertake immediate action in response to emergencies.
 - 5.3 Prevent the spread of invasive alien species or genetically modified organisms (GMOs) that may alter biodiversity.
- Strategy 6: Encourage management of biodiversity and traditional culture.
- 6.1 Support private sector initiatives in biodiversity conservation.
 - 6.2 Promote biodiversity conservation in urban and rural communities.
 - 6.3 Conserve biodiversity by maintaining Thai traditional cultural practices.
 - 6.4 Conserve biodiversity in cultural forests.
 - 6.5 Integrate biodiversity conservation with other activities that use biological resources.
- Strategy 7: Promote cooperation between international and national agencies and institutions in the conservation and sustainable use of biodiversity.
- 7.1 Increase cooperation between government, private organizations and local communities.
 - 7.2 Promote cooperation in biotechnology research and development between public and private agencies.
 - 7.3 Ensure appropriate benefits for Thailand from the use of its biological resources.
 - 7.4 Ensure that Thailand obtains appropriate technologies for the conservation and sustainable use of biodiversity, and is able to transfer existing technologies to other countries.
 - 7.5 Promote appropriate access to and transfer of information on biodiversity.

Department of Environmental Quality Promotion (DEQP)

Background

In 1992, the Office of the National Environmental Board was replaced by three new environmental departments: the Office of Environmental Policy and Planning, the Pollution Control Department (PCD), and the Department of Environmental Quality Promotion (DEQP). The responsibilities of DEQP include:

- Provide public education and liaise with the media on environmental protection.
- Establish a database of environmental information and technology.
- Provide basic environmental information to other government agencies, the private sector and the general public.
- Research and develop appropriate technologies in environmental quality promotion.
- Promote transfer of environmental technologies to different target groups.

DEQP is involved in forest resources conservation through its public education and awareness building work.

National Science and Technology Development Agency (NSTDA)

This agency is a funding and research organization established in 1991 under the Science and Technology Development Act. It is an autonomous organization, operating under policy guidance from a board chaired by the Minister of Science, Technology and Environment. The organization lies outside the normal framework of the civil service and state enterprises, enabling it to take a broader and more systematic approach to supporting national economic and social development.

NSTDA's objectives are to improve production and services, as well as support development of new products and technologies with social or commercial benefits. Three specialized centres operate under the NSTDA umbrella: Genetic Engineering and Biotechnology, Metal and Materials Technology, and Electronics and Computer Technology. In addition, the Technology Information Access Centre provides on-line information services from important databases worldwide. NSTDA maintains close links with public and private research institutions, and organizes training courses and technical seminars (see <http://www.nstda.or.th>).

National Centre for Genetic Engineering and Biotechnology (BIOTEC)

BIOTEC was first established under the Ministry for Science, Technology and Energy in 1983. Subsequently it became one of the specialized centres of NSTDA (see above). Its position under NSTDA, outside the normal framework of civil service and state enterprises, allows it to operate more effectively to support and transfer technology for the development of industry, agriculture, natural resources and the environment.

BIOTEC's main objective is to promote research, development and application of biotechnology as part of general technological development in the public and private sectors. This is achieved by supporting research and development projects, human resources development, management and technical services, technology investment and information services. The Centre's activities cover a range of technologies from basic to advanced levels (see <http://www.biodiversity.biotec.or.th>).

The Biodiversity Research and Training Programme is a special programme of BIOTEC which supports research and management of biological resources (see <http://www.brt.biotec.or.th>). The programme addresses the need for research and training to assess Thailand's remaining resources, and to investigate the present and potential socio-economic benefits of biodiversity. Projects supported by the programme include studies of plant diversity in Phu Phan National Park in northeast Thailand, Ton Nga Chang in southern Thailand and Khun Korn Waterfall Forest Park in north Thailand; an evaluation of the status

of teak (*Tectona grandis*) genetic resources using molecular markers; and a cytogenetic study of the Euphorbiaceae (spurges) in Thailand.

A new special programme of BIOTEC is the Thailand Biodiversity Centre, which was established by prime ministerial decree in 2000. The Centre's functions are to maintain databases and disseminate information on biodiversity conservation to researchers and the public in general. The Centre also promotes public awareness and participation in biodiversity conservation through workshops and publications. The Centre collaborates with other biodiversity-related organizations both nationally and internationally.

Measures needed to enhance conservation of forest genetic resources

Institutional development

After a proposed transfer of conservation responsibilities to the Ministry of Science, Technology and Environment was cancelled, the government put forward a plan to consolidate the various conservation departments under the Ministry of Agriculture and Cooperatives into one department. This new department would incorporate national parks, wildlife conservation, watershed protection and fisheries, and would come under the supervision of MOAC. Working groups have been formed to develop the structure of this new department.

A national workshop on conservation of forest genetic resources, held at Kasetsart University in May 2000 (see paper by Sumantakul in these proceedings), suggested that the Biodiversity Research Centre at RFD should be upgraded to divisional status to enhance management, research and training efforts. Another suggestion was that RFD should establish a Division of Forest Genetic Resources Conservation.

Legal measures

The national workshop mentioned above also made a number of recommendations on legal aspects:

- Develop provisional guidelines to reduce prohibitions on collecting seeds and other reproductive material for genetic improvement and conservation in national parks and wildlife sanctuaries.
- Review the existing protected area system and develop a system which is based on the IUCN and other international norms and standards, and which reflects the realities of resource use in the country.
- Review and update the National Park Act (1960).

Human resource development

Staff in various conservation-related institutions should be well-informed and trained in the management and use of forest genetic resources. This should be done by creating an appropriate balance between formal university training and practical work experience. Priority subjects should be identified for training in the field and in universities. Participants at the national forest genetic resources workshop recognized the need to raise awareness at all levels of the importance of forestry in general and forest genetic resources in particular.

Research needs

Workshop participants identified the following research needs in forest genetic resources conservation and management:

- Taxonomy;
- Surveys of priority species;
- Ecosystem research on forest types and composition;
- Management issues such as human impacts on genetic processes (forest fragmentation, exploitation of forest and genetic resources, carrying capacity of forest and specific species, and so on);
- Regeneration;
- Rehabilitation;
- Partnerships in conservation (appropriate models and factors influencing participation); and
- Programmes to monitor local community participation (and incentives for community involvement in such programmes).

Given the limited number of research organizations involved in forest genetic resources in Thailand, participants emphasized the importance of sharing experiences, skills and information through national and international networks and other linkages. The balance between different types of research, for example long-term and short-term research, should be taken into account when fulfilling research needs.

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