

Asian Rhinos

UNITED NATIONS DEVELOPMENT PROGRAMME
Project of the Governments of
Indonesia and Malaysia

No. & Title	RAS/93/G31 Conservation Strategy for Rhinoceros in South East Asia (Malaysia and Indonesia)	<u>UNDP & cost sharing financing</u>	
Duration	Three Years		
Project Site	Indonesia: Sumatra Malaysia: Peninsula, Sabah and Sarawak	UNDP IPF Other Govt. or third party cost sharing	\$ 2,000,000
ACC/UNDP Sector and Subsector	Environment - Biodiversity Conservation		
Govt sector and subsectors	Nature Conservation: Wildlife Protection and Management/Envrnmnt Education	Total	\$ 2,000,000
Govt. Implementing Agencies	Indonesia: PHPA, Minstr. of Forestry Malaysia: Peninsula: Dept. Wildlife & Natl Parks, Minstr. Sci., Techn., Envt. Sabah: Wildlife Dept., Sabah Minstr. Tourism & Envt. Development Sarawak: Dept. of Forestry, Sarawak Minstr. Resource Planning		
Executing Agency	UNDP-OPS		
Associated Agency	IUCN/SSC Asian Rhino Specialist Group	<u>Govt Inputs</u> Indonesia: \$ 560,700 Malaysia: \$ 1,057,000	
Est. Starting Date	1 September 1994		

Brief Description: This project is intended to be capacity building and to provide direct support to enhance the capabilities of the wildlife conservation and management agencies in Indonesia (PHPA) and Malaysia (DWNP-Peninsula; DW-Sabah; DF-Sarawak) to implement the conservation strategy for rhinoceros in each nation. Rhinoceros serve as flagship and umbrella species for preservation of biodiversity.

On behalf of:	Signature	Date	Name/Title
The Government of Indonesia	_____	_____	_____
The Government of Malaysia	_____	_____	_____
UNDP	_____	_____	_____

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A. CONTEXT

1. Description of the subsector

The two species of rhinoceros in South East Asia (*Dicerorhinus sumatrensis* and *Rhinoceros unicornis*) are critically threatened species of national, regional and global significance. These species are of great cultural importance in Asia and are of major interest worldwide.

As recognized by the recent UNEP/CITES initiatives and the intensifying IUCN and WWF programs, there is a global crisis for conservation of rhino. All five species are threatened with extinction. Only about 10,000 rhino of all five kinds survive in the wild on the planet. The situation is even more severe when it is observed that half of these 12,000 rhino are of the southern white rhino (*Ceratotherium simum*), which is currently the most secure but still very vulnerable species. Recently, the decline has been most spectacular for the African black rhino (*Diceros bicornis*), whose population (now 2,500) has decreased 95% in the last 20 years and perhaps 30% in the last 3 years. It is, however, fortunate that relatively secure and reproductively prosperous nuclei of both black and white rhino exist in a few natural sanctuaries in the wild and in captivity outside Africa.

By comparison, the two species of South East Asian rhino (*Dicerorhinus sumatrensis*, the Sumatran, and *Rhinoceros sondaicus*, the Javan) are the rarest of rhinos and among the most threatened of mammals in the world. Fewer than 500 Sumatran rhino survive, distributed over at least 35 localities in Indonesia and Malaysia. The total population of Sumatran rhino in Indonesia is estimated at 200-300. The total population in Malaysia is estimated at 150-200. Remnants pockets of Sumatran rhino may survive in Thailand and Myanmar but are very few in number and their viability is doubtful. Fewer than 100 Javan rhino exist, mostly in a single protected area in Indonesia with a remnant recently rediscovered in Vietnam.

These two species have not declined quite as drastically in the last years as the African black rhino. However, the decline in Sumatran rhino has been probably between 30% (Peninsular Malaysia) and 50% (Indonesia) during the last decade. During the same period, the population of Javan rhinoceros seems to have stagnated, perhaps even decreased, although the protected area they inhabit is believed to have a higher carrying capacity than the current population size.

The situation for these two species is more precarious than for either of the two African species or for the Indian/Nepalese rhino (*Rhinoceros unicornis*) due to at least 3 reasons:

(1) Numbers are already very low and there has been an appreciable increase in poaching with major episodes occurring in both Indonesia and Malaysia over the last two years; (2) Significant intensification of habitat loss, which unlike the situation in Africa, is at least as serious a threat as poaching to the South East Asian rhino species. Human encroachment is severe in the 3 major Sumatran rhino protected areas in Indonesia and has eliminated at least two habitats outside protected areas. Recent reports indicate a very disturbing reduction of one of the main protected areas in Malaysia; (3) Lack of secure or propagating nuclei in natural sanctuaries or captive facilities. The captive population of Sumatran rhino is not yet reproducing reliably; there are no Javan rhino in captivity and current plans do not include an *ex situ* program for this species in the near future.

These pressures have been in progress for many years but have now developed to the point of being an "emergency" in South East Asia, of equal urgency to, albeit with less publicity than, the crisis in Africa.

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Perhaps of even greater importance, the tropical forest ecosystems the rhino inhabit are reservoirs of high biodiversity. Indonesia and Malaysia are located at the junction of two biological regions with widely divergent floras and faunas, has possibly the world's richest bank of biodiversity, with on average some 20 percent of all the plants and animals occurring there, and many occurring only there. Indeed, the Malayan Subregion comprising Peninsular Malaysia, Sumatran, Java, and Borneo has one of the highest concentrations of biodiversity of any area in the world.

The rhinoceros in Indonesia and Malaysia inhabit 10 major protected areas: the Sumatran rhino on the Malay Peninsula and the islands of Sumatra and Borneo; the Javan rhino on the island of Java.

Indonesia:

Kerinci Seblat National Park: an area of 10,000 km² in west-central Sumatra, Indonesia; mostly tropical forest consisting of lowland dipterocarp (48%), submontane (41%) with lesser amounts of montane and cloud forest; contains an estimated 100-200 Sumatran rhino, the largest known population, and has an ultimate carrying capacity of at least 500 Sumatran rhino; also has large populations of Sumatran tiger; vertebrate species include 167 birds and a number of threatened mammals that do not occur in Gunung Leuser including Sumatran rabbit, Asian tapir; there is significant human use and habitation with 7% of Park under agriculture and at least 1,100 people resident within the Park and a much larger number (300,000) in the central enclave; a large GEF Biodiversity investment has been proposed for this area but will not provide funds for specifics required for rhino and other species conservation.

Barisan Selatan National Park: an area of 3,600 km² in southern Sumatra, Indonesia; mostly tropical forest consisting mostly of lowland dipterocarp (70%) with some sub-montane (9%); contains an estimated 25-60 Sumatran rhino but has the capacity, if properly protected and managed, for at least 100 rhino; other threatened mammals include tiger, clouded leopard, Asian wild dog, sun bear, serow, elephant, and tapir; human habitation is appreciable with 17% of the area under agriculture and 10,000 people resident within the Park; Government has been successful in containing further encroachment and in fact many people are being resettled out of the Park; a major tourist resort is being developed very ear to one of the known rhino areas.

Gunung Leuser National Park: an area of 8,000 km² in northern Sumatra, Indonesia; mostly tropical forest consisting of lowland dipterocarp (42%), submontane (45%) and montane (18%); contains an estimated 90-120 Sumatran rhino and has an ultimate carrying capacity of at least 400 rhino; vertebrate species include 105 mammals and 313 birds; represents the main protected area for orang utan in Sumatra; has appreciable populations of other threatened species including tiger, elephant, and serow; threats to species and habitat include poaching and increasing human habitation with 6,000 people resident within park boundaries; additions to the Park and adjustments to its boundaries have been recommended; a Biosphere Reserve; site of much of the previous research on Sumatran rhino; some rhino protection units are already operating with support from the European Community.

Ujung Kulon National Park: an area of 300 km² in western Java, Indonesia; mostly tropical forest of which about 50% dense primary lowland with more open secondary forest dominated by palms and stands of bamboo; contains the last appreciable population (40-60) of Javan rhino; other significant components of the fauna include the Javan gibbon, 270 species of birds, and a number of threatened reptiles including false gharial and estuarine crocodile; World Heritage Site and Indonesia's premier national park.

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Peninsular Malaysia:

→ 50-100 rhinos in wild

Taman Negara National Park: an area of 4,400 km² in the center of Peninsular Malaysia; almost entirely tropical forest consisting of four main types - lowland dipterocarp, hill dipterocarp, montane oak, and montane ericaceous; contains an estimated 50 Sumatran rhino; other threatened vertebrates include great argus pheasant, crested fireback pheasant, Malaysian peacock pheasant, tiger, elephant, tapir, serow; considered by many to be the best national park in South East Asia; the area has been subjected twice in the last two decades to proposals for a major dam that would have removed about 10% of the Park.

→ 20-40 white rhinos

Endau Rompin: an area of 1,600 km² in the western side of Peninsular Malaysia; contains two principal forest types - lowland mixed dipterocarp and hill formations which can be further distinguished as palm or heath forest; contains an estimated 10-25 Sumatran rhino with an ultimate carrying capacity of 100 rhino; inhabited by other threatened species including tiger, elephant, tapir, primates, etc.; the area has been proposed as a national park but its jurisdiction is currently divided between two States, one of which (Johore) has recently gazetted but the other of which (Pahang) has not; despite partial gazettement, habitat degradation continues; this excellent area for Sumatran rhino is under intense pressure for exploitation and development; GEF funding could catalyze further gazettement and improved conservation of the area.

Ulu Selama: a currently ungazetted area of tropical forest of considerable extent (> 1000 km²) in the northwestern part of peninsular Malaysia; the area contains a nucleus of 10-15 rhino and has a carrying capacity if properly gazetted of at least 100 rhino; GEF funding would provide an important incentive for official protection to be accorded to this area.

Sabah:

Tabin Wildlife Reserve: an area of 1,200 km² in eastern Sabah; vegetation is mainly evergreen dipterocarp forest; contains an estimated 20+ rhino with a carrying capacity of at least 100 rhino; other threatened species include Bornean orang utan, sun bear, elephant, and banteng; currently contains resident staff; World Bank has provided funds for new headquarters complex and UNDP is supporting a project to improve management; the GEF project will enhance the operational capabilities and in particular permit isolated rhino to be moved into this intensively protected zone.

Danum Valley Conservation Area: an area of 438+ km² in southeast Sabah; largely lowland dipterocarp forest with some montane at higher elevations; contains a nucleus of 10+ rhino and has an ultimate carrying capacity of at least 100 rhino; inhabited by 134 bird and 41 mammal species including threatened species like Bornean orang utan, proboscis monkey, clouded leopard, elephant and banteng; currently part of a forest concession to, but managed as an ecological reserve by, the Sabah Foundation, a joint venture of the government and the private sector; GEF funding will help solidify continued protected status of this area.

Sarawak:

Ulu Limbang: an area of 600-1000 km² in Sarawak that is currently ungazetted but is proposed for protection; contains a nucleus of 6-15 rhino with an ultimate carrying capacity of 100 rhino if the full extent of the forest can be incorporated into a protected area; this area is adjacent to the vast Kayan Mentarang area of Kalimantan (16,000 km²) which may also still contain a few rhino and which has the potential to sustain a very large population if properly managed and protected.

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Collectively, these protected areas represent approximately 32,000 km² of tropical forest. These areas are extremely rich in biodiversity that has much insurance, information, use, existence, and bequest value. The known or estimated numbers of species include: 1500+ plants; 200+ reptiles; 500+ birds; 200+ mammals. Over 100 species of the animals are considered threatened by the IUCN Red Data List. These major rhino protected areas are also vital watersheds for their regions and hence have immediate-use value for local human populations.

These habitats and species are now threatened by developments in logging, mining, shifting agriculture and other changing land uses as the economies of Indonesia and Malaysia expand to meet the needs of its increasing population. Lowland habitats and wetlands are particularly threatened since these are the areas most accessible for agricultural developments.

Much loss of biodiversity in Indonesia and Malaysia, as elsewhere, is due to economic policy distortions that encourage rapid exploitation of biological resources rather than sustainable use. Slowing the rate of biodiversity loss will require policy and institutional reform as well as institutional strengthening for effective action in all four areas.

The active participation and support of local communities will also be essential for in-situ conservation for they are the *de facto* managers of forest, wetland and marine resources. The plan calls for greater collaboration between government agencies and local communities and NGOs to work together as partners in biodiversity conservation.

2. Host country strategies:

Both Indonesia and Malaysia have developed national strategies and action plans for conservation of biodiversity and by extension for rhinoceros:

Biodiversity Conservation:

Indonesia and Malaysia are signatories to the Convention on Biodiversity developed during the past UNCED conference in Rio de Janeiro in Brazil. The treaty requires signatories to make an inventory of their plant and animal resources and to develop national conservation plans for those that are endangered. Indonesia and Malaysia are also signatories of the Convention on Trade in Endangered Species of Fauna and Flora (CITES).

Indonesia:

Recognizing the need to conserve its rich biological resources, the government of Indonesia has made a commitment to protect 10 percent of the land area and eventually 20 million hectares of coastal and marine habitats as conservation areas. Worldwide this is one of the highest ratios.

Although *in-situ* conservation must be the first priority, the protected area network alone will not be sufficient to secure all of Indonesia's biodiversity for future generations.

The current National Conservation Plan for Indonesia was drafted in 1981,1982 by the UNDP/FAO National Park Development Project. The strategy will be updated under the World Bank National Park Investment (Package B) project, currently in its first year of operation.

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Conservation and preservation of nature has been established in Government policy for many years in Indonesia. With the growing world-wide concern for conservation of nature, formulated into The World Conservation Strategy, Indonesia adopted it into its recent Conservation Strategy, in which conservation is based on the protection of life support system, preservation of genetic resources and sustainable-use of living natural resources. Act No. 4/1982 on the Management of the Living Environment and Act No. 5/1990 on Conservation of Living Natural Resources and their Ecosystems provide a strong commitment to the conservation of nature.

As instrumental inputs to the development of conservation management of the country, the Act and Conservation Strategy direct the development of the Indonesian Rhino Conservation Strategy. The Rhino Conservation Strategy was formulated at the Indonesian Rhino Conservation Workshop of PHPA-IUCN-WWF held in 1991 and was subsequently endorsed by the Government of Indonesia as a document to guide conservation of Indonesian rhinos.

The Biodiversity Action Plan for Indonesia sets out a strategy for action under four main headings : *in situ* conservation in terrestrial parks and protected areas; *in situ* conservation outside the protected area network (production forests, wetlands, agricultural lands); *in situ* conservation of coastal and marine resources; and *ex situ* conservation. The final draft was completed in 1991 and now the recommendations are now transposed into strategies and action plans, under the guidance of the State Ministry for the Environment (KLH) and the National Development Planning Agency (BAPPENAS).

Among the various terrestrial habitat types present in the country about 50 per cent was originally tropical lowland rainforest, biologically one of the richest habitats on earth, but also the source of most tropical hardwood timber. Currently less than 5 percent of the original lowland forests in Indonesia have been preserved in reserves and National Parks, often in more or less degraded form.

The goal of the National Biodiversity Action Plan is to conserve as much as possible of the biodiversity on which the livelihood and prosperity of Indonesia depends. The plan's major objectives are:

- (1) To slow the loss of primary forests, wetlands, coral reefs and other terrestrial and marine habitats of primary importance for biodiversity;
- (2) To expand the data and information available on the nation's biodiversity and make it available to policy makers and the public;
- (3) To foster the utilization of biological resources in ways that are sustainable and less harmful than current practices.

The plan stresses that the first priority for maintaining biodiversity must be in situ conservation, both within the protected areas network and elsewhere.

The objectives for *in situ* conservation in terrestrial parks and protected areas are:

- (1) To establish an integrated protected area system covering all major terrestrial habitats and approximately 10 percent of Indonesia's land area;
- (2) To strengthen PHPA, the main agency responsible for conservation areas;
- (3) To gain local support for national parks and protected areas through buffer zone projects and involvement of local communities and NGOs in management decisions;
- (4) To develop innovative and sustainable means of funding for park management and buffer zone activities;
- (5) To evaluate options for the management of protection forest to enhance the conservation of biodiversity.

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These strategies and action plans are now being translated into more specific programmes to enable implementation. Conservation of rhino as a major component of the tropical lowland ecosystem is important to achieve the goals and objectives of the Biodiversity Action Plan. The rhinoceros species are recognized as important flagship and umbrella species to serve the greater goal of conservation of biodiversity.

Malaysia:

Similar strategies and action plans for conservation of biodiversity have been or are being developed in Malaysia. Of specific relevance to this Project, the Sumatran rhino is protected by law throughout Malaysia. Under the federal system in Malaysia, management and conservation of wildlife is distributed over three authorities corresponding to the three geographically disjunct parts of the country.

Peninsular Malaysia:

The Wildlife Protection Act of 1972 provides wildlife protection for the 11 states in Peninsular Malaysia. Primary responsibility for management and conservation of wildlife resides with the Department of Wildlife and National Parks (DWNP or Perhilitan) in the Ministry of Science, technology, and Environment. However, as a federal system, much of the responsibility is actually implemented at the state level, both by the State Directorates of perhilitan and by various State wildlife authorities. Perhilitan has developed a Wildlife Plan for Peninsular Malaysia to implement provisions of the Wildlife Protection Act. The objectives of the Plan and Perhilitan are:

- (1) to conserve in perpetuity the country's wildlife
- (2) to conserve and manage wildlife species with the goal of fulfilling the various needs and interests of the people
- (3) to create and manage national parks, wildlife reserves, and wildlife sanctuaries for the preservation and conservation of flora and fauna and their natural habitats.

Perhilitan has adopted a strategy with 5 components to achieve its objectives:

- (1) enforcing the Wildlife Protection Act of 1972;
- (2) implementing wildlife management programmes through *in situ* and *ex situ* conservation.
- (3) conducting wildlife research programmes;
- (4) conducting training and conservation education programmes;
- (5) managing and developing national parks, wildlife reserves, and wildlife sanctuaries.

Conservation of the rhinoceros and its habitat is of the highest priority in Peninsular Malaysia.

Sabah:

The Fauna Conservation Ordinance provides the main legislation for wildlife conservation and management. Responsibility for management and conservation of wildlife resides with The Department of Wildlife in the Sabah (State) Ministry of Tourism and Environmental Development. A major revision of the Fauna Conservation Ordinance is in progress with the expert assistance of a U.N. consultant. Much new delineation of wildlife policy has already been reflected in the biodiversity section of the comprehensive Sabah Conservation Strategy prepared with UNDP/WWF assistance in 1990-1992.

Sarawak:

The Wildlife Protection Ordinance provides the legislation for management and conservation of wildlife in Sarawak. Responsibility for management and conservation of wildlife resides with the Department of Forestry (DF) in the Sarawak (State) Ministry of Resource Planning.

Rhinoceros Conservation

Both global and national conservation strategies and action plans strategy have been developed for conservation of viable populations of the two species rhinoceros in South East Asia. These strategies and action plans aspire to employ rhinoceros as umbrella and flagship species for the ecosystems they inhabit.

These strategies has been formulated over the last eight years as information and analysis of the populations and habitats for these rhino species has improved. This strategy has evolved over the last decade as a collaborative effort of the conservation authorities in range states and the Asian Rhino Specialist Group of the Species Survival Commission (SSC) of the IUCN. The range state conservation authorities are: Indonesia (PHPA); Malaysia (DNPWM in Peninsular Malaysia, the Wildlife Department in Sabah, and the Forest Department in Sarawak).

