ROLES AND RESPONSIBILITIES OF THE IMPLEMENTING ORGANIZATION AND JICA

Implementating Organizations (IOs)	JICA
To plan, implement, monitor and evaluate the Programme	To assist plainning, implementation and monitoring of the Programme To evaluate the Progamme jointly with Ios
To provide Programme personnell for: - Research - Protected areas management - Wildlife Corridor - Public awareness - Coordination and administration	To provide Japanese experts and volunteers in necessary techinical fields.
To provide existing facilities, equiptment and vehicles necessary for the implementation of the Programme.	To provide supplemental facilities, equipments and vehicles necessary for the implemnetation of the Programme
To secure and provide running expenses for the implementation of the Programme	To provide supplemental running expenses.
	To provide training opportunities in Japan for Malaysian Programme personnel.
The Leading Organizations of Working Groups	
To coordinate plaining, implementation, monitoring and other necessary matters among IOs in each component. To coordinate preparing progress and monitoring reports.	
Secretariat (ITBC, UMS)	
To coordinate Working Groups in plaining, implementation and monitoring of the Programme. To promote communications among Working Groups.	

Project Design Matrix (PDM) for Research Component

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah   Project Name: Research Component   Project Area: Sabah State
Duration: Japanese Fiscal Year 2002-207   Target Group: 5 Implementing Agencies   Date: 2001/7/11 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.	Loss of rare and threatened species.		
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.	1) Income of farmers above the poverty line. 5 2) Achievement of basic standard of living 5	Questionnaire of [illegible] people 5	
Project Purpose Biodiversity and ecosystems of Borneon forests and wetland in Sabah are better understood for conservation.	1) Number of publications per year by researchers. 2) Number of new species (genera etc.) described. 3) Number of identified species in collections.		
Outputs 1 Effective organisational set-up are created, enhanced and developed. 2 Research and training facilities at UMS and other agencies are developed. 3 Training for biodiversity and taxonomy is created, increased and enhanced at UMS and other agencies. 4 Biodiversity and ecosystems in the protected areas; Crocker Range Park, Tabin Wildlife Forest Reserve, Kulamba Wildlife Forest Reserve, Maliau Basin and the Lower Kinabatangan are studied and better understood. 5 Inventories and research findings are consolidated and compiled at the UMS and the relevant agencies, and to be made accessible to interested researchers, stakeholders and the public.	1 Quarterly meeting for information exchange is held by all implementing agencies. 2.1) Number of specimens stored. 2.2) Number of major research facilities. 2.3) Number of specimens in collections used for international researches. 3.1) Number of degree of Ph.D. and M.Sc. 3.2) Number of post graduates conducting researches in biodiversity and ecosystem. 4 Number of research implemented. 5 Number of recommendations to the government on conservation.		Building the capacity of [illegible] agencies in executing and managing the conservation of biodiversity and ecosystems. [illegible] efforts in [illegible] research, protection and community development for presenting to stakeholders and the public for better conservation.
Activities 1-1 Provide advice/ consultancy on designing research method. 1-2 Establish clear working links among implementing agencies. 1-3 Create communication system e.g. webpage/ newsletters to facilitate communication. 1-4 Exchange research results among implementing institutions. 1-5 Upgrade communication among various levels of research/ disciplines. 1-6 Create opportunities for periodic forums (seminars, conferences). 1-7 Hold research seminars and workshops quarterly. 1-8 Publish research journals annually. 2-1 Collect and identify specimens. 2-2 Establish a living culture collections of selected micro-biodiversity of sabah forests and wetland. 2-3 Establish reference (collection of specimens). 2-4 Make literature on taxonomy and conservation available. 2-5 Acquire relevant literature/ publication on biodiversity and related topics. 2-6 Establish database/ GIS system. 2-7 Train personnel on database/ GIS system techniques. 3-1 Provide training opportunities for research personnel. 3-2 Plan and run short term and medium term courses in Japan and UMS/ other institutions. 3-3 Provide sufficient training in biodiversity assessment. 3-4 Make and produce effective "kits" for effective teachings at various level (game warden, rangers). 3-5 Provide appropriate research methodology training. 3-6 Institutes of biodiversity get many active students. 3-7 Run taxonomic and biodiversity courses (MSc, Ph.D., BSc/ BAs. 3-8 Train technical staff for equipment maintenance and operation. 3-9 Provide training on green auditing. 3-10 Provide volunteers/ experts to supervise, i.e. fieldwork/ research. 3-11 Increase number of staff of taxonomist. 4-1 List priority research topics for each protected areas. 4-2 Secretariat sets up funding allocation to the researches on these areas. 4-3 Steering committee sets up clear and simplified research application to do research in these protected areas. 4-4 Conduct ecological and taxonomic studies on organisms in the protected areas especially on rare/ endangered species and prioritised organisms. 4-5 Identify threat and potential threat to the protected areas for public awareness and monitoring purposes. 4-6 Prepare species list of the target protected areas. 4-7 Initiate long term monitoring of species composition in relation to climate change etc. 4-8 Conduct periodical field-survey in each target protected areas. 4-9 Establish permanent research plots. 5-1 Produce a well clarified jobs and responsibilities of ITBC in order to achieve the purpose. 5-2 Train curators and data/ IT managers. 5-3 Standardise specimen management. 5-4 Establish systematic system of data management. 5-5 Establish multimedia databank (video, sound, photo) of nature in Sabah. 5-6 Establish and open database of taxonomic and biodiversity information on the internet. 5-7 Organise conferences. 5-8 Make exhibition for conservation of biodiversity in ITBC. 5-9 Organise seminars for journalists. 5-10 Present research findings at the international symposium, conference etc. 5-11 Publish books on research findings and papers. 5-12 Publish guidebooks for school children on natural environment in Sabah.	**Inputs** Expert [illegible] Training		**Preconditions**

Appendix 3

Project Design Matrix (PDM) for Public Awareness Component

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah Project Name: Public Awareness Component Project Area: Sabah State

Duration: Japanese Fiscal Year 2002-207 Target Group: People in Sabah Date: 2001/7/12 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.			
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.			
Project Purpose People of Sabah have better understanding and appreciation to the conservation of biodiversity and ecosystem.			- The public will participate in conservation of biodiversity and ecosystems in Sabah.
Outputs 1 Current issues, problems and constraints of public awareness are identified. 2 Effective general public campaign are planned and implemented. 3 Capacity of the implementing agencies are enhanced. 4 Guidelines and materials are revised and tried (implemented) in the target protected areas (Tabin Wildlife and Forest Reserve and Crocker Range Park). 5 Awareness and understanding on nature conservation is increased in the target protected areas.			
Activities 1-1 Pre-test of the study. 1-2 Conduct field survey on problems and constraints of public awareness. 1-3 Study current public awareness activities. 1-4 Conduct dialogue between villagers and implementors. 2-1 Identify target people. 2-2 Identify necessary themes for the campaign. 2-3 Formulate a strategic plan of campaign (selection of media, media, method and schedule). 2-4 Involve the policy makers/ decision makers in the campaign. 2-5 Involve the media (radio, TV, newspaper) in the campaign. 2-6 Plan campaign programmes. 2-7 Produce campaign materials. 2-8 Organise conferences and speeches, and conduct dialogues/ discussion. 2-9 Interact with international children's eco-tour to Sabah. 2-10 Conduct competitions of photography, essays and creative arts. 2-11 Create the webpage. 2-12 Analyse the result of campaign. 3-1 Train staff of implementing agencies. 3-2 To make a network to get relevant information. 3-3 Establish communication system (webpage, newsletter, etc.). 3-4 Conduct staff exchange programme.	[illegible]	**Inputs** [illegible]	**Preconditions** [illegible]

Project Design Matrix (PDM) for Research Component

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah Project Name: Research Component Project Area: Sabah State

