PLANNING FOR THE DEVELOPMENT OF A BIOLOGICAL DIVERSITY ACTION PLAN IN THE PHILIPPINES

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Introduction

The recent change in administration in the Philippines, an ongoing reorganization of the government including the creation of a Department of Energy, Environment, and Natural Resources and a growing recognition among the professional and general populace alike of the magnitude and breadth of the country's environmental problems have contributed to a renewed interest in attempts at arresting the decline of the country's natural resource base. Several ongoing or newly proposed initiatives in promoting more effective environmental management practices, while originating from different donors, are proving to be closely interlinked. These include the formulation of a national action plan and strategy for the maintenance of the country's rapidly diminishing biological diversity (BioD/USAID/IIED); the development of an Integrated Protected Areas System (IPAS/WWF-US); the funding of a series of national policy studies on key natural resource sectors (ffARM/World Bank); and interest in reviving the moribund Philippines National Conservation Strategy (NCS). As a result of these existing or proposed activities a consultancy was deemed warranted by USAID and IIED through the Environmental Planning and Management Project (EPM) for purposes of avoiding overlap, promoting interproject coordination and increasing the usefulness of project outputs.

Approach

Specifically, the contract's terms of reference (TORs) were threefold and are presented below in summary form:

- to inform and discuss the four activities (Biological Diversity; ffARM; IPAS; and the NCS) with appropriate individuals and institutions;

- to provide technical assistance to Haribon Foundation (a Filipino-based environmental NGO responsible for implementing one or more components of the previously described initiatives); and

- to prepare a strategy document suggesting how the Biological Diversity study report can be used to best effect.

The approach adopted to meet the contract's TORs was based on a number of considerations. These included:

- the requirement to meet separate TORs (i.e. IIED and Haribon's respective requests);

- a changing institutional environment associated with government reorganization;

- the highly diverse and fragmentary character of an archipelagic state generally and the Philippines particularly and its affect on planning for any national initiative; and

- time constraints.

As a result of these considerations the consultant's time was allocated approximately on a 50:50 basis between meeting IIED's and Haribon's requests respectively. Further, an attempt was made to divide the consultant's time more or less evenly between meeting and interviewing relevant individuals and institutions in the metro-Manila area (including Los Banos) and selected areas outside of Luzon. To increase productivity and avoid overlap time allocated to institutions where Haribon personnel had already briefed individuals on the projects was kept to a minimum (most notably at the UP/Diliman campus and some mainline government agencies). Rather in the spirit of the present government's movement toward devolution, the consultant believed it important to "cast" a wide net to "capture" institutions, particularly those outside of the Manila-UP/Los Banos-UP/Diliman orbit which rarely become involved in natural resources planning and management activities despite possession of valuable insights in one or more aspects of the process as it pertains to their respective regions of geographical expertise.

Two requests were made by Haribon Foundation with regards to technical assistance. One concerned formulating project plans for the IPAS and BioD projects and

identification of points of interaction where coordination would prove beneficial to achieving the projects' respective objectives. The second request entailed drafting a proposal for the development of a National Conservation Strategy to take advantage of growing interest and available government funding for an initial phase. With regards to the former, following initial discussions with Haribon a project planning and management computer software program was adopted to assist with the planning exercise. The preliminary output of the approach accompanies this report in the form of an interim consultancy memo found in Appendix 3. A conceptual approach to the development of a National Conservation Strategy representing the NCS proposal can be found in Appendix 4 of the same report.

With regards to output the reader will no doubt note the report fails to conform well with the number of products and respective lengths as requested in the contract. However, the present format has been adopted with the intention of increasing the usefulness of the consultancy's output for subsequent follow-up activities. To that end a brief "reader's guide" has been provided below.

Product # 1 (a status report and suggested actions for IIED to remedy bottle-necks) is addressed throughout the main body of the report and in the accompanying appendices particularly those addressing project planning (Appendix 3) and the conceptual approach to the NCS (Appendix 4).