The conservation strategy is documented in:

- *Asian Rhinos: An Action Plan for their Conservation*
A "global" conservation strategy and action plan for Asian Rhinos formulated by the IUCN Asian Rhino Specialist Group through a consultative process that has involved governmental representatives of the range states (especially in this case Indonesia and Malaysia) as well as international experts and consultants. The Asian Rhino Action Plan has been reviewed and updated at the AsRSG meeting in Jaldapara Sanctuary, West Bengal, India, 6-10 December 1993. The Action Plan recommends both general strategies and specific measures to protect and preserve the three species of Asian rhino: the great one-horned or Indian rhino, *Rhinoceros unicornis*; the lesser one-horned or Javan rhino, *Rhinoceros sondaicus*; and the Asian two-horned or Sumatran rhino, *Dicerorhinus sumatrensis*.
- *A Global Heritage Species Programme Prototype Action Plan for Sumatran Rhino* - A detailed programme of activities and costs to implement the "global" Action Plan and to utilize the rhino as umbrella and flagship species prepared under IUCN SSC auspices.
- *Report of the IUCN/SSC Asian Rhino Specialist Group to the UNEP Conference Among Rhinoceros Range States, Consumer States, and Donors*
An overview analysis of rhino conservation actions, their costs, and their relative priority. Current estimates of the total costs for rhino conservation in Indonesia and Malaysia requiring external funding is approximately US \$ 11 million for the next 3 years.

The strategy is based on viable population theory and has formulated explicit, in most cases quantitative, objectives to achieve the goal of conserving the rhino and their ecosystems. Small and isolated populations are very vulnerable to accidental loss or poaching, to localized catastrophes like floods, fires, cyclones, and they can also suffer declining vigour or vitality through steady loss of genetic diversity. To maintain adaptability, resilience and genetic vitality, a minimum population of 100 to 500 animals, depending on the reproductive pattern of the species, is necessary for survival of the population for 10 or more generations, or, in the case of the Rhino, for the next century. In all the main areas of the species natural range in Indonesia, i.e. Java and Sumatra for the Javan Rhino and Sumatra and Borneo for the Sumatran Rhino, populations of at least several hundreds of animals must be maintained. Currently all existing populations, with the possible exception of the Sumatran Rhino in Kerinci Seblat, are far below this minimum level. It should be stressed that the figures given above are minimum requirements, only providing for the preservation of the steady state. For survival and development of the species over an evolutionary significant timescale, and for further evolution of rhino lineages, entirely different conditions will be necessary in the more distant future.

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The Rhino Conservation Strategy has evolved through a very consultative and collaborative process among and within the range states, principally Indonesia and Malaysia, under the auspices of the Asian Rhino Specialist Group of the IUCN Species Survival Commission with the support of UNEP.

To implement the Rhino Conservation Strategy at a national level, both Indonesia and Malaysia have developed rhino conservation action plans:

- *The Indonesian Rhino Conservation Strategy and The Indonesian Conservation Action Plan Priorities*
Documents for implementation of conservation activities for these species at the national level developed with the encouragement and assistance of the IUCN SSC and UNEP by the Directorate General of Forest Protection and Nature Conservation (PHPA), Ministry of Forestry, Indonesia, with the assistance of the Foundation of Rhino Friends (Yayasan Mitra Rhino), IUCN - World Conservation Union, Species Survival Commission (Asian Rhino Specialist Group), World Wide Fund for Nature (WWF), Indonesia Programme. The Action Plan and Conservation Strategy have been recommended and endorsed by the government of Indonesia, the IUCN, and the World Wide Fund for Nature (WWF). The Indonesian Rhino Conservation Strategy will also contribute significantly to the high priority placed on rhino conservation by the United Nations Environment Programme and CITES. The Strategy and Plan delineate immediate and attainable priorities for conservation action and suggestions for further studies on policy and funding mechanism to strengthen the Indonesian Rhino Conservation Strategy. The goal of the Indonesian Plan is to create conditions conducive to the long-term survival of viable populations of the Javan Rhino (*Rhinoceros sondaicus*) and Sumatran Rhino (*Dicerorhinus sumatrensis*) in the wild in Indonesia.
- *Report of the 1993 Population and Habitat Viability Analysis (PHVA) Workshop*
- *The Malaysia Rhino Conservation Action Plan*
Again a document for implementation of conservation activities for these species at the national level (in Peninsula, Sabah, and Sarawak) with the encouragement and assistance of the IUCN SSC and UNEP. The Malaysia Rhino Conservation Action Plan was formally prepared in 1993 with assistance of a consultant mission from UNEP.

These various Strategies and Action Plans are attached as Appendices:

- I. Asian Rhinos - An Action Plan for Their Conservation. (The Action Plan of the IUCN/SSC Asian Rhino Specialist Group)
- II. The Report of the 1993 Meeting of the IUCN/SSC Asian Rhino Specialist
- III. The Indonesia Rhino Conservation Strategy and Action Plan with
- IV. Addendum to Indonesian Rhino Action Plan delineating greater details for training and deployment of rhino protection units.
- V. Report of the 1993 Population and Habitat Viability Analysis (PHVA) Workshop in Sumatra, Indonesia.
- VI. The Malaysian Rhino Conservation Action Plan

Summary of the Rhinoceros Conservation Strategy:

The conservation strategy, global and national, provides for survival and recovery of viable populations of the rhino. Toward these goals, the strategy integrates *in situ* and *ex situ* components, governmental and non-governmental partners, and traditional and non-traditional methods. The strategy entails a diversified approach that includes: wild population protection, sanctuary management, captive propagation, and ultimately gene bank technologies. The strategy also employs the rhinos as umbrella and flagship species to conserve ecosystems of which they are an integral part.

More specifically, major components of the strategy are:

(1) Survival or Recovery of Viable Populations of the Rhino.

This strategy is based on preliminary population and habitat viability analyses (PHVAs). These analyses use models to consider demographic and genetic characteristics of the population as well as current and projected conditions in the habitat with the objective of: (1) assessing the risks, both deterministic and stochastic (random) to survival and recovery of the population and (2) evaluating various management options or scenarios.

Based on these analyses, explicit and indeed quantitative recommendations for the conservation of the species are generated. Its goal is the recovery of rhino populations to target levels that have been established through population viability analyses:

Sumatran Rhino:

Sumatra: 1000 rhino in 3 protected areas

Borneo: 700-1000 rhino in 5 protected areas (2 in Kalimantan; 2 in Sabah; 1 in Sarawak);

Mainland: 1000 rhino (600 in peninsular Malaysia; 200 in Thailand; 200 in Burma) in 7 protected areas (3 in Peninsular Malaysia; 2 in Thailand; 2 in Burma)

Javan Rhino:

Java: 100 rhino in Ujung Kulon with improved protection and management.

Elsewhere: Another 1,900 Javan rhino re-established in 9-19 protected areas (each capable of sustaining at least 100 rhino) within the historic range of the species.

Population and habitat viability analyses will continue to adaptively refine the action plans for the rhino strategy. These PHVAs will generate more explicit assessment of risk and recommendations for action. In particular, further PHVAs for the Sumatran rhino in both Indonesia and Malaysia will permit optimal placement of the infrastructure to be provided by this project. The PHVAs will be enhanced by Geographic Information System (GIS) techniques developing on the database and methodology already being developed as a collaborative venture by PHPA, the IUCN SSC (through its Captive Breeding Specialist Group specializing in Small Population Management), and the Minnesota Zoological Garden.

(2) Protection and Management of the Sumatran and Javan rhino as Species and as Components of their Ecosystems.

While an emergency exists for the survival of the two species of rhino, the conservation strategy for them also emphasizes their role as flagship and umbrella species for their ecosystems.

The term flagship species is well established in conservation parlance. The term umbrella species is not as much used. There is a useful distinction between the terms that is related to the emerging science of viable population biology. Flagship species is best used as a marketing term to designate those charismatic species that can attract support for conservation of their ecosystems. Umbrella species is best used as an ecological term to indicate species for which the habitat required to sustain viable populations (defined in terms of genetic and demographic factors) is so large that it will encompass appreciable parts of the natural ecosystem inhabited by the umbrella species.

The two species of South East Asian rhino are both umbrella and flagship species. The population viability analyses used to assist formulation of the conservation strategy for the rhino has recommended that priority be accorded to protected areas that can accommodate a population of 100 rhino, preferably more. Moreover, the strategy recommends that the recovery program aspire to total target populations of 2000 to 3000 to be restored in the wild for each species and significant subspecies of Sumatran and

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Javan rhino. Ecological studies indicate that each Sumatran rhino require on the average 5-10 km² of tropical forest habitat. Hence, objectives for the priority protected areas will be around 1000 km² at a minimum and the overall objectives will if achieved help conserve 40-60,000 km² of tropical forest ecosystems in South East Asia.

Protection and management of this amount of habitat to accommodate viable populations of rhino will also benefit many other threatened species including orang utan, tiger, elephant, and thousands of other taxa. The activities of the rhino units and the application of their infrastructure can be used for protection and management of other species in the rhino's ecosystem.

(3) *Prioritization of Protected Areas for Conservation Activities.*

A major recommendation is to concentrate field efforts on wild populations and protected areas that were sufficiently large and protectable to be viable (i.e. demographically secure and genetically diverse) over the long-term.

The strategy recognizes 9 major wild populations of and protected areas for Sumatran rhino and 1 major population and protected area for the Javan rhino. These areas are to receive priority in terms of field efforts and resources.

Rhino outside these larger populations and areas are recommended for *ex situ* actions, i.e. careful translocation and captive propagation.

(4) *Improved Protection and Management of the 10 Major Populations and Protected Areas.*

Critical to the *in situ* component of the rhino conservation strategy is the development of special rhino protection units that possess the equipment and training:

- to provide improved protection and management of rhino and their habitats and
- to serve as extension agents to promote community development and involvement in the conservation activities.

The core (Peninsula) or analogues (Sabah) of such rhino protection units already exist in Malaysia but must be expanded to have resident extensions in each of the major protected areas. The rhino protection units need to be formed in Indonesia. The funding from GEF is critical to both the extension in Malaysia and the establishment in Indonesia.

(5) *Professional Training within the Range States:*

Implicit in the formation of the rhino units, is the need for more training in wildlife population and protected area management. Such programs will be continued and expanded as part of the strategy

(6) *Capacity Development in Local Communities*

In addition to traditional protection and management actions for the *in situ* population, this prototype plan also includes components relating to local community problems and involvement in rhino conservation and their habitats, including:

- public awareness and educational campaigns nationally and locally;
- economic incentive and development programs;
- networks for local citizens to provide information useful to protection and management of the rhino and areas.

Cooperative programs by PHPA and WWF for the community relations and development part of the strategy in Indonesia are already under way.

(7) Development of More Intensively Protected and Managed In Situ Zones, "Sanctuaries".

A sanctuary is a natural or artificially enclosed tract within a protected area in which a high density of rhino is developed as a propagating nuclei to repopulate other protected areas. This method is sort of a hybrid between *in situ* and *ex situ* areas and could be a prime site for translocation of rhino rescued from inviable situations.

(8) Development of captive populations in support of the *in situ* efforts.

Ultimately, the goal of the captive programs is to develop captive populations to support survival of the species (and perhaps subspecies) in the wild. Rhino for the sanctuaries or captivity will be individuals that are not in viable situations in the wild, i.e. they are not part of populations sufficiently large or feasibly protectable. Some such rhino may also be translocated into the major protected areas.

The *ex situ* efforts utilize captive facilities can be either zoos or preferably special centers which may be constructed in or near protected areas but which would entail more intensive management than the sanctuaries described above. Such intensive management centers (IMCs) are to be developed in Indonesia (probably at Barisan Selatan National Park) and in Malaysia (at Sungai Dusun Wildlife Reserve).

(9) Reduction of Trade in Rhino Horn

Efforts are required at international, national, and local levels to reduce the trade in rhino horn and thus the poaching pressure on rhino. Particularly important are the capacity development programs in local communities which can help stop the trade at its source.

(10) Explicit Delineation of Methods and Estimates of their Costs to Achieve the Biological Objectives of the Strategy.

Total start-up costs to implement the strategy for Sumatran and Javan rhino in Indonesia and Malaysia have been estimated at approximately US \$ 6 million. The proposed GEF funds of US\$ 2 million is expected to catalyze additional funds at the UNEP Conferences for Rhinoceros Range and Consumer States and Donors. Some of these costs can be, and are already being, covered by governments of the range states supplemented by NGOs.

A funding plan to provide for the initial and recurrent costs is required, as acknowledged in the documents cited earlier. The funding plan must incorporate support from the range states and contributions from external donors. This GEF project will provide catalytic technical and financial support to initiate full implementation of the conservation strategy and will develop focus a funding plan for its long-term sustainability.

3. Prior and ongoing assistance

Indonesia:

UNDP:

Management support for Kutai National Park, which is potential rhino habitat.

World Bank:

Review of management of national parks with rhino populations; revision of national conservation strategy; preparatory project for the development of an integrated conservation and development program for Kerinci Seblat National Park.

European Community:

Support of biodiversity project in Gunung Leuser National Park that includes a rhino protection program.

Overseas Development Agency (ODA):

Survey for rhino in Way Kambas National Park.

USAID:

Support for management plans for conservation areas in Kalimantan that are potential rhino areas.

WWF:

Research and monitoring programs for rhino in various areas; rhino protection in Gunung Leuser National Park.

Indonesia Wildlife Fund (IWF):

General support and public awareness programs.

Bank International Indonesia (BII):

Support for Javan Rhino Research in Ujung Kulon National Park; public awareness campaigns.

Sumatran Rhino Trust (SRT)/Howlett's-Port Lympne Foundation:

Support for rescue of doomed rhino and development of captive propagation program.

Sumatran Rhino Survey (SRS):

Census survey of Sumatran Rhino in Kerinci Seblat.

Minnesota Zoological Garden:

Support for Management of Ujung Kulon National Park.

Government of New Zealand:

Development of infrastructure and administration of Ujung Kulon National Park.

Malaysia:

Peninsular Malaysia:

UNDP:

WWF:

Support for at least 34 projects, including:

- preparation of national conservation strategy
- survey of wintering shorebirds
- survey and management plan for Kota Belud Bird Sanctuary
- conservation wetlands on west coast of Peninsular Malaysia
- survey of Endau Rompin
- conservation of mango and its relatives in Peninsular Malaysia
- environmental impact study for Taman Negara tourist development
- preliminary investigation of green turtles, Segari, Perak
- conservation of lowland semi-deciduous forest in Perlis
- environmental investigation, Pulau Redang
- ecology of the Malaysian peacock pheasant
- management survey of relict patches in Selangor
- model turtle sanctuary in Trengganu
- avifauna of Malay Peninsula
- turtle tagging scheme
- management of marine turtle hatchery in Melaka
- the role of virgin jungle reserves
- collection, documentation, and conservation of gingers
- conservation status of plants of Fraser's Hills
- study of turtle nesting density in the Rhu Kudung Tanjung Batu and Cakar Hutan beaches
- management survey in Wang Kelian Perlis
- Pulau Sipadan management survey
- *In situ* hatchery program for marine turtles at Pulau Redang
- management survey of Wang Mu Forest Reserve, Perlis
- management survey of terrapins and marine turtles at Kuala Setiu Baharu, Trengganu
- floral survey of limestone hills in Perlis
- economics of conservation in perak
- conservation survey of main range ridge
- wild mango
- effects of selective logging operations on malaysia wildlife
- socio-economic values of freshwater wetland species in Peninsular Malaysia
- conservation of wild fruit trees in Peninsular Malaysia
- conservation and management of freshwater fish

Malayan Nature Society:

Conservation Survey and Management Plan for Endau Rompin State Parks

Sabah:

UNDP/FAO:

Support for project to prepare masterplan for the forest sector throughout Sabah.

UNDP (MAL/88/009):

Support for Sabah Environmental Management Plan providing for formulation of a Sabah Conservation Strategy, inputs designed to improve management in Tabin Wildlife Reserve, and expert assistance in the development of policy and planning in the Wildlife Department, including extensive revision of the wildlife/conservation legislation.

World Bank:

Support for implementation of the Sabah Land Settlement and Environmental Management Project, which included provision for an access road and reserve headquarters complex for Tabin Wildlife Reserve.

WWF-Malaysia:

Support for at least 13 major projects, including:

- Sumatran rhinoceros in Sabah
- estimation of elephant in Tabin Wildlife Reserve
- survey of crocodiles in Sabah
- orang-utan conservation in Sabah
- utilization and conservation of Palms on Mount Kinabalu
- survey and management recommendations for proposed Kulamba Reserve
- aerial survey of Kulamba Reserve
- survey of migrant and wintering shorebirds in Sabah
- survey and collection of wild and cultivated citrus of Sabah
- pilot survey of Mangifera in Sabah
- survey of Gunung Lotung
- additions to Sabah's conservation area network
- conservation action plan for the Dent Peninsula

Wildlife Conservation Society (formerly Wildlife Conservation International of NYZS):
Assistance with training of Wildlife Department Staff.

Sarawak:

Wildlife Conservation Society (formerly Wildlife Conservation International of NYZS):

Over the last 10 years support for 7 major projects:

- wildlife survey of Sarawak
- management study of proposed Batang Ai National Park
- conservation and management of proboscis monkeys
- conservation and management of banded langouros
- conservation and management of wetland habitats
- management of wildlife hunting
- training of wildlife staff

International Tropical Timber Organization

- management plan for Lanjak Entimau National Park

WWF-Malaysia

- Since 1977, 6 major projects to provide data and promote management for proposed or existing conservation areas:
 - survey of Gunung Mulu
 - establishment of Sungai Samunsam Wildlife Sanctuary
 - inventory of Sungai Samunsam Wildlife Sanctuary
 - ecological survey of Lambir National Park
 - survey of Lanjak Entimau
 - Headquarters building for Lanjak Entimau
- Since 1974, 7 major projects designed to provide data and conservation advice on threatened or rare taxa or habitats:
 - rhinoceros hornbill
 - orang-utan
 - hunted wildlife
 - proboscis monkeys
 - migrant and wintering shorebirds
 - crocodiles
 - species management plan for Sumatran rhino (1987)
- 2 major projects designed to identify and promote the creation of new conservation areas.
 - survey of wetland sites for migratory birds
 - conservation and management of wetland habitats
- 3 conservation education projects:
 - wildlife films for schools
 - production of a hornbill chart
 - conservation education program in Sarawak
- 7 projects designed to facilitate general action and project elaboration:
 - elaboration of conservation projects in Sarawak (and Sabah)
 - development of management plans for protected areas in Sarawak
 - conservation strategy Malaysia, fifth and sixth extension, Sarawak
 - elaboration of projects Sarawak/Sabah
 - acquisition of computer for Sarawak
 - development of documentation for government select committee on wildlife - Sarawak
 - WWF strategy for tropical forest conservation in Sarawak

4. Institutional Framework

Indonesia

The primary responsibility for conservation of biodiversity and hence rhinoceros resides with the Directorate General of Forest Protection and Nature Conservation (PHPA) in the Ministry of Forestry. National Parks are managed as a special structural unit, technically and administratively reporting to the Directorate of Conservation Areas, Directorate General of Forest Protection and Nature Conservation, Ministry of Forestry, based in Bogor. The State Ministry of Environment also provides guidance for biodiversity conservation at the policy and strategy level. Yayasan Mitra Rhino (YMR) (Foundation of Rhino Friends) has been established as a non-governmental organization devoted to promotion of rhino conservation activities in Indonesia. Various international NGOs (WWF, International Rhino Foundation (IRF), Minnesota Zoological Garden, Sumatran Rhino Trust (SRT), Howlett's-Port Lympne Foundation, Sumatran Rhino Survey (SRS) and private sector donors (Bank International Indonesia) have also been involved in rhino conservation. An objective of the project is to form a closer coalition of these organizations to help implement the project.