Duration: Japanese Fiscal Year 2002-207 Target Group: 5 Implementing Agencies Date: 2001/7/11 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.	Loss of rare and threatened species.		
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.	1) Income of farmers above the poverty line. 2) Achievement of basic standard of living.	Questionnaire of various group of people.	
Project Purpose Biodiversity and ecosystems of Borneon forests and wetland in Sabah are better understood for conservation.	1) Number of publications per year by researchers. 2) Number of new species (genera etc.) described. 3) Number of identified species in collections.		
Outputs 1 Effective organisational set-up are created, enhanced and developed. 2 Research and training facilities at UMS and other agencies are developed. 3 Training for biodiversity and taxonomy is created, increased and enhanced at UMS and other agencies. 4 Biodiversity and ecosystems in the protected areas; Crocker Range Park, Tabin Wildlife Forest Reserve, Kulamba Wildlife Forest Reserve, Maliau Basin and the Lower Kinabatangan are studied and better understood. 5 Inventories and research findings are consolidated and compiled at the UMS and the relevant agencies, and to be made accessible to interested researchers, stakeholders and the public.	1 Quarterly meeting for information exchange is held by all implementing agencies. 2.1) Number of specimens stored. 2.2) Number of major research facilities. 2.3) Number of specimens in collections used for international researches. 3.1) Number of degree of Ph.D. and M.Sc. 3.2) Number of post graduates conducting researches in biodiversity and ecosystem. 4 Number of research implemented. 5 Number of recommendations to the government on conservation.		- Building the capacity of relevant agencies in executing and managing the conservation of biodiversity and ecosystems. - Integrating efforts in administration, research, protection and community development for presenting to stakeholders and the public for better conservation.
Activities 1-1 Provide advice/ consultancy on designing research method. 1-2 Establish clear working links among implementing agencies. 1-3 Create communication system e.g. webpage/ newsletters to facilitate communication. 1-4 Exchange research results among implementing institutions. 1-5 Upgrade communication among various levels of research/ disciplines. 1-6 Create opportunities for periodic forums (seminars, conferences). 1-7 Hold research seminars and workshops quarterly. 1-8 Publish research journals annually. 2-1 Collect and identify specimens. 2-2 Establish a living culture collections of selected micro-biodiversity of sabah forests and wetland. 2-3 Establish reference (collection of specimens). 2-4 Make literature on taxonomy and conservation available. 2-5 Acquire relevant literature/ publication on biodiversity and related topics. 2-6 Establish database/ GIS system. 2-7 Train personnel on database/ GIS system techniques. 3-1 Provide training opportunities for research personnel. 3-2 Plan and run short term and medium term courses in Japan and UMS/ other institutions. 3-3 Provide sufficient training in biodiversity assessment. 3-4 Make and produce effective "kits" for effective teachings at various level (game warden, rangers). 3-5 Provide appropriate research methodology training. 3-6 Institutes of biodiversity get many active students. 3-7 Run taxonomic and biodiversity courses (MSc, Ph.D., BSc/ BAs. 3-8 Train technical staff for equipment maintenance and operation. 3-9 Provide training on green auditing. 3-10 Provide volunteers/ experts to supervise, i.e. fieldwork/ research. 3-11 Increase number of staff of taxonomist. 4-1 List priority research topics for each protected areas. 4-2 Secretariat sets up funding allocation to the researches on these areas. 4-3 Steering committee sets up clear and simplified research application to do research in these protected areas. 4-4 Conduct ecological and taxonomic studies on organisms in the protected areas especially on rare/ endangered species and prioritised organisms. 4-5 Identify threat and potential threat to the protected areas for public awareness and monitoring purposes. 4-6 Prepare species list of the target protected areas. 4-7 Initiate long term monitoring of species composition in relation to climate change etc. 4-8 Conduct periodical field survey in each target protected areas. 4-9 Establish permanent research plots. 5-1 Produce a well clarified jobs and responsibilities of ITBC in order to achieve the purpose. 5-2 Train curators and data/ IT managers. 5-3 Standardise specimen management. 5-4 Establish systematic system of data management. 5-5 Establish multimedia databank (video, sound, photo) of nature in Sabah. 5-6 Establish and open database of taxonomic and biodiversity information on the internet. 5-7 Organise conferences. 5-8 Make exhibition for conservation of biodiversity in ITBC. 5-9 Organise seminars for journalists. 5-10 Present research findings at the international symposium, conference etc. 5-11 Publish books on research findings and papers. 5-12 Publish guidebooks for school children on natural environment in Sabah.	**Inputs** Expert Equipment Training		**Preconditions**

Project Design Matrix (PDM) for Protected Area Component

Annex 2-2

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah Project Name: Protected Area Component Project Area: Crocker Range Park and Tabin Wildlife Forest Reserve Duration: Japanese Fiscal Year 2002-207 Target Group: Implementing Organisations and Local People living in and around the Project Area Date: 2001/7/16 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.	Loss of rare and threatened species.		
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.	1) Income of farmers above the poverty line. 2) Achievement of basic standard of living.	Questionnaire of various group of people.	
Project Purpose Effective management models/ options for protected areas are developed.	Number of options presented in essential fields: -communication -public relation -fire prevention.		
Outputs 1 Conflicts between local communities and protected area management are reduced. 2 Management plan is prepared/ reviewed. 3 Capacities of the implementing organisations in managing the target protected areas are increased. 4 The target protected areas are better managed. 5 Experience/ lessons learned through the implementation of the management plan are analysed and compiled.	1.1) Decrease in the number of the compound (fines) issued to the villagers. 1.2) Increase income (e.g. From the eco-tourism) from the target protected areas. 1.3) Community conflict/ disturbance within the target protected areas are reduced to -%. 2. Management plan is endorsed. 3.1) Number of staff trained. 3.2) Number of science papers on conservation biology by implementing agencies. 3.3) Performance (productivity) of the staff. 4.1) Number of tourist. 4.2) Community conflict/ disturbance within the target protected areas are reduced to -%. 4.3) Number of facilities. 4.4) Complains from the public is reduced. 4.5) Number of flagship animals and plants in the target protect INFO 4.6) Forest fire is reduced. 5 Percentage of Sabah rangers who appreciate the handbook.		
Activities 1-1 Identify threats by communities to the target protected areas. 1-2 Conduct workshop/ dialogue/ discussion with communities to identify the people's need. 1-3 Analyse socio-economic aspects of local communities. 1-4 Identify the causes of the conflicts. 1-5 Study on the alternative livelihood of the villagers. 1-6 Plan to resolve conflict and implement the plan. 1-7 Mobilise the resources of the other governmental agencies. 1-8 Employ members of local communities in the target protected. 1-9 Involve the local people in tourism other income generating activities. 1-10 Provide enough publication on biodiversity and conservation for local community.* 1-11 Conduct training for local communities to be tour guides in the target protected areas. 1-12 Assist and facilitate for young people/ children to be better in education (adopt a village concept). 1-13 Appoint honorary rangers from among the local communities as informers. 1-14 Formulate and implement policy of giving priority to the local communities in employment and other opportunity in the target protected areas. 1-15 Conduct awareness programme for community. 2-1 Collect necessary data and information for preparation of the management plan. 2-2 Document traditional knowledge. 2-3 Refer the results of the Research Components (i.e. inventory of flora and fauna of the target protected areas). 2-4 Establish GIS/ database system in the target protected areas. 2-5 Establish zoning scheme of the target protected areas. 2-6 Problems and constraints of the conservation in the target protected areas are identified. 2-7 Identify potential buffer zone areas around the target protected areas. 2-8 Prepare fire prevention strategy. 2-9 Development of the criteria for estimating the effectiveness of management plan. 3-1 Identify training needs. 3-2 Prepare training curriculum. 3-3 Train field staff of the target protected areas. 3-4 Organise training and seminars for staff or the HQs of the implementing organisations. 3-5 Provide degree/ post-graduate study opportunities for staff of implementing organisations at UMS and other universities. 3-6 Staff exchange programme in related protected areas in Japan. 3-7 Provide exposure/ study tours for the staff of the target protected areas to other sites. 3-8 Review training effect and reflect the result to training plan. 3-9 Strength coordination mechanisms among the implementing organisations. Need more detail activities. 4-1 Implement the management Plan, e.g. -Effective flood control is implemented. -Research station in Crocker Range Park is established. -Ecotourism is encouraged and implemented. -Public awareness programme for local people is developed and implemented.* -Sub-station for control and monitoring is established. -Rafflecia conservation plan are established. -Education centre in Crocker Range Park is established.* -Networking among protected areas is established. -Communication system for control and monitoring of the protected areas is enhanced. -Long term climate monitoring research/ activities are conducted/ established. -Attractive facilities for eco-tourism (like canopy walk, canopy gondola) are built, which are able to use for monitoring. -Cooperate with other governmental authorities not to approve destructive land-use adjacent to the park boundary. -Conduct long-term ecological/ social monitoring. 5-1 Conduct interim evaluation of the implementation of the management plan. 5-2 Review the management plan. 5-3 Hold seminar/ conference/ discussion to evaluate progress and success. 5-4 Produce monographs of management plan. 5-5 Compile protected management options as a handbook.	**Inputs** - staff - vehicle - equipment and facilities - JICA/ JOCV volunteers - financial assistance	- Laws can be amended to allow collection of biotechnological resources from the target protected areas. - Resource use in the park is not a critical conflict. **Preconditions**

*: maybe incorporated in the Public Awareness Component.