With regards to Product #2 (descriptions of services rendered to Haribon Foundation) the consultant feels this has been adequately addressed in the Approach section of the main report and the interim memo provided in Appendix 3.

Contract Product #3 (strategy document suggesting how best to use the biological diversity study report) begins with the proposed strategy and underlying assumptions and constraints provided in the relevant section of the main report. Based on the recommended approach the reader can the proceed to Appendix 1 which provides a series of

profiles of academic, governmental, and environmental NGOs as well as ongoing projects related to biological diversity (and the other natural resource and environmental projects touched on within the consultancy). As outlined in the forepart of Appendix 1 where particular needs and/or interests related to the strategy have been identified these have been highlighted in the text with the use of bold type. This in turn, provides a series of "leads" upon which follow-up discussions can be initiated through the use of the contact list provided in Appendix 2.

Where specific needs have been identified spanning beyond one institutional sector and IIED may have an interest in playing a role these have been included in the final section of the report in the form of brief descriptions. Where sufficient interest exists these could easily be expanded to into detailed proposals.

Biological Diversity Action Plan Project (USAID/IIED)

From the consultant's perspective the BioD project as presently proposed presents a number of issues which must be faced in furthering its design. First and perhaps most seriously, one must question what significance a product of this modestly-funded project could have in a country facing the severity of problems, both generally and specifically as they relate to loss of biological diversity, as the Philippines. A second set of issues are more technical in nature and deal with the proposed approach. Finally there are some concerns with regards to the project's impact on Haribon, the host-country counterpart institution.

With regards to the first issue it is the consultant's view that an Action Plan addressing the range of issues broadly falling under the topic of biological diversity is unlikely to receive the required sustained level interest of key government officials to facilitate the adoption of remedial actions. In part, this is due to the number and significance of existing issues perceived by the government as of overriding importance to the point of overshadowing

all others (e.g. insurgency, fragmentation of national territory and land reform). To assume these priorities will shift over the next 18 months (proposed life of the Action Plan) is speculative and dubious. Further, there appears to be ambiguity with regards to the new administration's view on environmental and natural resource issues. There is however, no doubt on its views with regards to relieving rural poverty and promoting locally-based socio-economic development initiatives. As a consequence any project addressing conservation of the country's biological diversity should be couched in those terms. Finally, based on the consultant's sample of "informed" individuals; there exists a widespread ambiguity on the role and purpose of the propcsed Action Plan, a question which in his opinion is not satisfactorily addressed in the existing proposal.

Based on these observations then the consultant humbly recommends the Action Plan should be designed to:

- provide a framework which clearly outlines a long term strategy which, if effectively implemented, can lead to the conservation of the country's biological diversity;

- reflect consensus across a broad range of private and public sector institutions and individuals facilitating its adoption and implementation; and

- include a number of specific actions and projects which need to be implemented to ensure its effective implementation.

In light of these recommendations, during initial project design it is recommended a number of government, academic and private sector institutions and individuals be "weaved" together into a coalition to assist in the preparation and eventual promotion of the Plan. As an incentive for their participation as well as providing a means of increasing the chances of Plan implementation respective institutional proposals should be encouraged and built into the Action Plan. Specifically, a portion of the Action Plan should be devoted to presenting a "basket" of fundable projects suitable for both government and forex

funding in the form of proposal descriptions, time frames, budgets and identifiable linkages to the broader strategy and its effective implementation. In part, the justification for this approach is to increase the chances of the Action Plan receiving serious consideration and endorsement at the highest levels in the present administration. Assuming the Action Plan is endorsed by government, proposals requiring funding could then be "spunoff" and directed toward appropriate potential funding sources.

Furthermore, as indicated is some ongoing or proposed activities described in Appendix 1, opportunities where they exist should be availed of to increase Action Plan effectiveness through establishing the means for coordination (e.g. coordinating the National Plant Genetics Research Laboratory and Haribon studies and cooperating with the National Museum's ongoing and proposed projects funded by the National Science Foundation).