Malaysia

Responsibility for conservation of biodiversity and hence rhinoceros in Malaysia is distributed among three management authorities reflecting the 3 geographically disjunct regions of the nation:

Peninsula Malaysia:

The Department of Wildlife and National Parks (DWNP) in the Ministry of Science, Technology and Environment;

Sabah:

The Department of Wildlife in the state Ministry of Tourism and Environmental Development has responsibility for protection of all wildlife outside parks, i.e. the Wildlife reserves such as Tabin where rhino are located; Sabah Parks is responsible for protection of all wildlife in the parks system.

Sarawak:

The Wildlife Division of the Department of Forestry in the state Ministry of Resource Planning.

The federal Economic Planning Unit (E.P.U.) has the responsibility for approving and coordinating all external assistance and for serving as the liaison between external donors and federal and state departments implementing projects.

The Malayan Nature Society (Peninsula) and WWF-Malaysia (Sabah) as well as a number of international NGO's (The IRF) have also been involved in rhino conservation. An objective of the project is to form a closer coalition of these organizations to help implement the project.

B. PROJECT JUSTIFICATION

(1) The problem to be addressed; the present situation

The decline of Sumatran rhinoceros in Indonesia and Malaysia continues and may be accelerating.

Indonesia: Estimates indicate the population may have been reduced 50% in the last decade.

Malaysia: The rate of decline has also been appreciable but variable in Sabah and in Peninsular Malaysia; the situation in Sarawak is poorly known.

The decline of both species of rhinoceros, Sumatran and Javan, has been in process for a long time. The Javan rhino for example was eliminated from Malaysia in the 1930's. Rhino decline in South East Asia is due to a combination of reduction in habitat and overexploitation of rhino (most recently by poachers after the horn). The relative importance of these two causes for decline has varied in both time and place. At this time, poaching pressure continues to be high in Indonesia, hence there is need in that country to emphasize anti-poaching activities in their rhino conservation programs. In contrast, there is little current evidence for rhino poaching in Sabah but loss and fragmentation of habitat is a serious threat. Hence, rhino conservation efforts in Sabah need to concentrate on translocating isolated ("doomed") rhino into intensively protected areas whose management is also being reinforced. In Peninsular Malaysia habitat and poaching problems are of about equal importance so that the rhino conservation program there is oriented both to improved anti-poaching and translocation components. Unfortunately, the situation in Sarawak continues to be poorly known.

Although concern has been high and plans developed, both Indonesia (PHPA) and Malaysia (DWNP in Peninsula, DW in Sabah, and DF in Sarawak) have lacked the technical, logistical, and organizational capacity to initiate full implementation of the conservation strategies and actions for rhinoceros conservation that have been formulated in both nations.

Specifically, there is the need in both Indonesia but also Malaysia to further develop special rhino conservation units to immediately arrest and reverse the decline in rhino numbers. In Indonesia, these rhino units will concentrate on protection; in Sabah, on surveys and translocation; in Peninsular Malaysia and Sarawak, on both activities.

Rhino protection units concentrating on poacher problems will require recruitment, training, and deployment of more personnel to conduct anti-poaching as well as community outreach activities. In Indonesia, the approximate cost to recruit, train, deploy, and operate a team is \$ 12,000 per year with an additional \$ 14,000 initial investment for operational facilities. (Refer to Appendix IV.)

In Indonesia, Rhinoceros are subject to poaching pressure both from hunters with firearms and from trappers who use wire snares and other traps that maim and kill animals. The methods employed in poaching prevention are primarily field patrols to search for traps and other signs of poachers, to destroy these traps, and to collect evidence to identify and apprehend the people involved. Rhino protection units should have the power to arrest the poachers. They must also be adequately equipped to deal with armed poachers and hence they must be able to carry guns. The leader of the rhino protection unit must have a certificate (Penyidik Pegawai Negeri Sipil or PPNS) to arrest people and carry guns.

For the Indonesian program, a mobile unit needs to be formed to provide leadership, training and supervision of the rhino protection units. The mobile unit should be composed of experienced persons, whose combined experiences and skills allow the team to do the tasks specified. Especially important are a wildlife or nature conservation background, research experience, administrative experience and leadership. Ideally a team should be composed of an experienced team-leader with a nature conservation background, a wildlife ecologist and a person with an administrative or legal background. The leader of the mobile unit will be the Regional Rhino Coordinator.

For Malaysia, where there is more need to translocate rhino from isolated, inviable situations into the intensively protected areas, there is need to provide operational capabilities to locate and move the rhino, maintain surveillance on them via patrol and telemetry, and improve protection of the areas into which the rhino are being consolidated.

Furthermore, there has been inadequate coordination and management of rhino conservation efforts in both nations. Indonesia has not had a special coordinator (designated a "Rhino Conservation Officer" in and recommended as a high priority by the Indonesian Rhino Conservation Strategy and Action Plan. The appointment of a Rhino Conservation Officer for Indonesia is vital for the success of the program. This position should be at the Director level within PHPA. The Government can provide a basic salary but functional supplements are required and requested from the GEF Project. This position also needs administrative and technical support to operate effectively.

A Rhino Conservation Officer did exist in Peninsular Malaysia from 1977 to 1988. However, the limitations of staff in the Department of Wildlife and National Parks has required that the rhino officer become engaged in many other management and research projects. Hence, over the last several years, rhino conservation has been conducted on an ad hoc basis or delegated to state directors for wildlife. The lack of coordination is probably a reason for the recent increase in poaching. The position of Rhino Conservation Officer needs to be reinstated in Peninsula and instituted in Sabah and Sarawak.

The rhino protection units and rhino officers should associate and coordinate closely with the other existing protected area, wildlife management staffs, and civil authority staffs, both at regional and national level.

To further improve coordination, the exchange of officers and team members between the Malaysian and Indonesian rhino protection groups is highly recommended.

There has also been insufficient attention to community outreach, involvement and development as an essential component of viable and sustainable conservation programmes for rhino and their ecosystems. Further, there has been inadequate attempts to demonstrate or develop how rhino, and by extension biodiversity, conservation can be of economic value and noneconomic importance (pride, traditions) to local communities.

Conservation of nature cannot be successful without appreciation of the need for, and the acceptance of the costs of, conservation at all levels of the society, but especially at the local level in communities around the rhino habitat. Public awareness and appreciation should be developed through a variety of formal and informal education programmes.

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An earnest, professional force that carries out the government's programmes with zeal and dedication will also have a significant, beneficial impact on public opinion. The Rhino Protection Units and the Mobile Units will play an important role in the education of the peoples living around rhino areas. Staff involved in education and awareness programmes need special interpretive training on:

- (1) How to interact with people, individually and during meetings and gatherings.
- (2) Ideas on what to say and how (values, natural history, economic and social context, etc of rhinos).

Needless to state, the rhino protection units will be required to develop good relations with local people, to obtain information and assistance in the prevention of poaching, and to increase awareness of the plight of the rhino and the importance of its conservation. They should also try to establish the identity of contact persons and the routes used for the horn trade, and relay such information to the appropriate authorities. Monetary rewards to individuals who identify poachers should be considered.

The people selected for the anti-poaching and monitoring units should be recruited in part from people in the locality of the key areas. All members should have considerable knowledge of the rain forest but in each team one person should have power to apprehend poachers. Each team should consist of four to five people one of which should be the team leader with appropriate rank and skills. Salaries and other benefits should be adequate to attract well-qualified people. A bonus system for good performance should be considered.

Conservation programmes must be based on reliable data on the status of the populations and species. Data on rhino numbers and distribution is inadequate, often rough estimates or tenuous extrapolations. To provide more reliable data, a continuous monitoring programme for Sumatran rhinos must be initiated in all reserves. Reliable censusing methodology should be developed and personnel should be trained in censusing techniques and in the evaluation of the results. The rhino protection units should be used as field observers to enhance census information on the rhino and other species.

Finally, the extensive strategy and action plan formulation process has indicated that the costs for rhino conservation are high and will remain so for some time. No adequate funding plan for sustainability of the rhino conservation programme has been developed or implemented.

To establish the organizational and technical foundation on a solid basis with the available funds, the project will concentrate on the Sumatran rhino with benefits to the Javan accruing from increased knowledge and capacity enhancements. The activities of the Rhino Conservation Officer in Indonesia will from its inception be concerned with both species. In Indonesia, the project will concentrate on two of the four main areas for rhino to develop the capacity and model that can be extended to other areas immediately at the end of the project. The Sumatran rhino is an instance of a species where there is still time to act to reverse the current rapid decline in the population. Current efforts at all levels must therefore be intensified if a "Javan rhino" type crisis is to be avoided.

(2) Expected end of project situation

Rhino protection units will have been organized, trained, and deployed in both Indonesia and Malaysia (10 in each country). These units will be effectively engaged in both anti-poaching and community outreach programmes. Moreover, they will be able to train more units for use in other rhino areas.

An improved management structure with dedicated national coordinators in both Indonesia and Malaysia will have been established.

Poacher activity will be reduced to the point of elimination within the areas covered by the units as measured by numbers of traps and intruders detected by patrols and the numbers of rhino known to be lost as revealed by improved information on rhino numbers and distribution; monitoring of these rhino by radio telemetry will provide further improved information on rhino status and biology needed for the conservation programmes.

A number of rhino, in particular in Malaysia, will have been translocated from isolated situations into the intensive protection zones represented by the theaters of operation of the rhino protection units.

Persons from the local communities will be employed in the rhino protection units; income generating activities (e.g. ecotourism) will at least be delineated if not actually initiate; local communities will develop appreciation of and pride in the rhino, its ecosystem, and their conservation; commitment of communities will be demonstrated by their provision of information about poacher activity; standards of living will be enhanced by improved protection and management of the forest resources (e.g. increase in fish stocks due to elimination of illegal, unregulated fishing).

A strategic funding plan will have been formulated that links target donors with specific modules of the conservation programme. Proposals to these donors (governmental and non-governmental inside and outside the Indonesia and Malaysia) will have been prepared and presented.

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(3) Target beneficiaries

Human target beneficiaries are (1) the persons living in local communities in the vicinity of rhino habitat (2) the people of Indonesia and Malaysia, whose biodiversity conservation will be enhanced by this project (3) the global human population who will also benefit from the natural heritage conserved.

It is, of course, also the case that the rhino and other wildlife in the areas concerned will be direct beneficiaries of this Project.

(4) Project strategy and implementation arrangements

Indonesia:

Implementation of the project in Indonesia will be provided by PHPA through the Rhino Conservation Officer and the Directorate of Conservation Programs in collaboration with Yayasan Mitra Rhino (Foundation of Rhino Friends) and with the assistance of consultants. A technical advisory board consisting of national and international experts and leaders in rhino conservation will provide advice for PHPA on rhino conservation. The Indonesian Rhino Conservation Officer will serve as the manager of the GEF Project and the national coordinator for the rhino conservation strategy. The project manager will receive administrative assistance for the project from YMR. Technical assistance for the project manager will be provided by consultants.

Malaysia:

Implementation of the project in Malaysia will be provided by the three separate authorities that manage wildlife conservation respectively in Peninsula Malaysia, Sabah, and Sarawak. In Peninsular Malaysia, it is the Department of Wildlife and National Parks, in the Federal Ministry of Science, Technology, and Environment; in Sabah, it is the Department of Wildlife in the State Ministry of Tourism and Environmental Development; in Sarawak, it is the Department of Forestry in the Ministry of resource Planning. Three Rhino Conservation Officers will be appointed or designated in Malaysia, one for each of the major geographic and political regions of the country. In Peninsula Malaysia, a full-time RCO will be appointed and support for this position for the first three years is being requested from the GEF project. In Sabah, an existing Wildlife Officer will be designated as a part-time RCO but with the assistance of an Associate Professional Officer (APO). No direct support is requested from the GEF for the Sabah RCO nor for salary for the APO. However, field costs and allowances and air fares are requested from the GEF for this APO. In Sarawak, the an existing Forest Officer will be designated as a part-time RCO. These Rhino Conservation Officers (one in Peninsula, one for Sabah and one for Sarawak) will serve as the Managers for this Project and as the national/state coordinators for the rhino conservation action plans in each region respectively.

The Federal Economic Planning Unit (E.P.U.) in Malaysia will have the responsibility for approving and coordinating all external assistance and for serving as the liaison between external donors and federal and state departments implementing projects.

Indonesia and Malaysia:

Overall supervision of the GEF project will be provided by the IUCN/SSC Asian Rhino Specialist Group (AsRSG). Program Officers of the AsRSG will work closely with the Rhino Conservation Officers/Project Managers in each country to adaptively manage and implement the Project.

(5) Reason for assistance from UNDP

Significant financial and technical are needed to initiate full implementation of the rhino conservation action plan. Currently, the governments of Indonesia and Malaysia are unable to provide the full level of initiation costs required. UNDP assistance for support to initiate the implementation of the conservation strategy for rhinoceros is being requested by the Governments of Indonesia and Malaysia.

The proposed project is consistent with UNDP's Fourth Country Programme in Indonesia, which includes environmental protection and natural resource management as one of its eight key programmes for implementation over the period 1991 to 1994.

The proposed project is consistent with UNDP's policy and programmes in Malaysia.

The GEF project will help to catalyze full implementation of the conservation strategy for these globally significant rhino and ecosystems. Without immediate and considerable intervention, the rhinos of South East Asia and their ecosystems will be lost. Although nominally for conservation of the two rhino species, the overall program and this project will provide protection and management for large tracts of tropical forest and hence conservation of the extensive biodiversity contained therein. Donor interest in rhinos seems high and growing, but most of the attention has been directed to the African species. This GEF project will provide some balance in global rhino conservation by concentrating on some of the Asian species.

If this project and the overall conservation strategy to which it will contribute are successful, the model can be replicated for the other species of Asian rhino (*Rhinoceros unicornis*) in India and Nepal and to other range states for the Javan and Sumatran rhino (i.e., Myanmar, Thailand, Laos, and Vietnam.)

(6) Special considerations

The project will promote involvement by the private sector in conservation and development activities. The project will have no negative impact on the environment. The only special group on which the project will have negative impact are the rhino poachers. In one sense, elimination of poaching could be interpreted as removing a benefit from those persons engaged in this activity. However, this activity is not a sustainable utilization of the natural resource and the project aspires to develop other more sustainable income generation activities that hopefully will compensate both local communities and individuals for any loss incurred.

(7) Coordination arrangements

The IUCN/SSC Asian Rhino Specialist group will provide the mechanism for coordination of rhino conservation between Indonesia and Malaysia and between the various governmental and nongovernmental parties involved.

Indonesia:

The technical advisory board of PHPA will provide further coordination at the national level.

Malaysia:

A similar technical advisory group involving both governmental and non-governmental parties is anticipated soon.

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(8) Counterpart support capacity

The process of strategy development that has occurred so far demonstrates the long-term commitment and sustainability of the program. Thus, this GEF project is an intervention that will be both significant and successful.

Indonesia:

The Rhino Conservation Strategy is a very high priority of the Indonesian Government. The Government of Indonesia has endorsed the Rhino Conservation Strategy and Action Plan and is encouraging its implementation. The National Development Planning Agency (BAPPENAS) has designated the Sumatran rhino conservation program as a priority project under Repelita VI. It is anticipated that the Government will contribute substantially to the rhino conservation program and that this investment will increase as a result of the funding plan to be developed by this project. This commitment is further demonstrated by the establishment of Yayasan Mitra Rhino whose Board includes the Director General of PHPA and assistant ministers from the State Ministry of Environment. Counterpart capacity will further increased by the Department of Conservation Programs in PHPA.

Malaysia:

The Rhino Conservation Action Plan is a very high priority of the Malaysian Government, federal and state. Government is committing approximately US \$ 1,200,000 to rhino conservation over the next 3 years. It is anticipated that Government investment in the program will increase as a result of the funding plan to be developed by this project. The designation of Rhino Conservation Officers in Peninsula, Sabah, and Sarawak is further indication of the strong commitment of the Governments.

C. DEVELOPMENT OBJECTIVE

The developmental objective is to enhance the conservation of biodiversity in Indonesia and Malaysia for by providing technical training, operational support, and a long-term funding strategy to improve the effectiveness, sustainability, and benefits (to local, national, and global human communities) of the protection and management programmes for the Sumatran and Javan rhinoceros serving as flagship and umbrella species for their ecosystems.

This development objective relates directly to the Biodiversity and Rhino Conservation Action Plans of Indonesia and Malaysia.

D. IMMEDIATE OBJECTIVES, OUTPUTS, AND ACTIVITIES:

Indonesia

Immediate Objective 1

To enhance the capabilities of the Directorate General of Forest Protection and Nature Conservation (PHPA) and associated wildlife conservation agencies to arrest and reverse the decline of rhinoceros due to poacher activity and habitat encroachment toward the national and global goal of recovery of viable populations of rhino species in Malaysia.

Success Criteria

A total of 1 mobile unit and 9 rhino protection units will be operational in two of the major protected areas for Sumatran rhino in Sumatra (7 rhino protection units in Kerinci Seblat National Park and 2 rhino protection units in Bukit Barisan Selatan National Park);

A management, coordination, and training structure will have been established that can be used to extend the rhino conservation activities to other areas;

Poacher activity will be reduced to the point of elimination within the areas covered by the units as measured by numbers of traps and intruders detected by patrols and the numbers of rhino known to be lost as revealed by improved information on rhino numbers and distribution;

Much more accurate and reliable information on rhino distribution and numbers linked to a geographic data base will be available rather than the approximate estimates and extrapolations that are now available.

An appreciable number of rhino will have been translocated from isolated situations into the intensive protection zones represented by the theaters of operation of the rhino protection units; monitoring of these rhino by radio telemetry will provide further improved information on rhino status and biology needed for the conservation programmes.

Output 1.1

Improved management and coordination mechanisms for implementation of the rhino conservation strategy and action plan.

Activities for Output 1.1

1.1.1 Establishment of the position of and appointment of a person as Rhino Conservation Officer who will be responsible for overall facilitation and coordination of implementation of the Rhino Conservation Action Plan.

Responsible party: PHPA, UNDP

1.1.2 Appointment of the Rhino Conservation Officer as the Manager for the GEF Project.

Responsible party: UNDP.

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1.1.3 Appointment of YMR (Foundation of Rhino Friends) as the administrative assistance mechanism for the Rhino Conservation Officer.

Responsible Party: PHPA, UNDP

1.1.4 Appointment of a Field Operations Consultant.

Responsible Party: PHPA, UNDP

1.1.5 Appointment of the IUCN/SSC AsRSG Program Officers to provide the overall supervision of the Project in collaboration with the Rhino Conservation Officer.

Responsible party: UNDP.

1.1.6 Development through a selection and training process of a regional field coordinator to serve as leader of the mobile unit for the two protected areas covered by the project.

Responsible party: Rhino Conservation Officer and Consultants.

1.1.7 Assistance and advice for the Rhino Conservation Officer/Project manager and for the Regional Field Coordinator.

Responsible party: AsRSG Supervisors and Consultants

1.1.8 Adaptive adjustment of the management structures as the project is implemented.

Responsible party: Rhino Conservation Officer, AsRSG Supervisors and Consultants

Output 1.2

Recruitment, training, deployment and operation of 9 rhino protection units in two of the major protected areas (Kerinci-Seblat and Barisan Selatan National Parks) where Sumatran rhino survive.