Project Design Matrix (PDM) for Wildlife Corridor Component **Annex 2-3**

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah Project Name: Wildlife Corridor Component Project Area: Potential Wildlife Corridors in Sabah
Duration: Japanese Fiscal Year 2002-207 Target Group: Implementing Organisations and Local Communities involved in Wildlife Corridors Date: 2001/7/16 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.	Loss of rare and threatened species.		
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.	1) Income of farmers above the poverty line. 2) Achievement of basic standard of living.	Questionnaire of various group of people.	
Project Purpose Identified areas for corridors for wildlife are prepared for protection in Sabah	1) Number/ area of the new corridor(s) prepared as wildlife reserve/ sanctuary. 2) Number of landowners supporting the idea of the corridor is increased.		
Outputs 1 Pilot corridor areas are identified (i.e. between Tabin Wildlife Forest Reserve and Kulamba Wildlife Forest Reserve, between Mariau basin and Danum valley etc.) 2 The situations of the pilot corridor(s) is(are) assessed. 3 Corridor protection and management plan(s) of the pilot corridor(s) is(are) made and initiated. 4 Staff member of participating institutions are trained for management of the wildlife corridor(s). 5 New management system for wildlife corridors is established.	1.1) Selection of the priority area is completed. 1.2) List and map of potential corridors in Sabah. 2.1) Assessment report is completed. 2.2) List of species- habitat association known and documented. 3 Management plan is approved by the state government and implementation is carried out as planned. 4 Percent of the staff members among participating institutions trained by the project. 5 Qualitative ranking such as: - - everybody understand/ updated. - everybody understand purpose of meeting. - not all institutions attend meetings.		
Activities 1-1 Analyse existing digitised/ GIS thematic maps for the study. 1-2 Select key animal species for wildlife corridors. 1-3 Conduct study of habitat utilised by the key animal species or collect existing information. 1-4 Map and describe the utilisation by the key animal species in the map. 1-5 Select areas most utilised by wildlife as corridors for pilot corridors. 2-1 Prepare topography, land-use, land-status and vegetation maps. 2-2 Prepare habitat maps based on the maps above. 2-3 Specify key animal species getting benefit by the corridor(s). 2-4 Assess wildlife distributions (population/ range). 2-5 Survey movement of the key animal species in the area(s). 2-6 Investigate genetic diversity of each key animal species. 2-7 Survey human activities and requirement in the area(s). 2-8 Monitor the interaction between wildlife and human. 2-9 Study habitat requirement of the wildlife. 2-10 Prepare study report(s). 3-1 Prepare tentative plan(s) of wildlife corridor(s). 3-2 Consult with the stakeholders on the tentative plan(s). 3-3 Analyse the information collected. 3-4 Prepare medium term management plan(s). 3-5 Submit the management plan(s) to the Steering Committee. 3-6 Seek approval from the government. 3-7 Initiate implementation of the management plan(s) 4-1 Identify institutions or organisations involved in the study of pilot corridor(s). 4-2 Identify training needs for participating organisations in the pilot corridors. 4-3 Formulate training module to suit institutions requirement. 4-4 Conduct training on identified area. 5-1 Review and study of the institutions' roles and strength/ weakness in wildlife protection. 5-2 Establish management systems of corridor and animals. 5-3 Establish better communication system for monitoring mammals. 5-4 Enhance information system in the participating institutions to support management of the pilot corridor(s).	**Inputs**		Digitised thematic maps are available. **Preconditions**

Project Design Matrix (PDM) for Public Awareness Component

Annex 2-4

Programme Name: Technical Cooperation Programme for Borneo Biodiversity and Ecosystem Conservation in Sabah Project Name: Public Awareness Component Project Area: Sabah State

Duration: Japanese Fiscal Year 2002-207 Target Group: People in Sabah Date: 2001/7/19 Version: 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The endangered and precious biodiversity and ecosystems of Sabah are conserved.	Loss of rare and threatened species.		
Programme Purpose Comprehensive and sustainable conservation approaches of biodiversity and ecosystem are established.	1) Income of farmers above the poverty line. 2) Achievement of basic standard of living.	Questionnaire of various group of people.	
Project Purpose People of Sabah have better understanding and appreciation to the conservation of biodiversity and ecosystem.	1) Percentage of Sabah population understanding conservation. 2) Increase membership in environmental organisations.	1) Sampling survey.	- The public will participate in conservation of biodiversity and ecosystems in Sabah.
Outputs 1 Current issues, problems and constraints of public awareness are identified. 2 Effective general public campaign are planned and implemented. 3 Capacity of the implementing agencies are enhanced. 4 Guidelines and materials are revised and tried (implemented) in the target protected areas (Tabin Wildlife and Forest Reserve and Crocker Range Park). 5 Awareness and understanding on nature conservation is increased in the target protected areas.	1.1) Completion of the Problem Analysis (PCM) on the Public Awareness by (time). 1.2) Identified problems are used by the following activities. 1.3) The Problem Analysis covers important issues. 1.4) Number of issues/ problems identified and accepted as meaningful ones by the steering committee. 2 Target people understand conservation and biodiversity. 3.1) Number of participants in training. 3.2) No duplication on activities by agencies. 3.3) Number of man-hour spent in the public awareness activities. 3.4) Number of training courses conducted. 3.5) Number of trained trainers. 4.1) Guideline formulated, approved and distribute by (time). 4.2) Percentage of field staff highly evaluate the guideline. 4.3) Number of complains received from the users. 5.1) Less areas of slush and burn activities. 5.2) Increase of nature lovers (by questionnaire): Percentage of the population around the target protected areas aware of the conservation. 5.3) Reported number of illegal usage of natural resources (i.e. hunting etc.).		
Activities 1-1 Pre-test of the study. 1-2 Conduct field survey on problems and constraints of public awareness. 1-3 Study current public awareness activities. 1-4 Conduct dialogue between villagers and implementers. 2-1 Identify target people. 2-2 Identify necessary themes for the campaign. 2-3 Formulate a strategic plan of campaign (selection of media, media, method and schedule). 2-4 Involve the policy makers/ decision makers in the campaign. 2-5 Involve the media (radio, TV, newspaper) in the campaign. 2-6 Plan campaign programmes. 2-7 Produce campaign materials. 2-8 Organise conferences and speeches, and conduct dialogues/ discussion. 2-9 Interact with international children's eco-tour to Sabah. 2-10 Conduct competitions of photography, essays and creative arts. 2-11 Create the webpage. 2-12 Analyse the result of campaign 3-1 Train staff of implementing agencies. 3-2 To make a network to get relevant information. 3-3 Establish communication system (webpage newsletter, etc.). 3-4 Conduct staff exchange programme. 3-5 Study tour for staff of implementing organisations. 4-1 Analyse the results of the socio-economic study under Component 1 (Research Component), 2 (Protected Area Component) and 3 (Wildlife Corridor Component). 4-2 Identify best medium and method for effective public awareness activities. - Search for best practices in other parts of the world on materials for public awareness. - Involve social organisation to advice on effective communication methods. 4-3 Produce guidelines and materials on public awareness activities (for children, neighbouring residents, administrators, etc.). 4-4 Test model public awareness guidelines at the target protected areas. 4-5 Conduct meeting/ workshop to evaluate/ standardise public awareness guidelines. 4-6 Revise guidelines and materials. 4-7 Compile public awareness materials to be used in other areas/ status in Malaysia. 5-1 Establish a nature information centre in the target area.* 5-2 Each Implementing Organisations identify and adopt a school and a village for nature education and awareness. 5-3 Establish a "mobile unit" that visit villagers and schools around the target protected areas (coordination of the Implementing Organisations). 5-4 Involve NGO, volunteers for environmental education in target protected areas. 5-5 Monitor change of awareness of the people. (Optional Activities for Output 5) - Study tour for target local groups. - Conduct seminars/ talk on environmental issues. - Conduct environmental awareness camp. - Establish community project.	**Inputs** (Japanese Side) - Apply for JICA/ JOCV volunteers for capacity building of implementing agencies. - Vehicle. (Malaysian/ Sabah side) - To employ adequate staff (permanent) to run the programme. - To have fleet of well trained, paid campaigners to ensure sustainable efforts.	Baseline data important for formulation of guidelines and materials of the public awareness obtained sufficiently from the protected areas. **Preconditions**

*: maybe incorporated in the Protected Area Component.