With regard to the technical concerns these have been discussed in the interim memo included in Appendix 3. In short the recommendations include the following:

- the proposed time frame for the development of the Action Plan is too long. It is felt neither the technical nor logistical demands warrant an 18 month project duration at the expense of potentially missing an opportunity offered by government reorganization. There is also a price to be paid in terms of Haribon's staffing pattern (see pg. 4 of the memo);

- a National Steering Committee should be formed and budgeted for;

- if the costs associated with the data search and retrieval element of the IUCN subcontract prove substantial it is recommended that a portion of their budget be shifted to compensate Haribon staff for in-country data review leaving intact the element for assistance in developing and maintaining the biological data base;

- assuming Haribon staffs up for the project the filling of data gaps by a locally-based working group as originally called for in the proposal could be shifted to the Haribon staff.

Finally as the project affects Haribon as an institution the following recommendations were made:

- the present time frame necessitates the hiring of staff on an intermittent basis reducing their effectiveness in assisting Haribon in developing future projects;

- close coordination with IPAS together with a reduced time frame for BioD could lead to economies of scale for sustaining staff capable of supporting both projects;

- there is no overhead in the Haribon proposal to the detriment of the institution;

- existing office space is a constraint but in and of itself does not necessarily preclude satisfactory project implementation.

Integrated Protected Area System Study (WWF-US)

While IIED is not directly involved in this project it fell within the consultant's TORs to view it in the broader context of the BioD and other proposed or ongoing natural resources and conservation projects and identify possible issues or concerns which should be highlighted for remedial actions. In summary these are:

- a Steering Committee should be formed for reasons similar to those outlined for the BioD Project;

- a research framework should be developed initially based on theoretical underpinnings provided by IUCN and U.S. NPS and other existing PAS criteria but adapted to the Philippines situation;

- a system of triage should be implemented which would reduce the number of sites requiring field visits to maximize the usefulness of limited field time;

-a pilot effort testing the proposed field sampling methodology should be initiated to fine-tune same in anticipation of using it to survey the nation's existing parks.

ffARM Study (World Bank)

No additional information with regards to possible scope, direction and interest of the proposed project beyond what has been previously outlined in the initial concept paper was made available by Haribon. Nor was the consultant a party to any of the organizing meetings during the team's initial visit to the Manila. Thus no basis existed from which the consultant could make knowledgeable comments.

National Conservation Strategy

The conceptual approach proposed toward the development of the NCS was based on several considerations. These were:

- the archipelagic nature of the Philippines;
- "lessons learned" from past and existing successful attempts at managing natural resources in the Philippines;
- practical constraints within the changing institutional environment;
- the existence of other ongoing or proposed projects; and
- the consultant's past experience in developing an NCS.

Based on these considerations a multiphased approach was suggested comprising four phases divided into start-up; pilot strategy development; implementation and replication; and integration of pilot site results into the development of an NCS. Project life was estimated to be some 42 months with costs projected at $200,000 to be shared by government, institutions implementing relevant ongoing and/or proposed projects and foreign donors.

Key recommendations integrated into the approach were:

- the establishment of a National Steering Committee headed by the Undersecretary for the Bureau of Environmental Management;
- the establishment of a semi-permanent secretariat to serve the needs of the NSC preferably with some technical capabilities;

- the selection of pilot sites equitably distributed in the archipelago focusing on biophysical and/or issue defined regions from which to develop site specific conservation strategies;

- the establishment of regional steering committees to guide the de elopment of the respective pilot site strategies headed by the respective regional representative of the DEENR;

- the development of a geographic information system to service the immediate needs of the project but capable of expanding to support a broader national effort;

- the provision for replication of initial pilot attempts as modified by experience to other appropriate areas within the region; and

- the means to integrate the results of the initial pilot site conservation strategies and early attempts at their implementation into the process of national conservation strategy development.