Activities for Output 1.2

1.2.1 Recruitment and appointment of the leader and members of the mobile unit.

Responsible party: Consultants and Rhino Conservation Officer.

1.2.2 Recruitment of 54 candidates from local communities and 18 PHPA rangers to serve as members and leaders of the rhino conservation units.

Responsible party: Consultants, Rhino Conservation Officer

1.2.3 Training programs that will produce 27 rhino protection unit members and 9 rhino protection team leaders.

Responsible party: Consultants, Rhino Conservation Officer

Indonesia

- 1.2.4 Procurement of operational equipment and facilities (base camps) to enable the rhino conservation units to be activated expeditiously.

Responsible party: PHPA and RCO as Project Manager.

- 1.2.5 Rehabilitation of existing rhino rescue (capture) team center at Air Hitam as an initial base of training and operation for the rhino management teams.

Responsible party: Rhino Conservation Officer, YMR, Consultants

Output 1.3

Creation of a core of trained personnel that train units for other rhino areas in Sumatra.

Activities for Output 1.3

- 1.3.1 Training for the regional field coordinators and the rhino conservation team leaders to themselves become trainers of other units and coordinators.

Responsible party: Consultants with Rhino Conservation Officer

Output 1.4

Reduction to the point of elimination of all poacher activity within the intensive protection zones represented by the areas of activity of the rhino protection units.

Activities for Output 1.4

- 1.4.1 Intensive patrolling of areas to detect traps and arrest intruders (persons without authorization).

Responsible party: Rhino protection units

- 1.4.2 Surveillance of traps to detect further poachers

Responsible party: Rhino protection units

- 1.4.3 Destruction of traps.

Responsible party: Rhino protection units

- 1.4.4 Intelligence operations to assist in the apprehension of poachers, including:
- collation of existing information
 - collection and interpretation of rumor and stories easily available from villages
 - recruitment of paid informers
 - debriefing of apprehended poachers and other illegal operatives
 - information deriving from the community outreach progress
 - recruitment of agents to penetrate poaching and trading cells.

Responsible party: Rhino Conservation Officer, Regional Coordinators, Rhino Protection units

S.E. Asia Rhinos

Indonesia

1.4.5 Action against unauthorized utilization of natural resources in addition to rhino protection.

Responsible party: Mobile unit, rhino protection units.

1.4.6 Close coordination with the rest of the staff of the National Parks.

Responsible party: Mobile unit, rhino protection units.

Output 1.5

More intensive and sophisticated assessment of rhino numbers and distribution.

Activities for Output 1.5

1.5.1 More intensive and extensive surveys and monitoring of the rhino population conservation.

Responsible party: Rhino protection units.

1.5.2 Improvement and refinement of current survey and census techniques.

Responsible party: Consultants.

1.5.3 Development of a systematic system for the collection, analysis, and interpretation of data collected by the rhino protection units.

Responsible party: Consultants and Rhino Conservation Officer.

1.5.4 Establishment of a (geographic information system) GIS rhino database.

Responsible party: Consultants and Rhino Conservation Officer.

Output 1.6

Adaptive refinement of the conservation strategy and action plan as more information becomes available and situations change as the project is implemented.

Activities for Output 1.6

1.6.1 Incorporate data collected by the project into the GIS data base.

Responsible party: Rhino Conservation Officer

1.6.2 Continue the population and habitat viability (PHVA) process for both Sumatran and Javan rhinos.

Responsible party: PHPA and YMR.

Indonesia

Immediate Objective 2

To develop more involvement by, as well as benefits and incentives for, the local human communities in the vicinity of the rhino habitat.

Success Criteria

Persons from the local communities will be employed in the rhino protection units; income generating activities (e.g. ecotourism) will at least be delineated if not actually initiated; local communities will develop appreciation of and pride in the rhino, its ecosystem, and their conservation; commitment of communities will be demonstrated by their provision of information about poacher activity; standards of living will be enhanced by improved protection and management of the forest resources (e.g. increase in fish stocks due to elimination of illegal, unregulated fishing).

Output 2.1

Direct employment of at least 100 persons and formulation of plans for income provision of many other local people from rhino and ecosystem conservation within the next five years.

Activities for Output 2.1

2.1.1 Identifying appropriate candidates for the rhino protection units

Responsible party: Consultants, Rhino Conservation Officer

2.1.2 Training of the selected members of rhino protection units

Responsible party: Consultants, Rhino Conservation Officer

2.1.3 Formulation of ecotourism programs, especially in Barisan Selatan National park in conjunction with anticipated development of an intensive management center (IMC) there by other donors and partners.

Responsible party: Rhino Conservation Officer, Consultants, Other donors

Output 2.2

Establishment of a regular and vigorous program of outreach to the local human communities.

Activities for Output 2.2

2.2.1 Visit villages to explain the programme and the issues involved.

2.2.2 Design and distribute questionnaires to obtain information on: local rhino populations; human use of the forest; ecological-economic problems confronting the village such as crop destruction, tiger predation, decrease of fish stocks.

S.E. Asia Rhinos

Indonesia

- 2.2.3 Analysis of questionnaires and formulation of programs to link solutions to problems with rhino conservation
- 2.2.4 Conduct a continuing series of meetings with the local political, civic and religious leaders to provide a forum and to obtain community involvement: in part through economic incentives; in part through emphasis of islamic and adat (local tradition) values.
- 2.2.5 Regular discussion of problems and progress with the local villages.
- 2.2.6 Conduct of informal programs through scouts and other youth organizations for presentations on conservation of rhinos and biodiversity.
- 2.2.7 Production of leaflets and posters.

Responsible party for all above Output 2.2 Activities: Rhino Protection Units and Community Outreach Consultant.

Output 2.3

Integration of the community outreach programs with ongoing and future buffer zone development programs.

Activities for Output 2.3

- 2.3.1 Coordination with the implementing agencies for the buffer zone programs.

Responsible party: Mobile unit.

S.E. Asia Rhinos

Indonesia

Immediate Objective 3

To develop a comprehensive and sustainable funding plan for the rhino conservation strategy and action plan.

Success Criteria

By the end of the third year of the GEF project, a funding plan that involves both governmental and non-governmental, national and international, public and private sector parties will have been developed to provide the full costs of the rhino conservation strategy for a period of at least the next 7 years.

Output 3.1

A detailed plan that links modules of the total strategy and action plan with target contributors.

Activities for Output 3.1

- 3.1.1 Further delineation of exact actions and costs required for rhino conservation.
- 3.1.2 Identification of target donors governmental and nongovernmental, national and international.

Responsible party for both activities: Rhino Conservation Officer, YMR and AsRSG Consultants.

Output 3.2

Greater financial commitments from the Indonesian government for explicit parts of the funding plan.

Activities for Output 3.2

- 3.2.1 Proposals to the Government of Indonesia explicitly delineating and justifying greater expenditure of funds to sustain the rhino programmes as an integral component of Biodiversity and Human Development action plans.

Responsible party: Rhino Conservation Officer and YMR and PHPA counterparts

Output 3.3

Securement of long-term commitments from non-governmental and foreign-governmental partners

Activities for Output 3.3

- 3.3.1 Prepare and present proposals for appropriate and likely donors for various components (modules) of the rhino conservation program.

Responsible party: Rhino Conservation Officer, AsRSG Consultant

Malaysia

Immediate Objective 1

To enhance the capabilities of the Department of Wildlife and National Parks of Peninsular Malaysia (DWNP), the Department of Wildlife in Sabah (DW) and the Forestry Department in Sarawak (FD) to arrest and reverse the decline of rhinoceros due to poacher activity and habitat encroachment toward the national and global goal of recovery of viable populations of rhino species in Malaysia.

Success Criteria

A total of 10 rhino protection units will be operational in six of the major protected areas for Sumatran rhino in Malaysia (Endau-Rompin State Parks, Taman Negara National Park, Selama Forest Reserve and Belum Forest Reserve in Peninsula; Tabin in Sabah; Pulong Tau National Park in Sarawak);

A management, coordination, and training structure will have been enhanced and will be available to extend the rhino conservation activities to other areas;

Poacher activity will be reduced to the point of elimination within the areas covered by the rhino protection units;

Much more accurate and reliable information on rhino distribution and numbers linked to a geographic data base will be available rather than the approximate estimates and extrapolations that are now available.

Output 1.1

Improved management and coordination mechanisms for implementation of the rhino conservation strategy and action plan.

Activities for Output 1.1

1.1.1 Reactivation of a position of Rhino Conservation Officer in Peninsular Malaysia and appointment of Rhino Conservation Officers for Sabah and Sarawak; these rhino conservation officers will be responsible for overall facilitation and coordination of implementation of the Rhino Conservation Action Plan in Malaysia.

Responsible party: Deputy Director General of DWNP Peninsular Malaysia, Director of DW Sabah, and Director of FD Sarawak.

1.1.2 Appointment of the Rhino Conservation Officers as Managers of the GEF Project.

Responsible party: UNDP, Deputy Director General of DWNP Peninsular Malaysia, Director of DW Sabah, and Director of FD Sarawak.

1.1.3 Appointment of a Field Operations Consultant(s).

Responsible party: UNDP, Deputy Director General of DWNP Peninsular Malaysia, Director of DW Sabah, and Director of FD Sarawak.

S.E. Asia Rhinos

Malaysia

1.1.4 Appointment of an Associate Professional Officer to assist the Rhino Conservation Officer in Sabah.

Responsible party: Director of Dept. of Wildlife Sabah.

1.1.5 Appointment of IUCN/SSC AsRSG Program Officer as Overall Supervisors for the Project.

Responsible party: UNDP

1.1.6 Assistance and advice for the Rhino Conservation Officers (RCOs)/Project Managers.

Responsible party: Field Operations Consultant, Associate Professional Officer, AsRSG Supervisors.

1.1.7 Adaptive adjustment of the management structures as the project is implemented.

Responsible party: RCOs, Field Operations Consultant, APO, AsRSG Supervisors.

Output 1.2

Activation or enhancement and operation on a permanent basis (at least 7 years) of 10 rhino protection units in the 6 major protected areas where Sumatran rhino survive.

Activities for Output 1.2

1.2.1 In Peninsular Malaysia Recruitment, reassignment of 50 rangers to concentrate on rhino conservation in Endau Rompin, Taman Negara, Belum and Selama.
In Sabah, support for the conservation management team for Tabin.
In Sarawak, reassignment of 10 rangers to serve as members and leaders of the rhino conservation units in Pulong Tau.

Responsible party: DWNP, DW, DF

1.2.2 Training programs that will improve the effectiveness of the rhino protection teams.

Responsible party: Rhino Conservation Officers, Field Operations Consultant, APO.

1.2.3 Procurement of operational equipment and development of operational facilities (guard posts) to enable the rhino conservation units to be activated expeditiously and operate effectively.

Responsible party: Rhino Conservation Officers as Project Managers.

Output 1.3

Creation of a core of trained personnel in the 6 protected areas that can be extended to other rhino areas in Malaysia.

S.E. Asia Rhinos

Malaysia

Activities for Output 1.3

- 1.3.1 Training for the rhino conservation team leaders to themselves become trainers of other units and coordinators.

Responsible party: RCOs, Field Operations Consultant, APO.

Output 1.4

Reduction to the point of elimination of all poacher activity within the intensive protection represented by the areas of activity of the rhino protection units.

Activities for Output 1.4

- 1.4.1 Intensive surveillance through patrols of the areas to detect traps and intruders (persons without authorization) and to arrest apparent poachers.
- 1.4.2 Surveillance of traps to detect further poachers
- 1.4.3 Destruction of traps.
- 1.4.4 Intelligence operations to assist in the apprehension of poachers, including:
- collation of existing information
 - collection and interpretation of rumor and stories easily available from villages
 - recruitment of paid informers
 - debriefing of apprehended poachers and other illegal operatives
 - information facilitated by cash bonuses deriving from the community outreach progress
 - recruitment of agents to penetrate poaching and trading cells.

Responsible party: Rhino protection units.

Output 1.5

Consolidation of isolated Sumatran rhino into intensive protection zones (IPZs) covered by the rhino units.

Activities for Output 1.5

- 1.5.1 Location of isolated rhino by surveys outside protected areas.

Responsible party: Rhino conservation officers and units.

- 1.5.2 Capture of isolated rhino to be transported into intensive protection zones.

Responsible party: Rhino conservation officers and units.

- 1.5.3 Monitoring by radio telemetry of rhino translocated into intensive protection zones.

Responsible party: Rhino protection units.

S.E. Asia Rhinos

Malaysia:

Output 1.6

More intensive and sophisticated assessment of rhino numbers and distribution.

Activities for Output 1.6

1.6.1 More intensive and extensive surveys and monitoring of the rhino population conservation.

Responsible party: Rhino protection units.

1.6.2 Improvement and refinement of current survey and census techniques.

Responsible party: Consultants.

1.6.3 Development of a systematic system for the collection, analysis, and interpretation of data collected by the rhino protection units.

Responsible party: Consultants and Rhino Conservation Officers.

1.6.4 Establishment of a (geographic information system) GIS rhino database.

Responsible party: Consultants and Rhino Conservation Officers.

Output 1.7

Adaptive refinement of the conservation strategy and action plan as more information becomes available and situations change as the project is implemented.

Activities for Output 1.7

1.7.1 Incorporate data collected by the project into the GIS data base.

Responsible party: Rhino Conservation Officers

1.7.1 Initiate a population and habitat viability (PHVA) process for rhinos in Peninsula, Sabah, and Sarawak by conducting workshops(s) for each of these 3 areas.

Responsible party: Rhino Conservation Officers, Consultant

S.E. Asia Rhinos

Malaysia:

Output 1.8

Advocacy for intensification of protected status of areas inhabited by the rhinos.

Activities for Output 1.8

1.8.1 Proposals to state and federal governments to confirm and extend state/national park status to Endau Rompin, Belum, and Selama.

Responsible party: Rhino Conservation Officers; DWNP Staff

1.8.2 Proposal to state government of Sabah to change status of Tabin from a Wildlife Reserve to a State Wildlife Sanctuary which will accord greater protection status.

Responsible party: Rhino Conservation Officers; WD Staff

1.8.3 Encouragement and proposals to government to activate and extend Pulong Tau National Park in Sarawak.

Responsible party: Rhino Conservation Officers; DF Staff

Malaysia

Immediate Objective 2

To develop more involvement by, as well as benefits and incentives for, the local human communities in the vicinity of the rhino habitat.

Success Criteria

Persons from the local communities will be employed in the rhino protection units; income generating activities (e.g. ecotourism) will at least be delineated if not actually initiate; local communities will develop appreciation of and pride in the rhino, its ecosystem, and their conservation; commitment of communities will be demonstrated by their provision of information about poacher activity; standards of living will be enhanced by improved protection and management of the forest resources (e.g. increase in fish stocks due to elimination of illegal, unregulated fishing).

Output 2.1

Direct employment of at least 50 persons and formulation of plans for income provision of many other local people from rhino and ecosystem conservation within the next five years.

Activities for Output 2.1

2.1.1 Identifying appropriate candidates for the rhino protection units

Responsible party: Rhino Officers, Consultants.

2.1.2 Training of the selected members of protection units.

Responsible party: Rhino Officers, Consultants.

2.1.3 Formulation of ecotourism programs, especially in Barisan Selatan National park in conjunction with anticipated development of an intensive management center (IMC) there by other donors and partners.

Responsible party: Rhino Conservation Officers, Consultants, Other donors

Output 2.2

Establishment of a regular and vigorous program of outreach to the local villages.

Activities for Output 2.2

2.2.1 Visit villages to explain the programme and the issues involved.

2.2.2 Design and distribute questionnaires to obtain information on: local rhino populations; human use of the forest; ecological-economic problems confronting the village such as crop destruction, tiger predation, decrease of fish stocks.

S.E. Asia Rhinos

Malaysia

- 2.2.3 Analysis of questionnaires and formulation of programs to link solutions to problems with rhino conservation.
- 2.2.4 Conduct a continuing series of meetings with the local political, civic and religious leaders to provide a forum and to obtain community involvement: in part through economic incentives; in part through emphasis of islamic and local traditional values.
- 2.2.5 Regular discussion of problems and progress with the local villages.
- 2.2.6 Visits to schools and youth organizations for presentations on conservation of rhinos and biodiversity.
- 2.2.7 Production of leaflets and posters.

Responsible party: Rhino protection units with help from Community Outreach Consultant.

S.E. Asia Rhinos

Malaysia

Immediate Objective 3

To develop a comprehensive and sustainable funding plan for the rhino conservation strategy.

Success Criteria

By the end of the 3 year GEF project, a funding plan that involves both governmental and non-governmental, national and international, public and private sector parties will have been developed to provide the full costs of the rhino conservation strategy for a period of at least the next 7 years.

Output 3.1

A detailed plan that links modules of the total strategy and action plan with target contributors.

Activities for Output 3.1

- 3.1.1 Further delineation of exact actions and costs required for rhino conservation.
- 3.1.2 Identification of target donors both governmental and nongovernmental, national and international.

Responsible party for both activities: Rhino Conservation Officers and AsRSG Consultants.

Output 3.2

Greater financial commitments from the Malaysian governments (federal and state) for explicit parts of the funding plan.

Activities for Output 3.2

- 3.2.1 Preparation and presentation of proposals the federal and state governments for increased allocations for rhino conservation.

Responsible party: Rhino Conservation Officers, Deputy D-G DWNP, Director DW, Director FD.

Output 3.3

Securement of long-term commitments from non-governmental and foreign-governmental partners

Activities for Output 3.3

- 3.3.1 Prepare and present proposals to appropriate and likely donors for various components (modules) of the rhino program.

Responsible party: Rhino Conservation Officer, AsRSG Consultant

S.E. Asia Rhinos

Indonesia and Malaysia (S.E. Asia Region)

Immediate Objective 1

To increase exchange of information and expertise between Indonesia and Malaysia on rhino conservation matters.

Success Criteria

More frequent visits by personnel of Indonesian and Malaysian rhino conservation programs to each other's projects. Less redundancy in development of techniques for and acquisition of knowledge about rhino conservation. Complementary approaches to non-national donors for support of rhino conservation programs.

Output 1.1

Activities for Output 1.1

1.1.1 Visit once per year of Indonesian Rhino Conservation Officer and Malaysia Rhino Conservation Officers to each others country to observe field operations

Responsible party: Rhino Conservation and Conservation Officers.

1.1.2 Visits by AsRSG Consultants to both countries to convey information between them.

Responsible party: AsRSG Consultants.