MINUTES OF MEETINGS BETWEEN THE SECOND JAPANESE PREPARATORY STUDY TEAM AND THE REPRESENTATIVES OF UNIVERSITI MALAYSIA SABAH AND THE SABAH STATE GOVERNMENT AGENCIES ON TECHNICAL COOPERATION PROGRAMME FOR BORNEAN BIODIVERSITY AND ECOSYSTEMS CONSERVATION IN THE STATE OF SABAH, MALAYSIA

The Japanese Second Preparatory Study Team (hereinafter referred to as "the Team") organised by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Takahisa KUSANO, Director, Planning Division, Forestry and Natural Environment Department, JICA visited Malaysia from October 4 to 24, 2001, and have discussed and exchanged views on Technical Cooperation for Bornean Biodiversity and Ecosystems Conservation Programme in the State of Sabah, Malaysia (hereinafter referred to as "the Programme") with the representatives of the Sabah State Government agencies concerned and of Universiti Malaysia Sabah (hereinafter referred to as "UMS").

As a result of the discussions, both sides reached common understandings concerning Programme Document and the matters referred to ANNEX attached hereto. The Programme Document will be revised or altered when deemed necessary after monitoring of the implementation by the Programme Steering Committee.

Kota Kinabalu, 19th October, 2001

Takahisa KUSANO
Chief Advisor,
Second Preparatory Study Team
JICA

K.Y. Mustafa
The State Secretary of Sabah

Prof. Datuk Seri Panglima Dr. Abu Hassan Othman
Vice Chancellor, Universiti Malaysia Sabah

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Prof. Datin Dr. Maryati Mohamed
Director, Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah
(Head of Research and Education Working Group)

Datuk Lamri Ali Alisaputra
Director, Sabah Parks
(Head of Park Management Working Group)

for Mahedi Andau
Director, Wildlife Department Sabah
(Head of Habitat Management Working Group)

Moktar Yassin Ajam
Director, Science and Technology Unit
(Head of Public Awareness Working Group)

ANNEX

1. INFORMATION SHARING AND PUBLICATION

The findings, results of studies and activities, and other information that pertain to the Programme will be accessible to the public with consideration of followings.

(1) The publications shall bear the acknowledgement of the Programme and the Japanese - Malaysian technical cooperation.

(2) When any researchers publish based on the findings acquired through the activities of the Programme, a report will be made to the Programme Steering Committee.

(3) The publications shall be submitted to the Programme Steering Committee through the Secretariats of the Programme Steering Committee and the JICA Programme Coordinator not later than thirty (30) days after its publication.

2. COLLECTION OF SPECIMENS

In accordance with the technical cooperation between Malaysian and Japanese researchers under this programme where component activities involve the collection of botanical and zoological specimens, and where it is deemed necessary for specimens to be taken out of Sabah, the following requirements shall apply:

(1) Compliance with EPU general circular no. 3 of year 1999 – "Regulations for the conduct of research in Malaysia" and specifically appendix B3 of the said circular regarding guidelines for the collection and distribution of specimens, and

(2) Compliance with the provisions of the relevant State Legislations including, but not limited to, the Forest Enactment 1968, the Wildlife Conservation Enactment 1997, the Sabah Biodiversity Enactment 2000 and the Sabah Parks Enactment 1984.

3. EQUIPMENT SHARING

(1) Equipment, provided by the Government of Japan through the Programme, should become the property of the particular agency requesting for it. It will be the responsibility of the agency to maintain and keep record of its uses.

(2) The commonly used equipment such as vehicles, audiovisuals and so on, should be requested by, and when provided, will become the property of the leading agency of the particular component. This equipment should be shared by the member agencies of particular component, and the agency using it should maintain the equipment and keep records of its uses while the equipment is with them.

[End]

Technical Cooperation Programme for Bornean Biodiversity and Ecosystems Conservation in the State of Sabah, Malaysia

Programme Document

19th October, 2001

Technical Cooperation
between
The Sabah State Government Agencies and
Universiti Malaysia Sabah,
and
Japan International Cooperation Agency (JICA)

Abbreviation

CITES:	Convention for International Trade in Endangered Species of Wild Fauna and Flora
CRP:	Crocker Range Park
DANCED:	Danish Cooperation for Environment and Development
EAC:	Environmental Action Committee
ECD:	Environmental Conservation Department
EPU:	Economic Planning Unit
FDS:	Forestry Department Sabah
FRC:	Forest Research Centre
FRIM:	Forest Research Institute Malaysia
GEF:	Global Environmental Facility
HQ:	Headquarters
IDS:	Institute for Development Studies
IUCN:	International Union for Conservation of Nature and Natural Resources
ITBC:	Institute for Tropical Biology and Conservation
JICA:	Japan International Cooperation Agency
KWR:	Kulamba Wildlife Reserve
MOSTE:	Ministry of Science, Technology and Environment
MTEST:	Ministry for Tourism, Environment, Science and Technology
MTDEST:	Ministry for Tourism Development, Environment, Science and Technology
PACOS:	Partners of Community Organizations
RDB:	Red Data Book
RIC:	Rainforest Interpretation Centre (Sandakan)
SAFODA:	Sabah Forest Development Authority
SITE:	Sabah Inter-Agency Tropical Ecosystem Research Committee
SNC:	Sabah Nature Club
SWD:	Sabah Wildlife Department
TWR:	Tabin Wildlife Reserve
UMS:	Universiti Malaysia Sabah
UNDP:	United Nations Development Programme
UPEN:	State EPU
UST	Science and Technology Unit
VJR:	Virgin Jungle Reserve
WCMC:	World Conservation Monitoring Centre
WR:	Wildlife Reserve
WWF-M:	World Wide Fund for Nature Malaysia

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Appendices

1. INTRODUCTION

Malaysia biodiversity

Malaysia is one of twelve mega-biodiversity countries in the World in where rich species and ecosystem diversities are recognised. Over 15,000 known flowering plants, 1,500 terrestrial vertebrates and 150,000 invertebrates are distributed in Malaysia. Although total numbers of plants and land vertebrate species of Malaysia are not the greatest in four countries in East Asia, number of species per sq. km. is the highest (**Table 1-1**). These rich species diversity are important resources for development of Malaysia and also for the world as human common heritage, on the other hand number of threatened plants and higher vertebrates of Malaysia per sq. km. are also the highest in the four countries except for birds. Increase of protected area is small in Malaysia but the decrease of forest habitat is large as compared to other Asian countries (see **Appendix 2**).