Interproject Complementarity

Due to absence of information with regards to the ffarm project and present time constraints precluding reaching consensus on the approach to the development of an NCS the following recommendations for promoting interproject complementarity were limited to the Biod and IPAS projects. These were:

- a phased implementation of the two projects to spread the load on Haribon and timed so field work required in the IPAS study would coincide with the onset of the dry season;

- the partitioning of data review responsibilities between IPAS and the BioD projects timed so the end product would coincide with the initial BioD technical Workshop;

- a request for IUCN to provide input to IPAS as part of the IIED subcontract to assist in the preparation of the proposed theoretical framework; and

- the integration of initial IPAS study results into the BioD preparation of National Conference background documents.

Possible Roles For IIED

General Needs

Networking Filipino Environmental NGOs

As described in the NGO section of Appendix 1 there exists two tiers of environmental NGOs, those which have national prominence and an unknown number of smaller organizations scattered throughout the country. It is felt that in the spirit of the present administration's promotion of grass-roots development it is particularly timely to develop a project which would network and support the viability of these groups. Initial activities entail an inventory of these organizations; establishment of stable contact points; and initial attempts at "networking" them through the use of a newsletter, rotating forums, national issue campaigns etc. into a national coalition of environmental NGOs.

Geographic Information System for the NCS

It is well recognized that a major constraint of the profiling process has been the absence of adequate time series data. Numerous recommendations have been forwarded regarding the advantages of establishing a "living" profile" using computer technology capable of allowing periodic updates, analyzing projections and trends in natural resources utilization and providing information considered essential for making sound management decisions. The proposed development of a NCS in the Philippines provides an opportunity to develop a system in support of the activity. Within the country there already exist a number of GIS technologies designed to serve project-specific applications. The need is to define the information and analytical demands of a National Conservation Strategy, compare existing systems for their "appropriateness" and flexibility in allowing for refinements versus importing or building new systems leading to the eventual development of the required technology. Once the system exists its growth should be viewed as a multiphased approach which would

proceed in two directions, horizontally and vertically. Horizontal growth depicts collecting and inputting older data where it already exists and the systematic inclusion of new information generated from ongoing activities through the use of protocols established among various government agencies. Vertical efforts should be made to install technologies and promote user capabilities at the regional, provincial and eventually municipal levels (e.g. see the LUIS project described in Appendix 1).

Biological Diversity Specific

Proposal Broker

One of the critical needs based on the BioD approach described previously entails working with the respective members of the proposed "coalition" to develop proposals and match them to appropriate funding agencies. While in some cases the institutions may have both the capability to develop a well-formed proposal and know where to send it, the consultant believes others may require assistance to tailor proposals to support Action Plan objectives and meet the typically rigorous judgement criteria of some donors.

In addition to the above there exist any number of opportunities to assist one or more of the local groups whose needs have been partially identified in Appendix 1. Particular needs identified which may interest IIED include assisting one or more of the university's develop a degree program in systematics; provide training for integrating biological diversity information into the planning process (see the NSF/National Museum project described in Appendix 1); or design a country specific training program for government officials required to enforce CITES including devising the means to tighten coordination among participating counterpart institutions.

APPENDIX 1. Institutional and Project Profiles.

The following brief institutional and project descriptions are provided to serve three purposes. First, many are specifically "keyed" to the proposed Biological Diversity study. That is, based on the assumptions and methodology described in the body of the report, institutions were sought out by the consultant which were expected to have an interest or role to play in any national endeavor concerning the topic. Where expectations were fulfilled and a particular need or role was identified as having potential relevance to the formulation and implementation of a national strategy on Biological Diversity it has been highlighted in bold print under the respective institution or project for future reference.

Secondly and less comprehensively, the list includes institutions and projects that, while possibly not demonstrating direct relevance to the topic of Biological Diversity per se, have interests in one or more aspects of natural resources management and planning with potentially valuable inputs to the design of a National Conservation Strategy or similar projects (in many cases these were the same institutions cited for the purpose above).

Finally, the list serves as a point of entre for the uninitiated to the large Filipino natural resources and environmental community.