E. INPUTS

Indonesia:

	\$ 560,700
<u>Government</u>	\$ 89,000
(a) Personnel	
Partial support for Rhino Consvrtn Ofcrs and Admin. Asst.	
Partial support for members of mobile unit and rhino protection units	
9 PHPA rangers to serve on rhino protection units	
Partial support of in-country travel for RCOs, Rhino Field Crdntr.	
	\$ 30,000
(b) Training	
In-service training to provide each rhino unit with a PPNS certificate	
	\$ 197,700
(c) Operational Facilities and Support	
Operations and training center at Air Hitam	
Partial support of mobile unit and 9 rhino protection units	
Partial support for base camps	
	244,000
(d) Equipment	
Partial support of required field equipment	
Community outreach materials	
Vehicles from previous rhino rescue project; additional motor bikes	
Long-range radio system	
Office for the Rhino Conservation Officer and staff	
Office furniture for Rhino Conservation Officer and staff	
	<u>\$ 1,000,000</u>
<u>UNDP</u>	\$ 711,000
(a) Personnel	
Rhino Conservation Officer (first 3 years)	
Administrative Assistant for Rhino Conservation Officer	
Consultants/Supervisors to Assist Rhino Conservation Officer in:	
Organization, coordination and management techniques	
GIS data base techniques	
Proposal and report preparation	
Donor identification and development	
Field Operations Consultant to train rhino protection units in:	
Anti-poaching activities	
Survey and census techniques	
Community outreach work	
Rhino Protection Units & Field Coordinators	
Base Camp Staff	
Preparatory Assistance Mission	
	\$ 0
(b) Training	\$ 133,000
(c) Operational Facilities/Support	\$ 96,000
(d) Equipment	\$ 60,000
(e) OPS Costs (6%)	

E. INPUTS

Malaysia

Government

	Total \$ 1,057,000
(a) Personnel	
Rhino Conservation Officer (Peninsula)	\$ 756,000
Rhino Conservation Officer (Sabah)	
Rhino Conservation Officer (Sarawak)	
70 Wildlife Rangers (50 Peninsula, 10 Sabah, 10 Sarawak)	
(b) Training	\$ 20,000
(c) Operational Facilities and Support	
Offices for Rhino Conservation Officers	\$ 185,000
Bases for rangers in areas of operation	
Recurrent expenses for facility and vehicle operation	
Bomas for translocation of rhino	
(d) Equipment	96,000

UNDP

	Total \$ 1,000,000
(a) Personnel	\$ 300,000
Consultants to train Rhino Conservation Officers in: Organization, coordination and management techniques GIS data base techniques Proposal and report preparation Donor identification and development	
Consultants to train rhino protection units in: Anti-poaching activities Survey and census techniques Community outreach work Rhino rescue, translocation, and post-release monitoring Preparatory Assistance Mission	
(b) Training	
Veterinary Training	\$ 35,000
PHVA Workshops	
GIS Development	
(c) Operational Facilities and Support	
Bases for operation and training in rhino protected areas	\$ 249,000
Activation of rhino protection units	
Reports	
(d) Equipment	\$ 356,000
(f) OPS Costs (6%)	\$ 60,000

S.E. Asia Rhinos

F. RISKS

None anticipated.

G. PRIOR OBLIGATIONS AND PREREQUISITES.

Prior obligations:

None

Prerequisites:

Indonesia:

The government will allocate funds in national budgets as indicated in Section E. The technical advisory council for YMR will be established as provided in the Indonesian Rhino Conservation Strategy.

Malaysia:

The DWNP, DW, and DF will designate the Rhino Conservation Officers. The government will allocate funds in national budgets as indicated in Section E.

The project will be signed by the Resident Representatives on behalf of UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites have been fulfilled or are likely to be fulfilled. If one or more prerequisites fails to materialize, UNDP may, at its discretion, either suspend or terminate its assistance.

H. PROJECT REVIEWS, REPORTING, AND EVALUATION

1. (a) The project will be subject to joint review by representatives of the Governments, UNDP and the IUCN/SSC AsRSG at the end of each 12 month period of the three year project. The national project coordinators (the Rhino Conservation Officer in Indonesia, the Rhino Conservation Officers in Malaysia), the AsRSG project manager and the senior project officer of the United Nations executing shall prepare and submit to each joint review meeting a Project Performance Evaluation Report (PPER). Additional PPERs may be requested, if necessary, during the project.
- (b) A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the Governments, UNDP, and the IUCN/SSC AsRSG at least four month prior to the terminal tripartite review.

I. LEGAL CONTEXT

This project document shall be the instrument envisaged in the supplemental provisions to the project document contained in Annex . The host countries' implementing agencies shall, for the purpose of the supplemental provisions to the project document, refer to the government co-operating agency described in the supplemental provisions.

The following types of revisions to this project document require the signature of the UNDP Resident Representative only, provided he/she is assured that the other signatories of the project document have no objections to the proposed changes:

- a. Revisions in, or additions of, any of the annexes and appendices of the project document.
- b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the Project, but are caused by the re-arrangements of inputs already agreed to or by cost increases due to inflation.
- c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

Countries: Indonesia and Malaysia
Project Number: RAS/93/G31
Project Title: Conservation Strategy for Rhinoceros in S.E. Asia

Code	Description	Total			1994-95			1995-1996			1996-1997					
		M/M	\$	\$	M/M	TOTAL	GEF	GOVT	M/M	TOTAL	GEF	GOVT	M/M	TOTAL	GEF	GOVT
	PROJECT PERSONNEL															
	Rhino Conserv. Officer/Project Manager	36	54,000	9,000	12	18,000	15,000	3,000	12	18,000	15,000	3,000	12	18,000	15,000	3,000
	Rhino Conserv. Administrative Assistant	36	39,000	9,000	12	13,000	10,000	3,000	12	13,000	10,000	3,000	12	13,000	10,000	3,000
	AsRSG Project Supervisor	6	60,000	0	2	20,000	20,000	0	2	20,000	20,000	0	2	20,000	20,000	0
	Field Operations Consultant	18	180,000	0	8	80,000	80,000	0	6	60,000	60,000	0	4	40,000	40,000	0
	Community Outreach Consultant	6	60,000	0	2	20,000	20,000	0	2	20,000	20,000	0	2	20,000	20,000	0
	Rhino Units (4 pers./unit)	912	172,000	20,000	192	32,000	29,000	3,000	288	58,000	50,000	8,000	432	82,000	73,000	9,000
	Regional Rhino Field Coordinator	36	30,000	9,000	12	10,000	7,000	3,000	12	10,000	7,000	3,000	12	10,000	7,000	3,000
	Mobil Unit	72	36,000	16,000	36	12,000	10,000	2,000	36	12,000	6,000	6,000	36	12,000	4,000	8,000
	Component Total	1122	631,000	63,000	276	205,000	191,000	14,000	370	211,000	188,000	23,000	512	215,000	189,000	26,000
	Travel: In-Country		39,000	26,000		13,000	7,000	6,000		13,000	3,000	10,000		13,000	3,000	10,000
	Travel: Inter-Region		6,000	0		2,000	2,000	0		2,000	2,000	0		2,000	2,000	0
	Travel: AsRSG International		30,000	0		10,000	10,000	0		10,000	10,000	0		10,000	10,000	0
	Travel: Field Operations Consultant		54,000	0		18,000	18,000	0		18,000	18,000	0		18,000	18,000	0
	Mission costs (PA)		40,000	0		40,000	40,000	0		0	0	0		0	0	0
	Component Total		169,000	26,000		83,000	77,000	6,000		43,000	33,000	10,000		43,000	33,000	10,000
	TRAINING															
	In-Service Training		30,000	30,000		10,000	0	10,000		10,000	0	10,000		10,000	0	10,000
	Component Total		30,000	30,000		10,000	0	10,000		10,000	0	10,000		10,000	0	10,000

EQUIPMENT	M		M		M		M		M		M		M		M			
	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT
Expendable																		
Various Field Equipment	63,000	33,000	30,000	33,000	20,000	13,000	15,000	7,000	8,000	15,000	6,000	9,000	24,000	0	24,000	24,000	0	24,000
Community Outreach Materials/Facilities	72,000	0	72,000	24,000	0	24,000	24,000	0	24,000	24,000	0	24,000	24,000	0	24,000	24,000	0	24,000
Non-Expendable																		
6 4X4 WD Vehicles	150,000	45,000	105,000	100,000	20,000	80,000	100,000	20,000	80,000	100,000	20,000	80,000	100,000	20,000	80,000	100,000	20,000	80,000
9 Motor Bikes	18,000	4,000	14,000	8,000	4,000	4,000	8,000	4,000	4,000	8,000	4,000	4,000	8,000	4,000	4,000	8,000	4,000	4,000
Long-Range Radio for Mobil Unit	15,000	0	15,000	15,000	0	15,000	15,000	0	15,000	15,000	0	15,000	15,000	0	15,000	15,000	0	15,000
4 486 Computers with Printers	15,000	10,000	5,000	15,000	10,000	5,000	15,000	10,000	5,000	15,000	10,000	5,000	15,000	10,000	5,000	15,000	10,000	5,000
1 Facsimile Machine	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0
Photocopier	2,500	2,500	0	2,500	2,500	0	2,500	2,500	0	2,500	2,500	0	2,500	2,500	0	2,500	2,500	0
Office Rhino Conserv. Officer	45,000	0	45,000	45,000	0	45,000	45,000	0	45,000	45,000	0	45,000	45,000	0	45,000	45,000	0	45,000
Furniture R.C.O.	3,000	0	3,000	3,000	0	3,000	3,000	0	3,000	3,000	0	3,000	3,000	0	3,000	3,000	0	3,000
Base Camp Facilities	65,000	33,000	33,000	36,000	13,000	23,000	36,000	13,000	23,000	36,000	13,000	23,000	36,000	13,000	23,000	36,000	13,000	23,000
Component Total	451,000	129,000	322,000	283,000	71,000	212,000	283,000	71,000	212,000	283,000	71,000	212,000	283,000	71,000	212,000	283,000	71,000	212,000
MISCELLANEOUS																		
Operations for R.C.O.	30,000	12,000	18,000	10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000
Operation/Transport Mobile Unit	63,000	25,000	38,000	21,000	13,000	8,000	21,000	6,000	15,000	21,000	6,000	15,000	21,000	6,000	15,000	21,000	6,000	15,000
Operation Rhino Prot. Units	81,700	60,000	21,700	17,200	15,000	2,200	17,200	15,000	2,200	17,200	15,000	2,200	17,200	15,000	2,200	17,200	15,000	2,200
Operation Staff Vehicles	24,000	0	24,000	8,000	0	8,000	8,000	0	8,000	8,000	0	8,000	8,000	0	8,000	8,000	0	8,000
Operation Costs Advisory Board	15,000	0	15,000	5,000	0	5,000	5,000	0	5,000	5,000	0	5,000	5,000	0	5,000	5,000	0	5,000
Reporting	6,000	3,000	3,000	2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000
Component Total	219,700	100,000	119,700	63,200	33,000	30,200	63,200	33,000	30,200	63,200	33,000	30,200	63,200	33,000	30,200	63,200	33,000	30,200
OPS Cost	60,000	60,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0
Component Total	60,000	60,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0
GRAND TOTAL	1,560,700	1,090,000	560,700	664,200	392,000	272,200	664,200	392,000	272,200	664,200	392,000	272,200	664,200	392,000	272,200	664,200	392,000	272,200
				436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800
				87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000
				10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000	10,000	4,000	6,000
				21,000	6,000	15,000	21,000	6,000	15,000	21,000	6,000	15,000	21,000	6,000	15,000	21,000	6,000	15,000
				25,800	20,000	5,800	25,800	20,000	5,800	25,800	20,000	5,800	25,800	20,000	5,800	25,800	20,000	5,800
				8,000	0	8,000	8,000	0	8,000	8,000	0	8,000	8,000	0	8,000	8,000	0	8,000
				5,000	0	5,000	5,000	0	5,000	5,000	0	5,000	5,000	0	5,000	5,000	0	5,000
				2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000	2,000	1,000	1,000
				71,800	31,000	40,800	71,800	31,000	40,800	71,800	31,000	40,800	71,800	31,000	40,800	71,800	31,000	40,800
				20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0
				20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0	20,000	20,000	0
				436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800	436,800	314,000	122,800
				87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000	87,000	16,000	71,000

Conservation Strategy for Rhinoceros in S.E. Asia

Project Title:

Code	Description	TOTAL				1994-95				1995-1996				1996-1997				
		MM	\$	GEF	GOVT	M	\$	GEF	GOVT	M	\$	GEF	GOVT	M	\$	GEF	GOVT	
	PROJECT PERSONNEL																	
	Rhino Conserv. Ofcr/Project Manager (Peninsula Malaysia)	36	54,000	54,000	0	12	18,000	18,000	0	12	18,000	18,000	0	12	18,000	18,000	0	
	Rhino Conserv. Ofcr/Project Manager (Sabah)	18	27,000		27,000	6	9,000		9,000	6	9,000		9,000	6	9,000		9,000	
	Rhino Conserv. Ofcr/Project Manager (Sarawak)	18	27,000		27,000	6	9,000		9,000	6	9,000		9,000	6	9,000		9,000	
	Field Operations Consultant	6	60,000	60,000	0	2	20,000	20,000		2	20,000	20,000		2	20,000	20,000		
	Assoc. Prof. Ofcr. (Field Allowances)	36	36,000	36,000	0	12	12,000	12,000		12	12,000	12,000		12	12,000	12,000		
	AaRSG Project Supervisor	6	60,000	60,000	0	2	20,000	20,000		2	20,000	20,000		2	20,000	20,000		
	Community Outreach Consultant	12	60,000		60,000	4	20,000		20,000	4	20,000		20,000	4	20,000		20,000	
	70 Wildlife Rangers (50 Pns/10 Sbr/10 Swk)	2520	636,000	636,000	636,000	840	212,000		212,000	840	212,000		212,000	840	212,000		212,000	
	Subtotal	2652	960,000	210,000	750,000	884	320,000	70,000	250,000	884	320,000	70,000	250,000	884	320,000	70,000	250,000	
	Travel: In-Country		12,000	6,000	6,000		4,000	2,000	2,000		4,000	2,000	2,000		4,000	2,000	2,000	
	Travel: Inter-Region		6,000	6,000	0		2,000	2,000			2,000	2,000			2,000	2,000		
	Travel: AaRSG International		18,000	18,000	0		6,000	6,000			6,000	6,000			6,000	6,000		
	Travel: Fld Oprtn Cnslt		18,000	18,000	0		6,000	6,000			6,000	6,000			6,000	6,000		
	Travel: Assoc. Prof. Ofcr		12,000	12,000	0		4,000	4,000			4,000	4,000			4,000	4,000		
	Mission costs (PA)		30,000	30,000	0		30,000	30,000										
	Component Total		1,056,000	300,000	6,000		372,000	120,000	252,000		344,000	90,000	252,000		344,000	90,000	252,000	
	TRAINING																	
	Wildlife Veterinarian (Sabah)		20,000	10,000	10,000			10,000				10,000						
	GIS Specialist (Peninsula)		20,000	10,000	10,000			10,000	10,000			10,000	10,000					
	PHVA Workshop		15,000	15,000	0		15,000	15,000			15,000	15,000						
	Component Total		55,000	35,000	20,000		55,000	35,000	20,000		0	0	0		0	0	0	

EQUIPMENT	M			J			S			S			S			S		
	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT	TOTAL	GEF	GOVT
Expendable																		
Various Field Equipment (10Pns/10Sbh/5Swk)	25,000	25,000	0	25,000	25,000		25,000	25,000		0	0		0	0		0	0	
Capture Equipment/Supplies (20Pns/5Sbh)	25,000	25,000	0	25,000	25,000		25,000	25,000		0	0		0	0		0	0	
GIS Software/Remote Sensing Data	20,000	10,000	10,000	20,000	20,000		20,000	20,000		0	0		0	0		0	0	
Community Outreach Materials/Facilities	36,000	0	36,000	36,000	12,000		12,000	12,000		12,000	12,000		12,000	12,000		12,000	12,000	
Non-Expendable																		
4 4X4 WD Vehicles (1 Pns/3 Sbh)	85,000	85,000	0	85,000	85,000		85,000	85,000		0	0		0	0		0	0	
1 Truck with Hydraulic Arm (Sbh)	50,000	50,000	0	50,000	50,000		50,000	50,000		0	0		0	0		0	0	
1 Truck with Hydraulic Arm (Pns)	50,000		50,000	50,000	50,000		50,000	50,000		0	0		0	0		0	0	
1 Tractor, blade, hoe, trailer (Sbh)	70,000	70,000	0	70,000	70,000		70,000	70,000		0	0		0	0		0	0	
1 Patrol Boat (Srwk)	10,000	10,000	0	10,000	10,000		10,000	10,000		0	0		0	0		0	0	
3 Field Radio Systems (Pns/Sbh/Swk)	30,000	30,000	0	30,000	30,000		30,000	30,000		0	0		0	0		0	0	
Radio Tracking Equipment (Sbh)	10,000	10,000	0	10,000	10,000		10,000	10,000		0	0		0	0		0	0	
10 Radio Telemetry Collars (Sbh)	10,000	10,000	0	10,000	10,000		10,000	10,000		0	0		0	0		0	0	
2 486 Computers with Printers (Pns/Sbh)	10,000	10,000	0	10,000	10,000		10,000	10,000		5,000	5,000		5,000	5,000		0	0	
7 GPS Units/Altimeters (4 Pns/2 Sbh/1SK)	21,000	21,000	0	21,000	21,000		21,000	21,000		0	0		0	0		0	0	
Operational Facilities Construction (50K Pns/25K Sbh/15K Swk)	140,000	90,000	50,000	70,000	70,000		70,000	70,000		20,000	20,000		20,000	20,000		0	0	
Offices for RCOs, Consultants	72,000		72,000	72,000	24,000		24,000	24,000										
Component Total	664,000	446,000	218,000	517,000	443,000		443,000	74,000		37,000	74,000		37,000	74,000		12,000	24,000	

	MM	\$			MM	\$			MM	\$			MM	\$		
		TOTAL	GEF	GOVT		TOTAL	GEF	GOVT		TOTAL	GEF	GOVT		TOTAL	GEF	GOVT
MISCELLANEOUS																
Operations/Mobilization Rhino Units (Pus)		72,000	72,000	0		36,000	36,000	36,000		36,000	36,000	0				
Operations/Mobilization Rhino Units (Swk)		36,000	36,000	0		12,000	12,000	12,000		12,000	12,000	12,000				
Aerial Tracking of Radio-Collared Rhino (Sbh)		108,000	48,000	60,000		36,000	24,000	12,000		36,000	12,000	24,000				
Reporting		6,000	3,000	3,000		2,000	1,000	1,000		2,000	1,000	1,000				
Component Total		222,000	159,000	63,000		86,000	73,000	13,000		86,000	61,000	25,000				
OPS Cost		60,000	60,000	0		20,000	20,000			20,000	20,000					
Component Total		60,000	60,000	0		20,000	20,000			20,000	20,000					
GRAND TOTAL		2,057,000	1,000,000	1,057,000		1,050,000	691,000	359,000		559,000	208,000	351,000			448,000	301,000

ANNEX I
PRELIMINARY WORK PLAN

Indonesia Objective 1: To enhance the capabilities of PHPA and related wildlife agencies to arrest and reverse decline in rhino numbers due to poaching.

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY	SCHEDULE (IN 3-MONTH INTERVALS)															
		3	6	9	12	15	18	21	24	27	30	33	36				
OUTPUT 1.4 Reduction of poacher activity																	
<u>Activities</u>																	
1.4.1 Intensive patrolling to detect traps and intruders	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.2 Surveillance of traps to detect poachers	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.3 Destruction of traps	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.4 Intelligence operations	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.5 Protection of natural resources as well as rhino	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.6 Close coordination with other park staff	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OUTPUT 1.5 Better assessment of rhino populations																	
<u>Activities</u>																	
1.5.1 More intensive/extensive surveys	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.5.2 Improvement of survey/census methods	Rhino Units		X		X		X		X		X		X		X		X
1.5.3 Systematic data treatment system	Rhino Units					X	X		X		X		X		X		X
1.5.4 GIS rhino database	RCO					X	X		X		X		X		X		X
OUTPUT 1.6 Adaptive refinement of strategy																	
<u>Activities</u>																	
1.6.1 Incorporate data into GIS database	RCO					X	X		X		X		X		X		X
1.6.2 Continue PHVA process	RCO, PHPA				X								X				X

ANNEX I
PRELIMINARY WORK PLAN

Malaysia Objective 1: To enhance the capabilities of PHPA and related wildlife agencies to arrest and reverse decline in rhino numbers due to poaching.