Table 1-1. Species richness and threatened plans and higher vertebrates of four countries in East Asia

Country	State area (10^3-km^2) (roumded)	Known/ threatened	Plants		Mammals		Birds		Reptiles	
			No. species	No./ 10^3-km^2	No. species	No./ 10^3-km^2	No. species	No./ 10^3-km^2	No. species	No./ 10^3-km^2
Malaysia	330	Known	15,000	45.5	286	0.87	736	2.23	268	0.81
		Threatened	522	1.58	23	0.07	35	0.11	12	0.04
Indonesia	1,900	Known	20,000	10.5	515	0.27	1519	0.80	511	0.27
		Threatened	70	0.04	49	0.03	135	0.07	13	0.01
Philip-pine	300	Known	8,000	26.6	166	0.55	395	1.32	193	0.64
		Threatened	159	0.53	12	0.04	39	0.13	6	0.02
China	9,600	Known	30,000	3.1	394	0.04	1,100	0.12	282	0.03
		Threatened	350	0.04	40	0.004	83	0.01	7	0.0007

Data source: Malaysian known species = MOSTE (1997), Other counties and threatened species = IUCN (1992)

Sabah biodiversity and forest decrease

Malaysia is comprised of West Malaysia (Peninsular Malaysia) and East Malaysia (Sabah and Sarawak). Species richness per sq. km. in the East Malaysia ($1.2/10^3$-km^2; land mammals) is higher than that of average of whole Malaysia ($0.87/10^3$-km^2) (see **Appendix 4**). The rich biodiversity of Malaysia is supported by diverse habitats, especially by tropical rainforest. There was a stretch of forests in Malaysia including Sabah, the nearest tropical rainforest to Japan. But the forest extent has been reduced to 63% of the federal land by land utilisation changes. Decrease rate of the forest of Sabah is the highest in the three (3) regions of Malaysia, whereas percentage of protected areas to the state area is less than the Peninsular Malaysia, on the other hand oil palm plantation is increasing rapidly (**Table 1-2**, **Table 2.1-3**). Biodiversity and ecosystem conservation in Sabah is an urgent problem to deal for sustainable development of Malaysia.

Table 1-2. Tropical moist forests (original versus remaining extent) and protected area of Malaysia

region	Total area (km^2)	Tropical moist forest condition			Protected area*	
		Approximate original extent of closed tropical moist forest (km^2)	Existing tropical moist forest (km^2)	% remaining	Approx. area (km^2)	% of State
Sabah	73,711	70,000	36,000	51	3,900	5.2
Sarawak	124,449	130,000	94,670	79	2,600	2.1
Peninsular	131,573	120,000	69,780	54	7,400	5.6
Total	329,733	320,000	200,450	63	13,900	4.2

Source: IUCN (1992) and MOSTE (1997)

* Note: National Parks, Wildlife and Bird Sanctuary (source: Thang, 1991)

2. BACKGROUND

2.1 Socio-economic Context

2.1.1 Population Trend

Malaysia's population was 18.4 million in 1991 and will be 26.6 million in 2006 with an annual growth of 2.6% (**Table 2.1-1**). Approximate 80% of the total population reside in Peninsular Malaysia, with 9.9% in Sabah and 9.4% in Sarawak. The population growth rate estimation of 185% in Sabah from 1991 to 2006 is the highest as compared to 144% in average of whole of Malaysia.

Table 2.1-1. Population growth estimation in Malaysia (1991 – 2006)

Region	Area (sq. km)	Population ('000)			Growth % (1991-2006)	Density/km²		
		1991	1998 1)	2006		1991	1998 1)	2006
Sabah	73,620	1,809	2,740	3,344	185	25	37	45
Sarawak	124,449	1,718	1,990	2,416	141	13	16	19
Peninsular	131689	14,853	17,4449	20,795	140	113	132	158
Total	329,758	18,380	22,179	26,555	144	56	67	81

Source: MOSTE (1997), 1) Social Statistics Bulletins Malaysia (1998)

2.1.2 GDP and land use change

Malaysia economic growth has been attributed to its success shifting from primary industry (agriculture, forestry, and fishery) to manufacturing sector from 1970 to 1990's (**Table 2.1-2**). In Sabah, striking new offshore oil field in western coast has boosted up mining sector and percentage of primary industry has reduced, but the latter still kept top percentage in the 10 sectors (1999). Land use pattern composing the primary industry sector has changed greatly in Sabah. Percentage of forest reserve including secondary forests to the state land decreased from 82.4% in 1972 to 60.2% in 1999, whereas oil palm plantation area increased 13 times in last 22 years. The plantation area occupies 12.8% of the state in 1999 (**Table 2.1-3**). The growth of oil palm production supports the top share of the primary industry sector in the GDP of Sabah. Whereas contribution of the forestry production to the Sabah State revenue decrease from 71% in 1980 to 26% in 1998 (**Table 2.1-4**). Tourism industry is one of the fastest growing sectors in Malaysia, especially in Sabah. Tourism receipts of Sabah in 2000 reached RM714 million with total arrivals of 774,475 visitors (**Table 2.1-5**). These situations demand wise uses of natural resource and the State land for sustainable development considering biodiversity and ecosystem conservation (see **Appendix 3**).

Table 2.1-2. GDP by sector in whole Malaysia and Sabah (1970 – 1990) (1987 price) (RM million)

Sector	Whole Malaysia						Sabah					
	1970	%	1990	%	1998 1)	%	1970	%	1990	%	1998 2)	%
Agriculture, Forestry, Fishery	6,254	30.0	14,820	18.5	17,157	8.7	738	55.4	2,436	37.4	3,362	37.4
Mining	2,962	14.2	7,748	9.7	14,719	7.7	10	0.7	1,279	19.6	722	8.0
Manufacturing	2,995	14.4	21,323	26.6	50,899	26.6	44	3.3	489	7.5	1,143	12.7
Construction	811	3.9	2,844	3.5	7,333	3.8	61	4.6	251	3.9	241	2.7
Utilities (Gas, etc.)	238	1.1	1,513	1.9	6,277	3.3	10	0.7	66	1.0	138	1.5
Transport	785	3.8	5,447	6.8	14,871	7.8	47	3.5	394	6.0	598	6.7
Wholesale Retail, Hotel & Restaurant	2,469	11.9	8,754	10.9	28,565	13.4	137	10.3	682	10.5	1,100	12.3
Finance, Insurance	1,854	8.9	7,655	9.5	23,010	12.0	129	9.7	383	5.9	584	6.5
Government Service	2,005	9.6	8,522	10.6	13,278	6.9	101	7.6	475	7.3	696	7.8
Other Service	445	2.1	1,657	2.1	15,345	8.0	37	2.8	62	0.9	394	4.4
Total value Added	20,818		80,283		182,331		1,332 *		6,517		8,371	

Source: MOSTE (1997); 1) Yearbook of Statistics, Malaysia (1999), 2) Yearbook of Statistics, Sabah (1999)

* Not including imputed bank service charge (less) and import duties (plus). % of each sector are calculated sub-total until other services.

Table 2.1-3. Forest reserve and oil palm plantation area change in Sabah (1972-1999)

Land use	1972	1977	1982	1987	1995	1997	1999
Forest reserve (including secondary forest)	6,007,000	5,353,000	4,607,000	4,494,000	4,422,000	4,443,000	4,443,000
Oil palm plantation	nd	73,303	110,717	182,612	518,133	758,587	941,322

Source: Sabah Forestry Department, and Palm Oil Research Institute of Malaysia

Table 2.1-4. Contribution of forestry sector to State revenue in Sabah (million RM)

Year	Revenue from forest	Total State revenue	% forest revenue of total
1975	151.7	265.8	57.1
1980	1,098.6	1,538.3	71.4
1985	504.1	1,156.4	43.6
1990	818.1	1,619.9	50.5
1995	602.7	1,475.3	40.9
1996	577.9	1,524.5	37.9
1997	577.9	1,422.8	40.6
1998	321.2	1,218.9	26.4

Source: Forestry Department Sabah (1997) (1975-1995 data) and Yearbook of Statistics Sabah (1999)

Table 2.1-5. Number of tourist visiting Malaysia and Sabah

Year	Whole Malaysia		Sabah			
	International arrivals	Total receipt (million RM)	International arrivals	Domestic	Total	Total receipt (million RM)
1997	6,210.,921	9,699.6	159,705	204,105	363,813	289.4
1998	5,507,480	8,580.4	264,898	158,386	423,284	365.1
1999	7,931,149	12,321.3	335,931	148,060	483,991	488.0
2000	10,221,582	17,335.4	408,938	365,537	774,475	723.5
2001 *	nd	nd	531,620	475,198	1,006,818	895.0
2002 *	nd	nd	637,944	570,238	1,208,182	1,075.0

* Forecast arrival and estimated receipt

Source: Information from Sabah Tourism Promotion Cooperation (Sabah) and Annual Tourism Statistical Report (2000) (Malaysia Tourism Promotion web site: http://tourism.gov.my)

2.2 Biodiversity and conservation situation

Although Malaysia is a rich biodiversity country, there are large numbers of threatened species as mentioned above. Definition of the threatened species is rather complicated because proper assessment of threat level is usually difficult, and globally threatened and local threatened (or abundance) situations are different for many species. **Table 2.2-1** shows endemic species, threatened animals and plants listed in IUCN-RDB, and protected species in Malaysia. Data on plants is not enough, but it is estimated that approximate 40-50% of flowering plants is endemic in Borneo (see **Appendix 4**). The number of protected and endemic species is also large in Sabah.