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY	SCHEDULE (IN 3-MONTH INTERVALS)												
		3	6	9	12	15	18	21	24	27	30	33	36	
OUTPUT 1.1 Improved management and coordination mechanisms														
<u>Activities</u>														
1.1.1 Activation or reactivation of Rhino Conservation Officers	DWNP, DW, DF	X												
1.1.2 Appointment of RCOs as GEF Project Managers	UNDP, DEPTS.	X		X										
1.1.3 Appointment of Field Operation Consultant (Peninsula/Sarawak)	DWNP, DF	X												
1.1.4 Appointment of Associate Professional Officer (Sabah)	DW	X												
1.1.5 Appointment of AsRSG Program Officers as Project Supervisors	UNDP	X												
1.1.6 Assistance and advice for Rhino Conservation Officers	Rhino Ofcs, Conslts	X	X		X	X								
1.1.7 Adaptive adjustment of structures					X									
OUTPUT 1.2 Organization, training, operation of rhino units														X
<u>Activities</u>														
1.2.1 Assignment of rangers to rhino units	DWNP, DW, DF	X	X											
1.2.2 Training of members of rhino units	Rhino Ofcs, Conslts		X	X	X									
1.2.3 Provision operational equipment and facilities	RCOs thru Depts.	X	X											
OUTPUT 1.3 Creation of core trainers for further rhino team training														
<u>Activities</u>														
1.3.1 Training of rhino units/field coordinators to be trainers	Rhino Ofcs, Conslts			X										X

**ANNEX I
PRELIMINARY WORK PLAN**

Malaysia Objective 1: To enhance the capabilities of PHPA and related wildlife agencies to arrest and reverse decline in rhino numbers due to poaching.

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTY	SCHEDULE (IN 3-MONTH INTERVALS)												
		3	6	9	12	15	18	21	24	27	30	33	36	
OUTPUT 1.4 Reduction of poacher activity														
<u>Activities</u>														
1.4.1 Patrolling to detect traps and intruders	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.2 Surveillance of traps to detect poachers	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.3 Destruction of traps	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X
1.4.4 Intelligence operations	Rhino Units	X	X	X	X	X	X	X	X	X	X	X	X	X
OUTPUT 1.5 Consolidation of rhino into IPZs														
<u>Activities</u>														
1.5.1 Location of isolated rhinos	Rhino units		X	X	X	X	X	X	X	X	X	X	X	X
1.5.2 Capture of isolated rhinos	Rhino units		X	X	X	X	X	X	X	X	X	X	X	X
1.5.3 Radio telemetry of translocated rhino	Rhino Ofs/Teams		X	X	X	X	X	X	X	X	X	X	X	X
OUTPUT 1.6 Better assessment of rhino populations														
<u>Activities</u>														
1.6.1 More intensive/extensive surveys	Rhino units		X	X	X	X	X	X	X	X	X	X	X	X
1.6.2 Improvement of survey/census methods	Conslts, Rhino Ofs		X		X									
1.6.3 Systematic data treatment system	Rhino Ofs/Teams													
1.6.4 GIS rhino database	Rhino Ofs/Teams													
OUTPUT 1.7 Adaptive refinement of strategy														
<u>Activities</u>														
1.7.1 Incorporate data into GIS database	Rhino Ofs.					X						X	X	X
1.7.2 Initiate PHVA workshop/process	Rhino Ofs, Conslts		X											X

ANNEX II: SCHEDULE OF PROJECT REVIEWS, REPORTING, AND EVALUATION

To be prepared by project management as an attachment to the project document at the outset of project operations.

ANNEX III: STANDARD LEGAL TEXT FOR NON-SBAA COUNTRIES

Guidance from UNDP, the Regional Representatives and/or Headquarters is required and requested for completion of this Section.

ANNEX IV: TRAINING PROGRAMME

Training is a central and critical aspect of this project.

- Most of the training will occur on the job. This training involves all levels of the rhino conservation programme.
- In both Indonesia and Malaysia, the Rhino Conservation Officers, one in Peninsula, will receive collegial training from the various consultants provided.
- Extensive on-the-job training will be provided to the rhino protection units (conservation teams) from the Consultants and from the Rhino Conservation Officers. This training will include: antipoaching methods, census and survey techniques, community outreach approaches.
- In Indonesia, in-service training to provide each of the rhino protection units with a PPNS certificate to enable them to carry guns and arrest people will occur at Government expense.
- The Rhino Conservation Officers will also receive training in the form of short courses in Geographic Information Systems (GIS).
- Sabah requires additional training for a staff wildlife veterinarian in capture and translocation methods. A modest amount of the GEF funds are requested for this purpose. At this point, the optimal program for such training is still being formulated (e.g. (1) abroad in the U.S., Africa, or elsewhere in Asia or (2) in Sabah with experts from abroad visiting there. In either case, it is anticipated that matching funds at least equal to the amount proposed from GEF can be obtained.
- The Population and Habitat Viability Analysis Workshop(s) to be conducted in Malaysia will also provide in-service and on-the-job training for all levels of the rhino conservation staff.

ANNEX V: EQUIPMENT REQUIREMENTS - INDONESIA

<u>Description</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Various Field Equipment	10 sets	3,300	33,000
4X4 WD Vehicles	2	22,500	45,000
5 Motor Bikes	3	1,333	4,000
486 Computers	3	2,500	7,500
Computer Printers	3	500	1,500
Facsimile Machine	1	1,500	1,500
Photocopier	1	2,500	2,500
Construction:			
Camp for Mobile Unit	1	6,000	6,000
Camps for Rhino Protection Units	9	3,000	27,000
GRAND TOTAL - INDONESIA			\$ 129,000

ANNEX V: EQUIPMENT REQUIREMENTS - MALAYSIA

Peninsula

<u>Description</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Field Equipment	10 sets	1,000	10,000
Capture Equipment/Supplies			15,000
GIS System	1	10,000	10,000
4X4 WD Vehicle	1	25,000	25,000
486 Computers	1	3,500	3,500
Computer Printer	1	1,500	1,500
Field Radio Systems	1	15,000	15,000
GPS/Altimeter	8	2,000	12,000
Construction: Operational Field Bases	10	5,000	50,000
Sub Total - Peninsula			\$ 142,000

Sarawak

<u>Description</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Field Equipment	5 sets	1,000	5,000
Patrol Boat	1	10,000	10,000
Field Radio Systems	1	5,000	5,000
GPS/Altimeter	1	2,000	3,000
Construction: Operation Field Bases	4	5,000	15,000
SubTotal - Sarawak			\$ 38,000

ANNEX V: EQUIPMENT REQUIREMENTS - MALAYSIA

Sabah

<u>Description</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
Field Equipment	10 sets	1,000	10,000
Capture Equipment/Supplies			10,000
Large 4X4 WD Vehicle	1	25,000	25,000
Small 4X4 WD Vehicle	1	15,000	15,000
4X4 WD Pickup	1	20,000	20,000
Trucks Hydrlic Arm	1	50,000	50,000
Tractor (blade, hoe, trailer)	1	70,000	70,000
486 Computer	1	3,500	3,500
Computer Printer	1	1,500	1,500
Field Radio Systems	1	10,000	10,000
Radio Tracking Equipment	1 set	10,000	10,000
Radio Telemetry Collars	10	1,000	10,000
GPS/Altimeter	2	3,000	6,000
Construction: Operational Field Bases	5	5,000	25,000
Subtotal - Sabah			\$ 266,000
GRAND TOTAL - MALAYSIA			\$ 446,000

ANNEX V: EQUIPMENT REQUIREMENTS - INDONESIA AND MALAYSIA

GRAND TOTAL INDONESIA AND MALAYSIA - \$ 575,000

Justification for Procurement of Equipment Proposed for the Project.

The equipment to be procured under the Project has been essential to initiation of effective implementation of the rhino conservation strategy in a timely manner. Eventually, these items might be obtainable from governmental sources or other donors but on a time line that responds to the emergency situation for the rhino.

Indonesia

1. Two computers and printers, a facsimile machine, and photocopier are necessary to enable the Rhino Conservation Officer, the Administrative Assistant, and Consultants in Indonesia to commence operation. A vehicle is also required to enable the RCO to perform his
2. The other vehicle proposed for procurement in Indonesia will complement the 4 vehicles that PHPA is providing and UNDP funds will restore to operational condition to provide the mobility needed for operation of the rhino conservation teams. This mobility will be further enhanced in a cost-effective way by also providing 3 motor bikes; Government is expected to provide more motor bikes later.
4. Certain basic field equipment (especially GPS units and altimeters) are absolutely necessary for the rhino conservation teams to move around the forest with the accuracy and swiftness required for effective anti-poaching activity.
5. The construction of operational base and forest camps in Indonesia is required to enable the rhino conservation teams to operate effectively in the field for extended periods of time. At this time, PHPA can provide operating but not construction funds for these bases, which are needed now.

Malaysia:

1. Two of the 4-WD Drive vehicles are necessary for the Rhino Conservation Officers to permit them to effectively coordinate and facilitate the rhino teams. The respective wildlife departments in Malaysia can at this time provide operating but not capital expenses for these vehicles.
2. The 1-ton trucks for Sabah is vital to enable rescue of isolated and imperilled rhino and their translocation into the intensive protection zones represented in the areas of operation of the rhino conservation teams. An additional 4X4 Pickup is needed in Sabah to assist these operations, e.g. to collect browse for translocated rhino while in temporary custody. Finally a small 4X4 WD drive vehicle is needed for the radio-tracking of rhino equipped with transmitter collars. A tractor is also needed in Sabah to assist these operations.
3. In Sarawak, the terrain in rhino habitat is such that a boat is more effective than a vehicle for movement of the rhino teams.
4. GIS software is needed to institute the rhino data base.
5. The Rhino Officers in Peninsula and Sabah need a 486 computer to institute the GIS rhino data-base; it is the hope that the sabah system can also serve Sarawak where the rhino numbers are lower and their range more limited.
6. The rhino protection units/conservation teams in Malaysia require basic field operating equipment (GPS, altimeters, tents, etc.) to enable immediate deployment of the 70 rangers that the wildlife departments are committing.
7. Improved field radio capabilities are also immediately needed if the rhino team are to be activated in response to the rhino emergency.
8. Radio tracking equipment including radio collars are needed to permit post-release monitoring of translocated rhino.
9. The construction of operational bases in Malaysia is required to enable the rhino conservation teams to operate effectively in the field for extended periods of time. At this time, the departments of wildlife can provide operating but not construction funds for these bases, which are needed now.

ANNEX VI. JOB DESCRIPTIONS

INDONESIA

Rhino Conservation Officer - (36 Months)

This person will:

- Coordinate and facilitate implementation of the Indonesian Rhino Conservation Strategy and Action Plan.
- Serve as the Project Manager for the GEF Project
- Coordinate and facilitate the work of all governmental and non-governmental parties involved in the project.
- Assist in recruitment, training, and supervision of the Rhino Protection units.
- Compile the GIS database for rhino.
- Supervise development of the intensive protection and management (IMC) programs for rhino.
- Collaborate with YMR and AsRSG in developing the strategic funding plan as well as preparing and presenting proposals to potential donors for the rhino conservation strategy and action plan.
- Represent Indonesia on all rhino conservation matters in the global conservation community.

Administrative Assistant to Rhino Conservation Officer - (36 Months)

The Program Officer of YMR will provide this function. The Administrative Assistant will:

- Collaborate on coordination of the Project with the RCO and consultant(s).
- Be responsible for all administrative and accounting functions for the Project.
- Collaborate with the AsRSG Supervisors to produce full accounts and reports for the Project.
- Participate with the AsRSG Supervisors to develop the strategic funding plan for the conservation strategy.
- Work closely with the Community Outreach Consultants to develop the community outreach and development programs.
- Act as Secretary of the Rhino Conservation Advisory Board for PHPA.

Field Operations Consultant - (18 Months)

This person will

- Provide technical advice on anti-poaching and monitoring advice.
- Be intensely involved in the recruitment, training, and guidance of the rhino protection units.
- Advise on census and survey methods and on the development of a systematic and scientific database.

Candidates for this position must have extensive experience with rhino research and management in the field in Southeast Asia. The time of this consultant will be distributed over the three years of the project as indicated in the work plan. *It may be desirable to divide this consultancy among two or more persons.*

Overall Project Supervisors (AsRSG) - (6 Months)

Program Officers (there are currently two) from the IUCN/SSC Asian Rhino Specialist Group (AsRSG) will provide the overall supervision for the Project. They will collaborate closely with the Rhino Conservation Officer, PHPA, and YMR staff to facilitate and coordinate the Project. They will report to UNDP and to the Chair of the AsRSG.

Specific functions will be to:

- ensure the timely implementation of all specific activities mentioned in this document.
- ensure timely production of reports.
- be ultimately responsible that project finances and equipment are being used as stipulated by the project.
- Collaborate on development of the strategic funding plan as well as to identify and approach target donors to contribute.
- Assist with continuation of the PHVA process for rhino in Indonesia.

The two AsRSG Program Officers will divide responsibilities and time in Indonesia as appropriate through consultations with PHPA, YMR, and UNDP. The 6 month time commitment will be distributed over the three years of the project as indicated in the work plan.

ANNEX VI. JOB DESCRIPTIONS

INDONESIA

Community Outreach Consultant - (6 Months)

This person will work with the Rhino Conservation Officer, the consultants and the rhino protection units to develop the community outreach program. In particular, the person will work on various questionnaires, leaflets, posters. The person will also collaborate on formulation of plans for income generation activities related to rhino conservation.

ANNEX VI. JOB DESCRIPTIONS

MALAYSIA

Rhino Conservation Officers - (Peninsula Malaysia 36 Mos.; Sabah 18 Mos.; Sarawak 18 Mos.)

These persons will:

- Coordinate and facilitate implementation of the Indonesian Rhino Conservation Strategy and Action Plan.
- Serve as the Project Managers for the GEF Project in their respective regions of Malaysia
- Coordinate and facilitate the work of all governmental and non-governmental parties involved in the project.
- Represent Malaysia on all rhino conservation matters in the global conservation community.
- Assist in recruitment, training, and supervision of the Rhino Protection units.
- Compile the GIS database for rhino.
- Lead the capture of isolated rhino to be rescued for translocation into intensive protection zones or intensive management centers.
- Direct the program of radio telemetry on translocated rhino.
- Supervise development of the intensive protection and management (IMC) programs for rhino.
- Collaborate with AsRSG in developing the strategic funding plan as well as preparing and presenting proposals to potential donors for the rhino conservation strategy and action plan.

Field Operations Consultant - (6 Months)

This person will provide technical advice on anti-poaching and monitoring advice. As such the person will be intensely involved in the recruitment, training, and guidance of the rhino protection units. The person will also advise on census and survey methods and on the development of a systematic and scientific database. Candidates for this position must have extensive experience with rhino research and management in the field in Southeast Asia. The time of this consultant will be distributed over the three years of the project as indicated in the work plan.

Associate Professional Officer - (36 Months - Sabah)

This person will assist the Rhino Conservation Officer with various functions, including:

- extensive field surveys of rhino's range to locate rhino
- systematic collection of data relevant to rhino conservation and its incorporation into a GIS database.
- censusing and monitoring of rhino populations, including help with radio-tracking.
- capture and translocation of isolated ("doomed") rhino.
- training Wildlife Department Staff in the above techniques for rhino conservation.
- suggesting modifications of procedures specified in the rhino conservation plan as appropriate.

Community Outreach Consultant - (12 Months)

This person will work with the Rhino Conservation Officer, the consultants and the rhino protection units to develop the community outreach program. In particular, the person will work on various questionnaires, leaflets, posters. The person will also collaborate on formulation of plans for income generation activities related to rhino conservation.

ANNEX VI. JOB DESCRIPTIONS

MALAYSIA

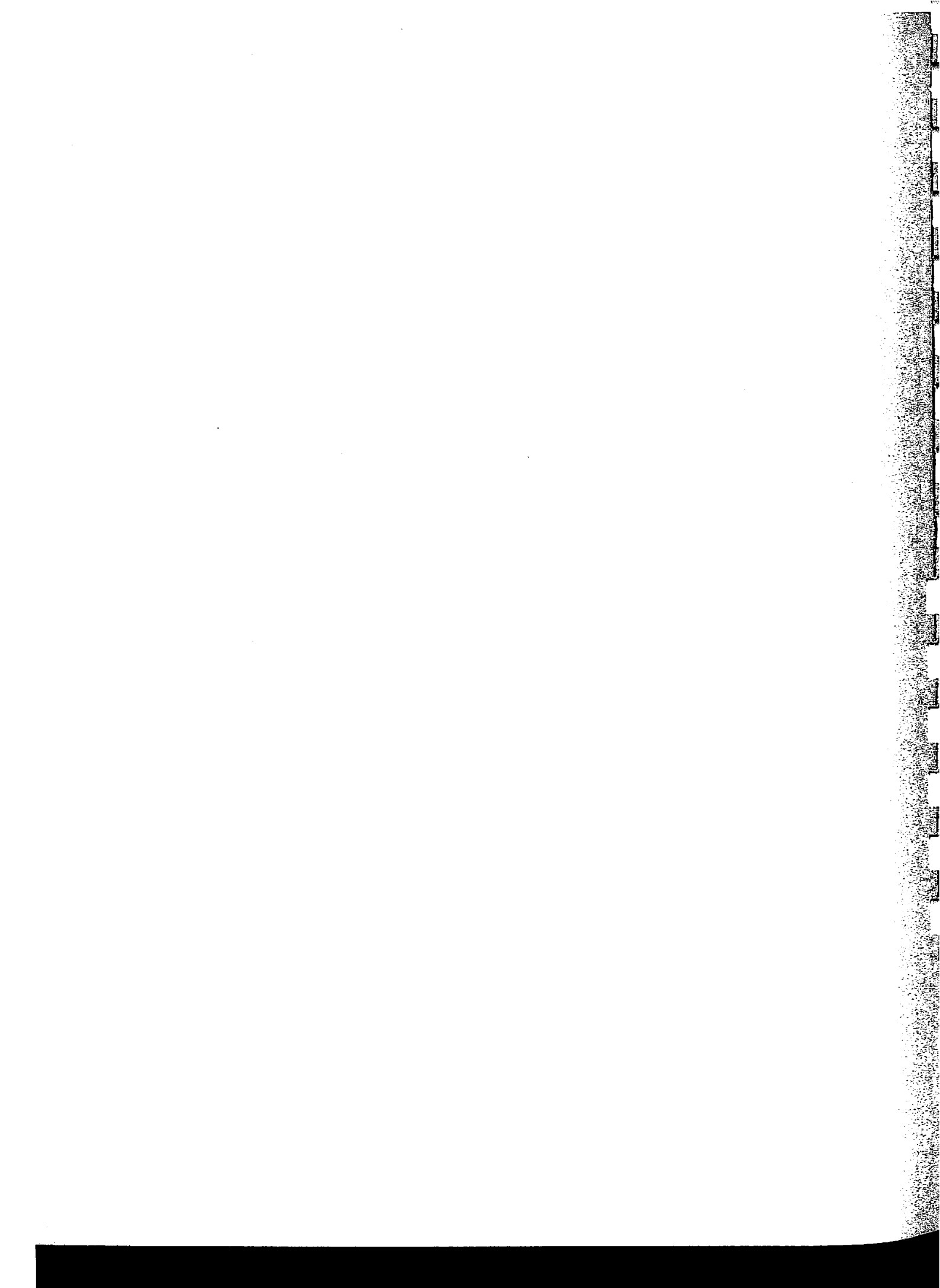
Overall Project Supervisors (AsRSG) - (6 Months)

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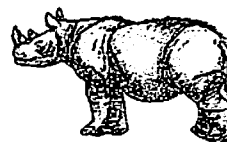
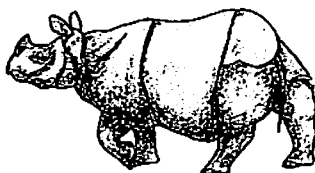
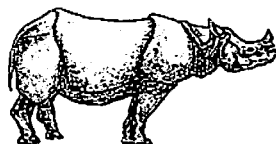
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- ensure the timely implementation of all specific activities mentioned in this document.
- ensure timely production of reports.
- be ultimately responsible that project finances and equipment are being used as stipulated by the project.
- Collaborate on development of the strategic funding plan as well as to identify and approach target donors to contribute.
- Assist with continuation of the PHVA process for rhino in Indonesia.

The two AsRSG Program Officers will divide responsibilities and time in Indonesia as appropriate through consultations with PHPA, YMR, and UNDP. The 6 month time commitment will be distributed over the three years of the project as indicated in the work plan.



IUCN SSC ASIAN RHINO SPECIALIST GROUP



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15 March 1994

TO: Jasmi Abdul, Patrick Andau, Abang Kassim, Mohd Khan, Mohd-Tajuddin Abdullah, John Sale

COPIES: Carl-Erik Wiberg and Minna Chiew

FROM: Tom Foose

SUBJECT: 2ND DRAFT OF S.E. ASIAN RHINO GEF PROJECT DOCUMENT

En route to you via DHL is the second draft of the GEF Project Document. In order to expedite the process, I am assuming the liberty of providing a copy directly to the UNDP Regional Office in Kuala Lumpur with the caveat that it will probably be further revised by the Malaysian P.A. Mission team.

You should all receive the document by Tuesday 15 March. If you do not, please contact me by fax immediately.

This second draft attempts to incorporate as much as possible of the feedback received both from Malaysia and Indonesia on the previous draft.

Concerning the Malaysian part, I believe I have been able to incorporate most of what Peninsula Malaysia advised and much of what Sabah proposed. There may still need to be a meeting of the P.A. Mission team to reconcile remaining points. There presumably also needs to be a meeting for the P.A. Mission team and the Regional UNDP Office can finalize a document that could go to UNDP Headquarters in New York.

Presumably submission to UNDP Headquarters in New York is the course of action from here forward, although I still am operating without little guidance and no feedback from UNDP.

In memos of 5, 18, and 23 February, Mohd Khan had informed me that EPU had approved the P.A. Mission and encouraged me to contact Mrs. Minna Chiew of the Regional Office UNDP Office in Kuala Lumpur. I tried to do so via telephone several times without success. A fax of 17 February apparently transmitted successfully according to my machine, but I have had no reply.



SPECIES SURVIVAL COMMISSION

IUCN
The World Conservation Union

The Indonesian P.A. Mission team is again requesting and recommending that I visit Jakarta to facilitate finalization of the Project Document process on their side. They propose that I arrive in Jakarta on 31 March with a final review meeting of the Indonesian P.A. Mission team and the Regional UNDP Office on 2 April and reportedly an official signature session on 4 April of the Project Document. This Document could then be submitted to UNDP headquarters in New York.

My ability to travel to Indonesia will of course depend on receiving a contract with travel support from UNDP. This contract will only be possible if the P.A. Mission has indeed been approved. In this regard, any information that any of you can provide, especially Mr. Wiberg and/or Mrs Chiew, will be most appreciated.

If my attendance at meetings in Malaysia on the GEF Document are also appropriate or required, it would seem most convenient if I could do it in conjunction with a visit to Indonesia.

Hence, might I inquire what meetings in Malaysia are appropriate:

- (1) Among members of the P.A. Mission team?
- (2) Between the P.A. Mission team and the Regional UNDP Office?
- (3) Any sessions with representatives of EPU?

Unfortunately, if I travel to Indonesia at the time they are requesting, I have to be back in the United States on 6 April. If any or all of the meetings mentioned above for Malaysia are useful and appropriate, is it possible that they could occur 28-30 March. If these dates are not possible, then I would have to try to return to Malaysia later in April (e.g. sometime between 18 and 29 April). My great concern is that these dates are very late relative to the 30 June 1994 "drop dead" deadline.

Please let me know what you think as soon as possible (no later than Friday if you can.)

Thanks so much.

cc: Y. Zhou
N. Noble

Appendix 5

GLOBAL ENVIRONMENT FACILITY

**MATERIAL FOR
BIODIVERSITY CONSERVATION
AN ANALYTIC FRAMEWORK**

Third Draft

November 1992

Scientific and Technical Advisory Panel

This document is the outcome of a meeting of the Ad-Hoc Working Group on Biological Diversity (AWGB) in London, July 1-3 1992, subsequent comments by members of the AWGB, members of STAP and specially invited reviewers. A further revision has been made in light of discussion at the STAP meeting, Cancun, Mexico, September 1992. The document is the work of the Working Group and not of any single author.

The document is due for further change with respect to the scientific input. It is recognised that this is not adequate at the moment.

1 BACKGROUND

The Global Environment facility (GEF) is charged with investing in the protection of biodiversity where those investments generally:

- a) do not yield net domestic benefits to the host country without GEF assistance, but which
- b) yield net 'global benefits'. GEF also has the capability to invest in contexts where there are net domestic benefits, where the global benefits are significant, and where there is an institutional obstacle to the investment taking place without GEF assistance.

Where countries not secure net domestic benefits without GEF assistance, it is the process of GEF funding that converts that situation to one where they do secure net domestic benefits.

'Benefits' in this context refer to all the gains - monetary or otherwise - that accrue from biodiversity conservation; and costs to all the losses - monetary or otherwise - that are involved in the process of conservation, including the forgone benefits of the land (or water) use that is sacrificed through conservation. The issue of measurability is addressed later.

As the GEF enters its operational phase, it will require operational criteria for selecting projects in the fields of biodiversity, global warming, and international waters; and also forest resources and desertification. The focus of the current document is on the development of operational criteria for deciding on investments in biodiversity.

There are five potential uses of such criteria:

- a) to help the Participants' Meeting to define more precisely general GEF policies;
- b) to serve as guidelines for project preparation for countries wishing to submit GEF project proposals;
- c) to guide the implementing agencies in project development;
- d) to provide an analytic framework to help STAP in its own review of GEF projects;
- e) to help define the policies to be followed eventually by the Convention on Biodiversity.

In order to define whether or not a project fits this 'investment window', it is essential to have some idea of national and global benefits. Any resulting indicator(s) of benefits can then be related to the costs of the investment. The resulting cost-benefit (where costs and benefits are in monetary terms) and cost-effectiveness indicators (where benefits are expressed in non-monetary units) then provide some guidance on the value-for-money in GEF biodiversity protection expenditures.

However desirable it is to protect all biodiversity, it is not feasible to do so. There are limited resources available to GEF, just as there are to other agencies involved in biodiversity protection. The case for expanding those funds can be assisted by showing that the economic benefits of biodiversity protection outweigh the costs. However, it is not practical for every GEF project to incorporate the full range of economic benefits into a full cost-benefit analysis. Moreover, for the foreseeable future, the demand for GEF funds is certain to outstrip the funds committed by donors.

For this reason it is vital to develop physical indicators of project benefits for use in cost-effectiveness analysis. Such analyses would then provide scientific criteria for ranking the numerous projects competing for limited funds. **Cost-effectiveness is therefore vital for achieving maximum biodiversity protection.**

2 WHY PROTECT BIODIVERSITY ?

The signing of the Convention on Biological Diversity at Rio in June 1992 indicates that signatory countries (over 150 already) accept the goal of biodiversity protection (BP). Rationales for protection are not therefore strictly required, but may still be useful. They can be expressed in terms of:

Insurance values. Reductions in biodiversity increase the risk that substitutes will not be found for existing or new genetic varieties used for the production of food, medicines etc. Protecting biodiversity therefore has an insurance value. This is sometimes referred to as **option value**.

Information values. Information about the uses of biodiversity changes through time in two ways: **exogenously** so that chance discoveries enhance the value of biodiversity, and **endogenously** through the capture of that 'endemic knowledge' that local communities have about their biodiversity. This is a mix of what has been called **quasi option value** and **direct use values** (see below).

Direct use values. These are the values arising from the direct use and appreciation of biological diversity. Included here are the cultural, religious and anthropological values accruing to individuals at the domestic and worldwide level.

Indirect use values. These are the values that biodiversity generates for humankind but which are not directly consumed, e.g. the functioning of biogeochemical cycles upon which human life depends.

Together, direct and indirect use values define **use value**.

Existence value. This is the value, as perceived by individuals, of the biodiversity even though it is not used and even though options relating to its future use are not valued. Existence value may capture many motives for valuation: some concept of stewardship, some idea of the 'intrinsic rights' of non-human systems to exist, empathy, sympathy etc.

Bequest value. The value to the individual from knowing that a particular environmental asset is being passed on to that individual's descendants, or to future generations generally.

The underlying economic rationale for protecting biodiversity (based on the human-oriented approach) is therefore that the sum of use, option and existence values is positive and may be substantial relative to the alternative uses of the land and/or water base of the ecosystem.

3 THE LINK BETWEEN LOCAL AND GLOBAL BENEFITS

While the GEF 'investment window' is the domain of projects where there are net domestic costs but net global benefits, the AWGB is clear that, unless domestic benefits exceed domestic costs by the time of project completion under GEF funding, investments in BP will not succeed on a sustainable basis. Through GEF intervention, projects must yield net gains to the 'host' country and must be perceived to yield net gains to those most directly affected by the projects - the local communities.

It is through the intervention of GEF that the apparent conflict between the investment window requirements and the need to secure net domestic benefits can be secured. In the absence of GEF intervention, there will be many projects that yield benefits to the host nation, but the costs of which exceed those benefits. Hence there is no incentive for nations to undertake these projects themselves. GEF intervention secures those projects and thus yields local benefits. The cost of securing those local benefits is lowered through the preferential financing features of GEF loans.

Investing in biodiversity will not succeed unless, from the domestic viewpoint, the benefits of so doing exceed the costs. Essentially, managing biodiversity must yield domestic benefits in excess of the benefits that would accrue from some alternative land use, e.g. agriculture, non-sustainable logging regimes etc. Ideally, this requires a comparison of the relative benefits to the nation. GEF funding is particularly relevant to contexts where the net domestic benefits are created through the GEF activity. The national interest often diverges from what is globally desirable because a nation's decisions regarding land use conversion will usually not take into consideration the global benefits of diverse biological resources. This is because those global benefits are not appropriable by the host state under existing institutions. An important role for biodiversity investment is to assist in the enhanced appropriability of these assets.

These requirements need to be compared to what actually happens. What actually happens is that private decision-making diverges markedly from the national efficiency criterion. The actual comparison is between the revenues from a given land use and the costs to the land user. Revenues are made up of receipts from selling the produce of the land (or its implied value if there is no market) and income supplements which may take many different forms - direct subsidies, subsidies to credit, machinery etc. The national standpoint compares the social costs and benefits to the nation. The land-user, however, compares private costs and benefits.

This divergence of social and private optima does much to explain why biodiversity is being reduced. Significant reductions in rates of loss could be secured without major investment in projects or programmes to use biodiversity sustainably. Those reductions could be secured by correcting the economic distortions - such as subsidies - that favour land (and water) uses that are not optimal from the social standpoint. If this is correct then one way to begin to save the world's biodiversity is to train and raise awareness in those decision-makers whose decisions affect biodiversity directly or indirectly. Such training will often need to be targeted not at those responsible directly for biodiversity, but at economic decision makers.

Investments in biodiversity protection must proceed on these two fronts: improving information so that 'wrong' decisions are not made with respect to land use by the host country, and enhancing the appropriability of the global benefits.

4 MEASURING THE BENEFITS OF BIODIVERSITY PROTECTION

[Note: this section will be revised significantly]

One indicator of the net benefits of the sustainable use of biological diversity is given by the money value of benefits minus the money value of the costs of protection. Money values reflect **willingness to pay (WTP)** by individuals for protection. In the BP context, WTP has an important role to play but it is important to understand its limitations. WTP is limited by 'private ignorance', i.e. by the extent to which individuals are informed about the importance of biodiversity. Because there is scientific uncertainty about the importance of biodiversity, and because people are not well informed about the benefits of biodiversity even where they are known, **WTP will tend to understate true benefits**. This is especially true with respect to the life-support, or 'primary value' functions of biodiversity. None the less, it is possible to investigate how WTP changes as information improves. This is no different to observing changes in WTP for everyday commercial goods as information about those goods changes (e.g. health risks, convenience etc.). WTP is 'subjective' in the sense that it measures the preferences of people. All economic values are subjective in this sense, but this 'subjectivism' is not a criticism of those values.

The current 'state of the art' in monetary benefit estimation shows that it is possible to elicit meaningful WTP estimates for changes in environmental variables as they affect human beings. However, as yet, no rigorous attempt has been made to elicit WTP for assets which have global environmental importance¹. If it proves difficult to estimate WTP, or if it is felt that a human preference based approach is too limiting, then it is necessary to add other indicators of the benefits of BP. **While monetary measures are normally referred to as measures of benefit, non-monetary indicators are referred to as measures of effectiveness.**

Hence, the indicators of relevance to investment in BP are:

- o a (monetary) measure of benefit
- o a (non-monetary) measure of effectiveness
- o a measure of cost.

For GEF interventions it is important to distinguish between **domestic (or local) and global benefits**, where domestic benefits refer to the benefits to the 'host' nation, and global benefits refer to benefits accruing to all other nations. The same benefit - e.g. tourism - can be both domestic and global in so far as local and international demand often exists for the asset. Domestic and global benefits are classified below.

¹ The exception is economic valuation of some of the effects of global warming which may be seen as a valuation of carbon cycle functions.

Domestic and Global Benefits of Biodiversity Protection

I. DOMESTIC (NATIONAL) BENEFITS

1. Species and ecosystems used in the local subsistence economy (fruits, wildmeat, medicinal plants etc.), or that are of national commercial value (non-timber forest products, 'ecotourism', etc.)
2. Ecosystem functions that support or protect local or national economic activity and/or cultural heritage, e.g. watershed protection, nutrient cycling, predator-prey relationships, specific ecosystems related to cultural use values.
3. Species and genepools that preserve future options for local biotechnological research (particularly crop breeding and forest tree improvement), domestication for food and medicinal purposes, and evolutionary change.
4. Species and ecosystems with existence (non-use) values determined by such factors as their cultural importance, ethical regard and charismatic nature.

II. GLOBAL BENEFITS

1. Diverse productive resources are themselves of benefit at the global level because they provide insurance for the current harvest. As the current production portfolio becomes more and more specialised in fewer and fewer biological resources, the prospects for crop failures increases. Currently harvestable production derived from diverse gene pools provides insurance in the current year against major losses of biological productivity.
2. Species and ecosystems of international economic importance - either for ecotourism, research, recreation etc., or of international legal standing - such as RAMSAR and World Heritage sites. International legal standing may be taken as an attribution to the site of international economic importance, although there is no necessary equivalence.
3. Ecosystem functions of regional or global importance such as carbon storage and transboundary air and water functions.
4. Species and genepools that preserve future options for biotechnological research or value outside the project (particularly agricultural and pharmaceutical research), domestication and evolutionary change.
5. Species and ecosystems with existence values that accrue to other countries or the global community as a whole.

Suggested indicators of effectiveness are:

- species richness (a measure of diversity): a convenient surrogate is the number of bird species due to the comparative ease of identification and measurement;
- species endemism - the number of species endemic to the biogeographical region that are in the area of the project. This is well known for plants and fairly well known for animals;

Appendix 5: Analytical Framework for Biodiversity

- **globally threatened species** - the number of globally threatened species that are in the area;
- **species of global importance** -i.e. the number of species related to domestic or harvested forms;
- **cultural importance** - plants or animal materials used for decoration or worship, or consumed on particular occasions, or providing symbolic representations¹; sites, structures and remains of archaeological, historical, religious, cultural or aesthetic value (material cultural heritage, or, in UNESCO terms, 'cultural property');
- **economic importance** - where economic benefit measures are not available, indicators of economic value are relevant, e.g. revenues, significance to local nutrition etc.

As far as possible, each has to be in the context of **local, national, regional, global dimensions**.

Richness and endemism are measurable. Diversity (of ecosystems) may not be (in practice) measurable, but an indicator of distinctiveness might be developed in the future. In the meantime, richness is taken as a surrogate for diversity. Economic importance is measurable e.g. local market values, alternative costs if local species not used (where no markets are available). Cultural importance cannot be quantified, but can be indicated (value in religion; scientific, technological, or aesthetic significance of archaeological or historical material, etc.).

With several indicators of effectiveness it is necessary to find some way of presenting them 'in aggregate'. They could be given scores on a 1-10 scale and weighted by an indicator of importance. As yet, such a weighting scheme has not been developed. The AWPB therefore recommends that, at this stage, indicators of the above should be listed without weights or aggregation.

For GEF purposes, all projects should contain quantitative estimates of the above indicators, as far as possible. Further, **projects must indicate the extent to which these indicators will be affected (a) if the project proceeds, (b) if it does not proceed**. In turn, projects need to be placed in the context of a national biodiversity profile and the general conditions that would lead to the judgement that investment in biodiversity is worthwhile. The profile and general conditions should be reflected in a **biodiversity country study**.

All GEF projects should also, as far as possible, pass the 'local participation' test to ensure

- a) sustainability
- b) maximum global benefits potential.

¹ As examples, biodiversity sites of cultural importance include The Kayas of Kenya, The Marangs and Miomoos of Tanzania, Sango Bay Swamp in Uganda, Owabi Sanctuary of Ghana, Cutervo Cloud Forests of Peru; Sacromonte of Mexico; the Dayaks Reserves and Sacred Caves of Sarawak.

5 THE DISTRIBUTION OF BENEFITS AND COSTS

The issue of who receives the benefits and who pays the costs (the distributional issue) is critically important at two levels:

- (a) the distribution of biodiversity-related costs and benefits between rich and poor countries, and
- (b) between rich and poor within a country.

Deforestation through logging may well yield benefits which accrue mainly to a multinational company, as might the proceeds of ecotourism. The poor of the host nation may secure relatively low returns. The logging might then be argued not to benefit the poor, but the rich. The issue is complex. For example, if logging is followed by agricultural colonisation, the resulting agricultural benefits are more likely to accrue to the poor. The subsequent use of the land - say ranching - may or may not benefit the poor - many cattle ranches on deforested land are owned by the already wealthy. The problem at this stage is that it is not possible to say much by way of **quantification of distributional incidence**. Despite this, it must be borne in mind throughout that **distributional incidence matters**.

6 THE 'UNIT OF ACCOUNT'

[Note: this section will be revised significantly]

Whilst recognising the problems, the AWGB recommends that the ecosystem should be the basic 'unit of account'- the geographical unit or project focus that GEF should work with. The ecosystem approach secures a wide range of species and their habitats, facilitating inventory, monitoring, research and training programmes. The ecosystem as a unit of account encompasses and spreads responsibilities widely among public and private institutions and individuals, promoting integration and coordination. As such, overall strategies and action plans are called for. GEF criteria already establish that the separate **biogeographic realms** should be represented in the allocation of project funds. Hence the unit of account becomes the ecosystem as represented in the different biogeographical realms.¹

Focusing on ecosystems as the 'unit of account', some measure of biodiversity of each ecosystem is required, with the indicators perhaps being weighted by some measure of importance. More strictly, we require indicators of the difference in biodiversity with GEF intervention compared to the situation without GEF intervention.