Table 2.2-1. Endemic species and protected species in Malaysia

Taxon	Number of Species [1]	Endemic species*	IUCN-RDB*	Protected species by state legislation			
				Peninsular [2]	Sabah [3]		Sarawak [2]
					Totally protected	Protected	
Plants	15,000	746 [4]	510	nd	4	13	nd
Mammals	286	27	42	55	6	65	6
Birds	736	11	34	495	0	131	8
Reptiles	268	69	14	1	3	7	3
Amphibian	158	47	0	0	0	0	0

Source: 1) MOSTE (1997), 2) Japan Wildlife Research Center (1990), 3) Sabah Wildlife Dept., 4) in 2,830 woody species (MOSTE, 1997)
Note: State legislation; Peninsular = Protection of Wildlife Act, Sabah = Protected Animals and Birds, Sarawak = Protected Wildlife

2.3 Host Country Strategy

2.3.1 Malaysia Plans

Malaysia has been preparing "Malaysia Plans" as 5-years national development plans and "Outline Perspective Plan" for long term planning. Since the 5th (1986-90) Malaysia Plan, preservation of clean and healthy environment and conservation of environmental quality for minimising human activities related to resource development has been described.

In addition to those brown issues and resource management, it was described in the 8th (2001-2005) Malaysia Plan, "empowering local authorities and engaging communities in addressing environmental issues", and "enhancing land use planning, intensifying biodiversity conservation and the sustainable management of forests"

The Malaysian Government also encourages environmental awareness programme in the 8th Malaysia Plan to increase level for environmental conservation among Malaysians with the Ministry of Education, including ISO 14001 to ensure that process of private sectors are environmental friendly.

2.3.2 National Policies on Conservation

For the biodiversity conservation, Ministry of Science, Technology and Environment (MOSTE) compiled and published "Country Study on Biological Diversity" and "National Policy on Biological Diversity" during the implementation of the 7th Malaysia Plan (1997, 1998). The visions and objectives of the national policy are as follows:

Vision: To transform Malaysia into a world centre of excellence in conservation, research and utilisation of tropical biological diversity by the year 2020.

Objectives:

1) To optimise economic benefits from sustainable utilisation of the components of biological diversity;
2) To ensure long-term food security for the nation;
3) To maintain and improve environmental stability for proper functioning of ecological systems;
4) To ensure preservation of the unique biological heritage of the nation for the benefit of present and future generations;
5) To enhance scientific and technological knowledge, and educational, social, cultural and aesthetic values of biological diversity;
6) To emphasise biosafety considerations in the development and application of biotechnology.

Concerning ecotourism, MOSTE and WWF-Malaysia also prepared "National Eco-tourism Plan" in 1996.

2.3.2 State Policy on Biological Diversity

Following the National Policy on Biological Diversity, the biodiversity action plans will be extended for various states during the implementation of 8th Malaysia Plan (2001-2005).

Besides the above mentioned federal policies and plans concerning biodiversity and ecosystem conservation, the Sabah State Government and WWF-Malaysia prepared "Sabah Conservation Strategy" in 1992. However, after nine (9) years, the strategy is getting outdated.

2.4 Prior or Ongoing Assistance

2.4.1 GEF programme

Malaysia is a mega-biodiversity country, but the diverse ecosystems are reduced rapidly by economic development, especially in Sabah. Therefore several GEF programme for biodiversity field and sustainable use of natural resources are conducted in Malaysia and Sabah (**Table 2.4-1**). Wetlands, peat swamp management and capacity building are mainly focused by the GEF projects.

Table 2.4-1. GEF project in Malaysia and Sabah (extract)

Type	Project Name	Implementation Organization	Period	Cost (1000US$)
UNDP-GEF	Conservation and sustainable use of tropical peat swamp forests and associated wetland ecosystem	Ministry of Primary Industry	1999-2004	12,970
	Conservation of biodiversity in marine park islnads in Malaysia	MOSTE	planning	25
Small Grant	Building sustainable communities: Land and resource management	MTDEST	2001	50
	Capacity building and environment education programme at the Kota Kinabalu City Bird Sanctuary, Sabah	Likas Wetlands Sanctuary Management Committee (LWSMC)	2001	2
	Capacity building for wetland reserve management and education at the Kota Kinabalu City Bird Sanctuary, Sabah	NGOs	2001	49.8

Source: GEF Programs, December 1999, GEF-UNDP web site (www.undp.org/sgp/cty/ASIA_PACIFIC/MALAYSIA)

2.4.2 Bilateral Programme

Japan has conducted several bilateral programs for tropical forest researches in Malaysia (mainly in Peninsular Malaysia) through Global Environment Research Fund coordinated by the Ministry of Environment. In Sabah, several researches on the field of ecology are conducted through Science Research Grant managed by the Ministry of Education, Culture, Science and Technology of Japan (**Table 2.4-2**).

DANCED collaborates biodiversity conservation and capacity building project in Malaysia from 1996, but most of the DANCED projects will be finished in 2002 (**Table 2.4-3**). The Royal Society of UK supports the Sabah Foundation to conduct biodiversity study and field station management in Danum Valley in south-east Sabah. GTZ cooperates sustainable forest management for the Forestry Department of Sabah including environmental education activities for tropical rainforest conservation.

Table 2.4-2. Bilateral biodiversity research programs of Malaysia and Japan (extract)

Project budget (Japanes side)	Project title	Project site	Period	Implementation organisation	
				Malaysia	Japan
Global Environment Research Fund - Tropical forest field	Study on criteria of biodiversity and sustainable management in the tropical forest	Peninsular Malaysia (Pasoh Forest Reserve)	1996-98	FRIM, Putra Univ.	National Institute for Environment Science (NIES)
	Study on evaluating effects of tropical forest on the environmental conservation	Peninsular Malaysia (Paso & Bukit Tarek Conservation Forest)	1996-98	FRIM	Forest Research Institute
JICA (JOFCA)	Study for Development of Traditional Forest Related Knowledge of Ethnic People	Sabah (Surrounding area of Crocker Range Park)	1999-2001	PACOS Trust	JOFCA
Science Research Grant	Research on tree diversity and ecosystem function of tropical rain forests	Kinabalu Parks, and other sites, Sabah	2001-	Sabah Parks	Kyoto Univ. (Prof. Kitayama)
	Response of Bornean rainforest ecosystem to global change	Sabah (Mt. Kinabalu, Tabin WR), Indonesia	-2000	UMS, others	Hokkaido Univ. (Prof. Kohyama)
	Research on biodiversity maintenance system in Borneo rainforest	Borneo, Sabah	2000-2001	Sabah, Borneo	Kagoshima Univ. (Prof. Suzuki)

Source: Annual report of Global Environment Research and Science Research Grant in Japan

Table 2.4-3. Biodiversity conservation project in Malaysia and Sabah supported by DANCED (extract)

Project site	Project title	Period	Implementation organisation	Cost (DKK)

Whole of Sabah	Sabah Biodiversity Conservation Project	1995-98	MTDEST, WWF-Malaysia	19.1 million
Whole of Malaysia	Coastal Zone Management	1996-2000	Federal Gov. & EPU of Penag, Sarawak, and Sabah	32 million
ECD, Sabah	Capacity-building of the Environmental Conservation Department, Sabah	1999-2001	Environmental Conservation Department, MTDEST	13.4 million
SWD	Sabah Wildlife Department Capacity Building Project	2000-2003	Sabah Wildlife Department, MTDEST	14.0 million
UMS	International University Cooperation on Biodiversity	1997-2001	UMS	14.0 million
Maliau Basin	Management Plan for Maliau Basin	1999-2002	Sabah Forestry Dept.	18.2 million

Source: DANCED report

3. PROBLEMS TO BE ADDRESSED, THE CURRENT SITUATION

3.1 Institutional Framework for the Sub-sector

3.1.1 Administrative Structure of the State Government

Sabah achieved independence from United Kingdom in August 1963, and joined the federation of Malaysia on September 1963. The Sabah State Government is semi-independent from the Federal Government, and natural resources belong to the State by the Federal constitution. **Figure 3.1-1** shows administrative structure of the Sabah State Government and related organisations on the Programme. Seven Departments / Unit under three (3) Ministries and the Sabah State Government Secretary join the Programme to establish comprehensive sustainable conservation approach. The Universiti Malaysia Sabah was established under the Federal Ministry of Education in 1994 as the 9th public universities in Malaysia. The Universiti implements mainly research activities for conservation and takes secretariat of the Programme. More detail information on each implementation organisations including organisation chart, human resources, financial situation and facilities is shown in **Appendix 1**.

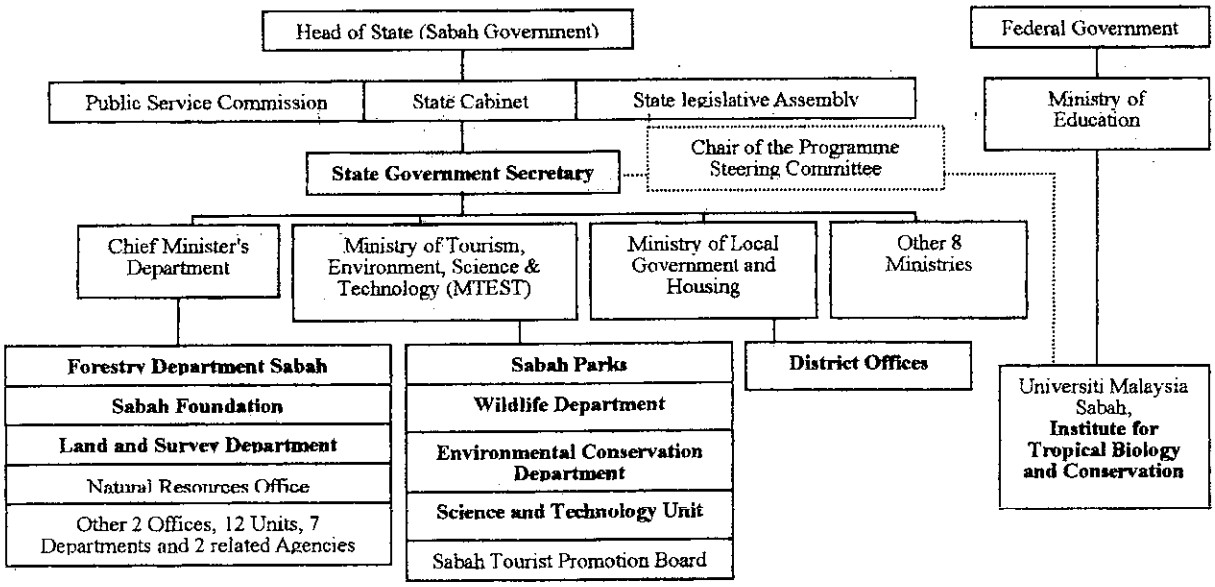

Figure 3.4-1 Sabah State Government Structure and Universiti Malaysia Sabah
(Bold letter indicates implementation organisations)

3.1.2 Related Agencies and their Responsibility

There are two level legislation systems in Malaysia; the federal government level Act and the state level Ordinance or Enactment. **Table 3.1-1** shows the federal level legislation and Sabah State Ordinances / Enactments related to biodiversity conservation and environmental management.

The Sabah Wildlife Department manages wildlife in Sabah on the Wildlife Conservation Enactment (1997), and charges scientific authority of terrestrial species for the Convention for International Trade of Endangered Species (CITES). The Forestry Department Sabah has responsibility for forest reserve

management including wildlife reserve (Class VII forest) and the areas where Sabah Foundation has concessions for logging, according to the Forest Enactment (1968). The Sabah Parks is in charge of six State Parks management based on the Parks Enactment (1984). The Environmental Conservation Department is a new organisation established in 1998, and is in charge of enforcing the Environmental Quality Act (1974) of a Federal legislation, and the Conservation of Environment Enactment (1996) of Sabah. The Universiti Malaysia Sabah is an academic centre for biodiversity research and a higher education organisation as the only public university in Sabah.

Sabah Inter-Agency Tropical Ecosystem Research Committee (SITE) was organised in 1996 and annual seminar was held one of the member agencies in rotation basis. Member of SITE are fourteen (14) agencies join the SITE group; 1) Universiti Malaysia Sabah (UMS), 2) Sabah Parks, 3) Sabah Wildlife Department (SWD), 4) Forestry Department Sabah (FDS) and Forest Research Centre (FRC), 5) Sabah Foundation, 6) Institute for Development Studies (IDS), 7) Environmental Conservation Department (ECD). 8) Museum Department, 9) Agriculture Department, 10) Fisheries Department, 11) Sabah Forest Development Authority (SAFODA), 12) Mineral & Geoscience Department, 13) Department of Irrigation and Drainage, and 14) Department of Veterinary Services and Animal Industry.

3.1.3 The Sabah Biodiversity Council

The Sabah Biodiversity Bill 2000 has been approved, and shall come into force as the Sabah Biodiversity Enactment 2000. The objectives of the Programme are deeply related to and consistent with the Enactment, and activities of the Programme must keep regulations under the Enactment (see Section 5.6).

According to the Enactment, there shall be established the Sabah Biodiversity Council and the Sabah Biodiversity Centre enforcing the Enactment upon the related activities including those under the Programme. Functions and members of the Sabah Biodiversity Council and functions of the Sabah Biodiversity Centre are provided in the Enactment, however organisational structure of the Sabah Biodiversity Centre has not yet been decided.

Table 3.1-1. Major legislation relating to biodiversity conservation

Federal/State	Name of legislation (year established)	Responsible organisation
Federal	Environmental Quality Act (1974)	MOSTE
	Pesticides Act (1974)	Ministry of Agriculture
	Plan Quarantine Act (1976)	Ministry of Agriculture
	National Forestry Act (1984)	Forestry Department
	Fisheries Act (1985)	Fisheries Department
	Customs (Prohibition of export)(1993)	Customs
Sabah	Fauna Conservation Ordinance (1963) Wildlife Conservation Enactment (1997)	Sabah Wildlife Department
	Forest Enactment (1968)	Sabah Forestry Department
	Parks Enactment (1984)	Sabah Parks
	Conservation of Environment Enactment (1996)	Environmental Conservation Department
	Cultural Heritage (Conservation) Enactment (1997)	MTDEST
	Sabah Biodiversity Enactment (2000)	Sabah Biodiversity Council, Sabah Biodiversity Centre

Source: MOSTE (1998) and Sabah State Documents

3.2 Problems to be Addressed

Based on the Problem Analysis of the participatory planning method (see Section 6.4.4), the following problems on conservation of biodiversity and ecosystem in Sabah are identified.

3.2.1 Coordination among Organisations

As a problem observed from the institutional point of view, there is no effective integrated system for biodiversity and ecosystem conservation in Sabah based on scientific data. As described in Section 3.1 above, there are various organisations in charge of conservation, and their activities are not always coordinated or integrated efficiently or effectively. SITE was organised in 1996 to exchange information among these agencies (see Section 3.1.2). However, further cooperation and integration of activities under the different agencies for conservation is still needed.

3.2.2 Research Capacity

For sustainable conservation in Sabah, it is necessary to understand the current status of biodiversity and ecosystem, then sufficient research capacity is essentially important factor. However, at present there is a little capacity for biodiversity research and specimen collection in ITBC-UMS, FRC, Sabah Parks and Sabah Museum (see **Appendix 1** and **Appendix 6**). FRC mainly conducts applied research for forest management and the Sabah Park focuses on only the State Park area study. Although Sabah Museum covers broad area including culture and history, it gives priority for public education centre rather than basic research.