¹ The major kinds of ecosystems in the world are - tropical rain forests, savannas, desert shrublands, grasslands, temperate deciduous forests, coniferous forests and tundra. The biogeographical realms are: Antarctic, Nearctic, Palearctic, Neotropical, Afrotropical, Indomalayan, Australian and Oceanian.

7 INCREMENTAL COST AND GEF DECISION-MAKING

Type 1 and Type 2 Projects

The GEF is primarily concerned with projects which, while not likely to yield net economic gains to the country in question, will yield net global benefits. These are 'Type II' projects and they are characterised by the conditions:

- (a) $C_d > B_d$
and
(b) $B_g > C_d$

where B_d = 'domestic' benefits to the country in question; C_d = domestic costs; B_g = global benefits - i.e. benefits to the world at large.

However, there may be projects where there are net domestic benefits and significant global benefits as well. These 'Type I' projects will be characterised by the conditions:

- (a) $B_d > C_d$
(b) B_g is 'large'.

In the language of GEF, the magnitude $C_d - B_d$ is the 'incremental cost'. Acceptance of Type II projects thus requires that global benefits exceed incremental cost, or

$$B_g > (C_d - B_d)$$

On rearrangement this rule is a simple cost benefit rule, i.e:

$$(B_g + B_d) > C_d$$

The rationale for focusing on Type II projects as the prime focus of GEF is straightforward. Type I projects are essentially development projects. If countries were not to achieve an excess of domestic benefits over costs, then investment would be inefficient and would not contribute to the developmental process. GEF is not part of official development assistance and is focused on global, not domestic, problems. Hence its concern is mainly with Type II, not Type I projects.

Nonetheless, there will be circumstances in which some Type I projects will be eligible. This will be particularly the case when B_g is judged to be large, so that a country's activity in that area confers significant 'external' benefits on the world at large, and for which it is legitimate to expect the beneficiary to pay.

A further case where Type I projects should be eligible is where GEF investment is expected to lower costs significantly in the future. This cost reduction may yield major global benefits if the technology in question is applied widely. In the biodiversity context it is unlikely that hard and fast rules can be given which enable the exact computation of this cost saving¹. Nor is it obvious that

¹For an algorithm which computes a modified cost benefit rule in the context of greenhouse gas reduction technologies see D.Anderson, Analytic Framework for Global Warming Control Investments, STAP 1992.

cost-reducing technologies are as relevant in the biodiversity context as they are in the contexts of global warming and even international waters.

In summary, then:

- a) GEF investments are likely to be of Type II, with occasional consideration of Type I projects;
- b) Type I projects may be eligible if:
 - there are major global benefits
 - there are significant technology cost reductions to be obtained through the GEF intervention.

As stated above, the GEF investment rules assume that benefit and costs are comparable, i.e. that monetisation is possible. If is not, then the investment criterion will become one of cost effectiveness as opposed to cost-benefit. This means that the benefit will be measured in physical units -e.g. square kilometres of habitat, quality-weighted area conserved, number of species, diversity index etc. Writing this index as I, the GEF intervention will result in some change in the index I at a cost C. Hence the cost-effectiveness indicator becomes:

I/C

Note that this measure enables a comparison between investments for a given type of system conserved. It would not be valid to use it for comparisons across different types of system. The GEF biodiversity investment portfolio must itself remain diverse and must focus conservation efforts in different systems.

Lastly, indicators of this kind do not enable us to say whether any given system is 'worth' conserving. They assume that conservation is worthwhile - as endorsed by the Rio Biodiversity Convention - and enable a ranking of investments within a given overall budget.

In summary, GEF interventions in Type II projects will require the use of one of two general rules depending on the availability of information:

- a) directly measured global benefits in excess of incremental cost;
- b) a cost-effectiveness indicator I/C within system categories.

8 TESTING FOR VULNERABILITY

[Note: this section will be revised]

Ecosystems have varying degrees of vulnerability arising from anthropogenic threats. Indicators of **vulnerability** are required which reflect the threats to the ecosystem. Vulnerability may be thought of as comprising two components: the actual threat and the resilience of the system to that threat.

Resilience could be measured by some index of species risk or number of endangered species.

Threat can be measured by indicators such as proximity to expanding urban areas; potential for commercial exploitation and growing population density; and a

pollution index. These may be combined into a vulnerability matrix of empirical and subjectively weighted measures such as species richness, human population growth rates, GNP etc.

The way in which GEF should treat vulnerability and threat (V and T) raises difficult issues. Systems under **low threat** probably require little investment; arguably, systems under very high threat -e.g biodiversity 'hot spots' - may also merit little investment if the forces threatening them are unlikely to be deterred by GEF investment. Maximum investment may therefore be devoted to systems under moderate to high threat where there are chances that investment will slow, halt or reverse biodiversity loss. This approach has its own risks, for example that countries maintaining low risk systems at high cost may feel discriminated against in terms of investment funds.

9 PROJECT VIABILITY

GEF project viability depends on:

- o **government commitment** (testable by looking at past record, actual legislation and its enforcement, whether or not a national conservation policy is in place, etc.)
- o **property rights** (is land tenure secure ? are there rights to resource use that facilitate the project or conflict with it ?)
- o **participation** (what role has the local community played in project preparation and development ?)
- o **the macro-economic context:** e.g. are incentive structures such as output and input prices compatible with the project ?
- o **the institutional context:** is there adequate institutional capacity and expertise to enforce the law ?

10 TOWARDS STAP EVALUATION CRITERIA

The previous discussion now needs to be encapsulated in sets of guidelines. The AWGB recommends that **these guidelines should be used not just by STAP, but by the implementing agencies and the originators of projects in their pre-appraisal presentations.**

The Generic Criteria

STAP's generic criteria for all pilot stage GEF projects are modified and abbreviated in Table 1 in the context of operational phase projects in biodiversity and as a pro-forma for the benefit of initiators, agencies and STAP.

Table 2 offers a set of guidelines for biodiversity projects.

Table 3 shows a sequence of steps for STAP evaluation assuming that the completed guidelines in Table 2 are available for each project.

Appendix 5: Analytical Framework for Biodiversity

Table 1

Generic Criteria for Biodiversity Projects

	Generic Criteria	No	Yes	If yes, specify
1	Is there a benefit to the global environment ?			
2	Is there a contribution to human welfare and sustainable development ?			
3	Can the project be replicated (a) in the country (b) in other countries ?			
4	Are economic and social incentives in place to secure sustainability of the project, particularly after GEF involvement ceases ?			
5	Will the project develop human and institutional capability ?			
6	Does it have a firm scientific and technical basis ?			
7	Is it, or could it be, part of a national or regional environmental programme ?			
8	Are there plans for the evaluation and dissemination of results and knowledge ?			
9	Does the project enable local communities to participate ?			
10	Does the project satisfy an environmental impact assessment ?			
	TOTAL SCORE (number of yeses/10)	X		

Table 2

Guidelines for Project Preparation

T1 IMPORTANCE OF THE ECOSYSTEM

Species Richness in Area	Number
Species Endemism in Area	Number
Globally Threatened Species in Area	Number
Globally Important Species in Area	Number
Cultural Importance of Area	Description
Economically Important Species in Area:	
Local (a) Market Values Local (b) Non-market Values	Money values Various
National (a) Market Values National (b) Non-Market Values	Money Values Various
Regional	Links to other regional ecosystems
Global (a) Use Values Global (b) Non-Use Values	Money Values Money Values
Cultural Importance of Area, or Species of Cultural Importance	

T2 PROJECT FEASIBILITY

General Description of Location

Object: To ascertain the general activities in the region that may threaten the project, raising the cost or ineffectiveness of implementation.

- o Supply map of project region with precise designation of area, its size in sq.kms, and show main lines of transport and access to region
- o Describe communities, economic activities and cultural heritage within designated area and surrounding region.

Indicators: map, description.

Population Density

Object: To ascertain the general potential for conflicts, raising cost or ineffectiveness of implementation (monitoring and compensation), and the stability of local institutions and populations.

- o Indicate population in the designated area, and in the surrounding region.
- o Indicate current rate of change in the population in the designated area, by (a) inward/outward migration, (b) indigenous population growth.

Indicators: population (numbers), population/sq.km, rates of change.

Economic Activities

Object: To ascertain specific operations in conflict with project that may introduce conflicts and/or require compensation.

- o Indicate existing economic activities in the area and in the surrounding area.
- o Identify the specific activities that will be foregone if GEF project implemented in this area, together with the lost income from these activities.

Indicators: description, economic variables.

Project Sustainability

Object: To ascertain the local and national assessment of the net benefits of the project, at time of disbursements and after completion of disbursements.

- o Indicate likely local community benefits from this project.
- o Indicate benefits flowing to the government from this project.

Appendix 5: Analytical Framework for Biodiversity

Indicators: money values, government revenues.

Political Feasibility

Object: To ascertain the institutional framework within which project will occur.

- o Is there a National Conservation Strategy: a) in place; or b) planned?
- o Indicate the national regulations that might impact on biological diversity conservation in the designated area.
- o Indicate local institutions, land tenure and resource use rights that apply in the project area.

Indicators: descriptions.

Cost of Project

Object: to ascertain cost to GEF and others of the project.

- o Indicate cost for each year of the project in local currency, and in US \$.
- o Indicate division of total cost between local contributions, GEF funds, other.

Indicators: money values.

Table 3

STAP Evaluation Procedure for Biodiversity Projects

- Step 1.** Check that all projects meet STAP generic criteria using abbreviated checklist.
- Step 2.** Classify projects into biogeographic realms.
- Step 3.** Initially compare projects within each biogeographic realm, not across realms.
- Step 4.** Check whether size of area in resulting projects is greater than some minimum viable size for populations of ecosystem components.
- Step 5.** Assess ecosystem importance using importance criteria from project preparation guidelines. Pay special attention to the indicators of global importance.
- Step 6.** Assess cost.
- Step 7.** Rank by cost-effectiveness with special reference to the global dimension. Where possible, express in units of "importance per \$ spent" (eg species richness conserved per \$, cultural heritage conserved per \$ etc.) - note that this requires a with project -without project analysis (see Para.30).
- Step 8.** Assess area vulnerability.
- Step 9.** Assess project feasibility.

TO: Mohd Tajuddin Abdullah

FAX NUMBER: 011-60-82-671-123

FROM: Tom Foose

FAX NUMBER: 1-614-228-7210

DATE: 10 July 1995

TOTAL PAGES:

6 after cover

MESSAGE:

Dear Tajuddin:

Someone once commented that he did not care what the newspapers printed about him as long as they spelled his name right. Please forgive me for misspelling your name on the previous versions of the draft contract. Discard all previous versions. Regards.

SA MBR 1-14150-12975-0

CONSULTING CONTRACT

Between

INTERNATIONAL RHINO FOUNDATION (IRF)

And

Mohd.-Tajuddin Abdullah

Under

**UNDP/GEF PROJECT RAS/94/G32
CONSERVATION STRATEGY FOR RHINOCEROS IN SOUTH EAST ASIA
(INDONESIA AND MALAYSIA)**

The International Rhino Foundation (hereinafter called the IRF) enters into this consulting contract with Mohd.-Tajuddin Abdullah (hereinafter called the Contractor) in order to obtain technical services and support for the GEF Project RAS/94/G32 - Conservation Strategy for Rhinoceros in South East Asia - Indonesia and Malaysia (hereinafter called the GEF Project) being administered by the United Nations Development Programme (hereinafter called UNDP). This GEF Project is under auspices of the Asian Rhino Specialist Group (AsRSG) of the IUCN Species Survival Commission (SSC). Therefore, the IRF enters in this Contract with the Contractor for his provision of services as an National Senior Field Operations Consultant.

1.0 Duration of Contract:

- 1.1 This contract will be renewable at 6 month intervals and may be continued for the duration of the GEF Project, 1 April 1995 to 31 March 1998.
- 1.2 The Contractor will be engaged and paid for a maximum of 3.5 person months during the period of the GEF Project.
- 1.3 Decision to renew the Contract will be based upon each 6 month evaluation of the Malaysian GEF Project and subsequent formulation of the workplan for the next 6 months. The needs of the GEF Project for services of the Contractor will therefore be determined by the Malaysian GEF Project Director and Managers (i.e., the Rhino Conservation Officers for Peninsula, Sabah, and Sarawak) as well as assessment by the IRF Program Officer.
- 1.4 Either the IRF or the Contractor may terminate this contract at the six month renewal dates or at any other time with 1 months written notice to the other signatory to this Contract.

2.0 General Conditions, Terms of Reference, Appendices:

2.1 The Contractor and IRF agree to be bound by the provisions contained in:

2.1.1. The GEF Project Document signed by the Governments of Indonesia and Malaysia and UNDP. (Appendix A)

2.1.2. The Subcontract signed between UNDP and IRF for consulting services on the GEF Project. (Appendix B).

2.1.3. Each consecutive official six-month GEF Project Work Plan signed by the Project Director in Malaysia. (Appendix C.)

2.2 The Contractor shall render consulting services as an independent contractor and not as an employee. The IRF will identify goals, objectives, schedules, and specifications; but the IRF will not determine the methods, means, and procedures used to achieve these goals, objectives, schedules, and specifications.

2.3 All services provided by the Contractor will be within the country of Malaysia unless otherwise specified by and agreed to in writing by the IRF. The IRF will consult with the Malaysian Project Managers before deciding on any modification to the venue of services.

2.4 The general terms of reference for the Contractor are:

2.4.1. Provide technical advice and assistance on rhino anti-poaching and monitoring activities to the GEF Project Manager/Rhino Conservation Officers in Malaysia.

2.4.2. Provide training from and share knowledge with the counterpart National Field Operations Consultants in Malaysia.

2.4.3. Collaborate with the GEF Project Managers/Rhino Conservation Officers, AsRSG Program Officers, and National Field Operations Consultants in formulation of detail work plans for training and supervision of the rhino protection units.

2.4.4. Collaborate with the GEF Project Managers/Rhino Conservation Officers, AsRSG Program Officers, and National Field Operations Consultants in the recruitment, training, and guidance of the rhino protection units.

2.4.5. Advise on census, survey and surveillance methods.

2.4.6. Advise and assist with development of a systematic and scientific database for rhino conservation.

3.0 Additional Responsibilities of Contractor:

3.1 Line of Authority:

3.1.1. The GEF Project Managers/Rhino Conservation Officers will assign goals and objectives to the Contractor for day-to-day operations.

3.1.2. The Contractor will be ultimately responsible to the IRF Program Officer.

3.2. Reports:

3.2.1. The Contractor will provide a monthly written report of all activities to The GEF Project Director. A copy of this report will also be provided to The IRF Program Officer.

3.2.2. The Contractor will also provide six-month and annual (if applicable) written report of all activities to the Project Manager and to the IRF Program Officer.

3.3. Medical Condition and Insurance Coverage:

3.3.1. The Contractor shall provide the IRF with a medical certificate of good health before signing the Contract.

3.3.2. The IRF will bear no responsibility or liability for any injury to, illness of, death of, or property loss by the Contractor before, during, or after the period of this Contract; and the Contractor hereby releases IRF and holds IRF harmless from any such responsibility or liability.

3.3.3. The Contractor shall be responsible for providing adequate medical, accident, and property loss insurance.

4.0 Remuneration and Payment and Other Resources:

4.1. As fees for the services performed under this contract, the IRF will pay the Contractor US \$ 150/ day or US \$3,300 per person month. A person month is defined as 22 working days. Fees will be prorated for partial months worked in any 6 month period.

4.2. In addition, the IRF will pay the Contractor \$ 50 per day in field allowance for consulting days away from the home base. A consulting day is a 24 hour period. There will be a maximum of 60 days during the period of the Project and no more than 30 days in any one year for which such allowances may be paid.

4.3. The IRF will also pay the Contractor for up to 6 within-country trips per year between Kuching and work sites in Peninsula, Sabah, and Sarawak.

4.4. The Contractor shall not do any work, provide any materials or supplies, or perform any other services which may result in any charges to the IRF in excess of the above mentioned amounts without the prior written agreement of IRF.

- 4.5. All payments to the Contractor will be in US dollars
- 4.6. Such payments by IRF will not be deemed to relieve the Contractor of its responsibilities under this Contract.

5.0 Payment and Resource Provision Schedule and Method:

5.1 The payment of fees indicated above will be paid by IRF to the Contractor as either monthly advances or monthly reimbursement to the Contractor. The IRF and Contractor will agree in advance on service periods in any month. The Contractor will provide in writing a request for the advances or reimbursements.

5.2 The payments will be made by electronic deposit to:

Account Name: Mohd.-Tajuddin Abdullah
Account Number:
Bank Name: *Need his bank information here.*
Bank Address:

5.3 Travel Expenses:

5.3.1. Costs of any air travel within the country in which services are provided will be reimbursed to the Contractor upon receipt of a monthly report documenting the dates, destinations, and purpose of travel. All requests for reimbursement of travel expenses must be accompanied by a ticket stub.

5.3.2. Ground transportation within Malaysia must be covered by the Contractor's field allowance or by vehicle operation support, for field work only, from the Governments (Federal or State) of Malaysia as their part of the GEF Project. The IRF will pay no other transportation costs for the Contractor.

6.0 Intellectual Property Rights/Media Contact:

- 6.1. The Contractor shall be entitled to intellectual property rights to use data collected by himself during the Contract for purposes of degree programs.
- 6.2. The Contractor will also be entitled to use such data for publications on the condition that if collection of such data is a collaborative endeavor, the collaborators must be included as co-authors on any publications and therefore have rights to review such publications before submission to potential publishers.
- 6.3. The IRF shall also have the right to review any publications before they are submitted for publication.
- 6.4. The Contractor will not communicate with the media about the Project without prior written approval of the IRF.

6.5. The Contractor will appropriately acknowledge the Governments (Federal and State) of Malaysia, UNDP, the GEF, the AsRSG, and the IRF in any publications or other media communication.

7.0 Liability for Misconduct of Contractor:

- 7.1. The IRF shall not be liable for any damage caused by incorrect or incomplete information provided by the Contractor to IRF or to others.
- 7.2. The IRF shall not be liable for any damage caused by misconduct by the Contractor including any violation of the laws of Malaysia.
- 7.3. The Contractor shall indemnify the IRF for all losses incurred by the IRF as a result of the Contractor's misconduct or breach of any provision of this Contract.

8.0 Special Provisions:

- 8.1. This Contract will be governed by the laws of the United States of America.
- 8.2. Disputes under this Contract will be resolved by mutual agreement or will be referred to the arbitration process stipulated in the IRF Subcontract from UNDP for the GEF Project.
- 8.3. Any notice, request, or approval required or permitted to be given or made under this Contract shall be in writing in the English language. Such notice, request, or approval shall be deemed to be duly given or made when it shall have been delivered by hand, mail, telefax, or cable to the party to which it is required to be given or made at the party's address specified below, or at such other address as the party shall have specified in writing to the party giving such notice or making such request.
- For the IRF: Dr. Thomas J. Foose
IRF Program Officer
14000 International Road
Cumberland, OH, 43732, USA
Tel: 1/614/638/2286
Fax: 1/614/638/2287
- For the Contractor: Mr. Mohd.-Tajuddin Abdullah
Universiti Malaysia Sarawak
Fakulti Sains Dan Teknologi
Jalan Dato Mohamad Musa
94300 Kota Samarahan
Sarawak, MALAYSIA
- 8.4. Amendments to this Contract must be by mutual agreement and in writing.
- 8.5. The Contractor (and not the IRF) is responsible for the payment of all taxes, if any due on amounts paid under this Contract.