ITBC-UMS is a new institute and has not yet enough research capacity for taxonomy and conservation biology. However, as the only public university in Sabah, UMS is expected to play important role for biodiversity conservation research and human resource development. UMS can be not only an education centre for university students, but also an "open university" for governmental staffs and other people in Sabah, especially in the field of biodiversity conservation study which need involvement of various groups of people and lifelong education.

3.2.3 Protected Areas

For sustainable conservation in Sabah, it is necessary to manage effectively the existing protected areas (i.e. state parks, wildlife reserves etc.), and development of effective management models and options for the protected areas is essential.

However, management plans for some of the protected areas are not yet existing, including Crocker Range Park which is the largest Sate Park in Sabah. Management for the protected areas is sometimes difficult and ineffective because of the conflict between the management and utilisation of natural resources by the people neighbouring the protected areas. The agencies in charge of the protected area management, i.e. Sabah Parks, the Sabah Wildlife Department, the Sabah Forestry Department etc., need assistance to

prepare appropriate management plans and to implement them. Experience and lessons learned through the past protected area management have not been fully shared by the agencies. As a result of these problems, there have not been effective management models and options for the protected areas.

3.2.4 Protection outside the Protected Areas

All categories of protected areas occupy 7.6% of the State land (see **Appendix 8** and **9**), but it is suggested that the existing protected areas are not enough for long-term biodiversity conservation. Under the Sabah Biodiversity Conservation Project, WWF-Malaysia described 38 proposed biodiversity conservation areas in "Sabah Conservation Strategy" report (WWF-Malaysia, 1992; see Section 2.3.2), and study on six potential protected areas was conducted supported by DANCED. However, the proposal has not been realised yet.

Not only there is insufficient total protected area, but also the fragmentation of the protected areas is a problem. Local populations of animals and plants in the protected areas and habitats are isolated by the land use change. Wildlife corridors, the habitats between protected areas, which enable the isolated populations to migrate between protected areas have not been protected sufficiently. Forestry Department Sabah considers networking of the protected areas, but no actions have been taken.

3.2.5 Public Awareness for Environmental Conservation

Several agencies and NGOs conduct public awareness activities for urban environmental protection and nature conservation. Environmental Conservation Department has a capacity building programme for environmental management supported by DANCED. However, systematic regular activities for the environmental education are not organised and effective guideline and materials are not developed. Community development activities including public awareness in surrounding area of the protected areas is also important for effective management of the protected areas and wildlife corridor, and sustainable development depends on ecosystem function.

4. PROGRAMME STRATEGY

4.1 General Strategy

Based upon the problems addressed in Section 3.2, and objectives analysis conducted through the participatory planning method (see Section 6.4.4), the general strategy to solve these problems is considered and shown in the objectives tree in **Figure 4.1-1**.

4.2 Programme Strategy

A distinguishing characteristic of this technical cooperation is its programme approach. From the objective tree, the four (4) approaches, which have enough scale and scope to be considered as independent projects respectively, are selected as components under the Programme. These components are namely:

- Research and Education Component
- Park Management Component
- Habitat Management Component
- Public Awareness Component

All the above components are selected as parts of the Programme, because technical assistance only for single specific sub-sector, e.g. research on biodiversity and ecosystems, is not enough to contribute to the actual conservation of biodiversity and ecosystem in Sabah. As shown in the objectives tree, some means for specific objectives can also be means to achieve different objectives, e.g. the research results acquired through the research on biodiversity and ecosystems can be utilised for the park management, habitat management and public awareness.

By applying means concerning various issues comprehensively, it is expected that the Programme shall efficiently contribute to the conservation of biodiversity and ecosystem in Sabah. Such comprehensive approach also helps to strengthen institutional integration and coordination among the various organisations in charge of or related to the conservation. According to the problems addressed in Section 3.2, objectives under each component have also enough necessity, priority and feasibility to be achieved under the Programme for the conservation of biodiversity and ecosystem in Sabah.

The objectives in the objective trees that are not covered by the four (4) components will be pursued through the effort of the individual agencies responsible and be reported and discussed from time to time when necessary at meetings of the Programme.

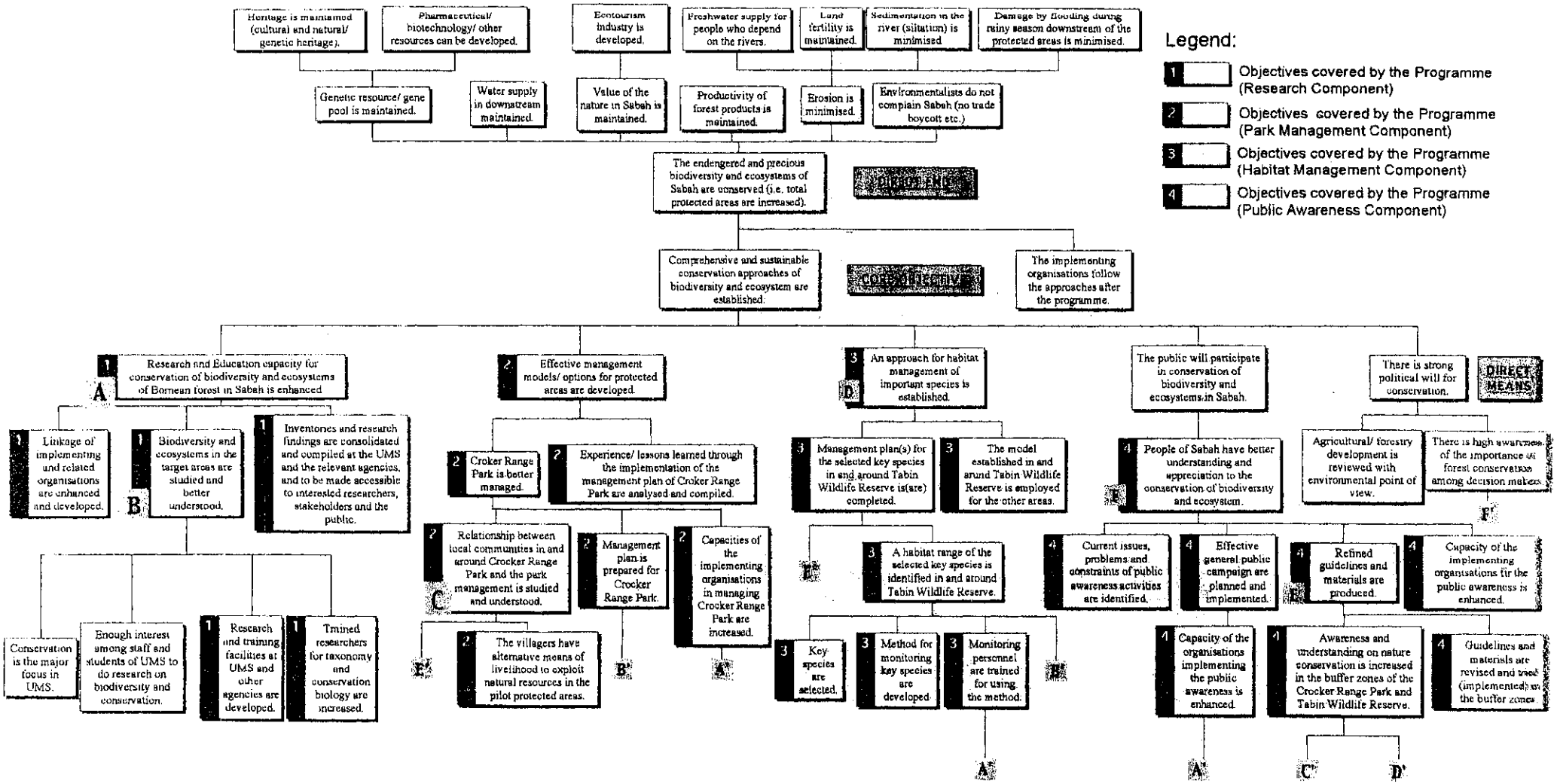

Figure 4.1-1 Objectives tree on biodiversity and ecosystem conservation in Sabah