Having noted the above, caveats must follow. First, the existing list in no way purports to be comprehensive but provides an entry point from which to build on if deemed desirable for one or more of the relevant natural resources projects. In particular due to time constraints, no attempt was made to describe many of the main line agencies responsible for natural resource sectors. Nor was their any attempt at addressing the myriad activities associated with the UP/Diliman campus. In both cases it has been assumed that in Dr. Roque's capacity as Acting Undersecretary for the Environment, UP Professor, and Chairman of the University's Research Foundation these two communities would be adequately briefed on Biological Diversity and other existing or proposed activities. This approach was further justified due to the occurrence of the consultancy in the midst of government reorganization affecting some of the agency missions. However some details of the reorganization particularly as it pertains to the natural resource sectors and descriptions of relevant projects have been provided below. In contrast as previously described in the Approach section, an attempt has been made to include institutions and projects outside of the UP/Diliman-Manila-UP/Los Banos bi-polar orbit, a feat rarely attempted by most consultants if one believes the comments originating from the provinces.

Finally, where proposed reorganization would affect institutional affiliation and approval is expected from Malacanang, it has been

noted below by the use of parentheses placed to the right of the institutional designation.

Contact people can be identified for the respective institutions and projects in Appendix 1.

Government Organizations

Government Reorganization

As a result of the past administration's "politicalization" of much of the government apparatus, widespread government inefficiencies and sharp disparities in almost all aspects of Filipino society between Manila and the regions the new administration has embarked on a reorganization program focusing on devolution and regionalization of many of government's roles and responsibilities. In terms of the management of natural resources the following recommendations originating from the Ministry of Natural Resources have been submitted to Malacanang for approval:

-most of MNR would be recast into a Department of Energy, Environment and Natural Resources;

-three Undersecretaries for Energy, Environment and Natural Resources would be created;

-the Environmental Secretariat would be divided into three Bureaus. These are the Bureau of Environmental Management (containing the old National Environmental Protection Council and National Pollution Control Commission); Bureau of Ecosystems Research (containing the old Forest Research Institute); and the Bureau of Protected Areas and Wildlife (containing portions of the old Natural Resources Management Center and Bureau of Forest Development);

-the Natural Resources Secretariat will be divided along bureaus divided into forestry, lands and mines. Fisheries will stay in the Department of Agriculture.

In addition there will be the creation of a new Central Mapping Agency which will incorporate the old National Cartographic Office, Coastal and Geodetic Survey, and the remnants of the NRMC.

The thrust of devolution in many of these and other government bodies will be to regionalize the agencies line functions retaining administrative responsibilities in Manila.

In addition to newly proposed agencies described above other relevant institutions include the following:

Institute of Plant Breeding/UPLB

The Institute of Plant Breeding (IPB) was established in 1975 to develop new and improved varieties of crops, collect, introduce, preserve and maintain a germplasm bank of existing and potentially important crops and provide technical assistance to appropriate agencies.

National Council on Integrated Area Planning (Office of the President)

With the creation of the National Council on Integrated Area Development (NACIAD) an implementing mechanism was established to promote integrated area development. The Council was given the power to formulate and integrate development plans for depressed areas and mobilize multi-sectoral resources for use in the various development programs. NACIAD has recently received EEC funding to develop an IADP for Aurora Province (Eastern Luzon) amounting to some 10.8 million ECUs which will focus on watershed development, upland agriculture, commercial irrigation, roads and social forestry. Of particular interest is an institutional strengthening component which will assist in developing an in-house environmental planning capability.

The NACIAD approach may be unique in the Philippines in providing a framework within which various government agencies from the local to the national level can be tapped to work in a "coordinated" fashion in pursuit of development objectives. This approach has been recently expanded to incorporate environmental considerations into the planning process first with the Palawan plan and now with the newly-funded Aurora Plan. They have also embarked on the development of provincial environmental profiles and more recently have shifted to a larger scale by working with local government to develop municipal environmental plans.

National Institutes of Biotechnology and Applied Microbiology/UPLB

BIOTECH was created in 1979 under the UP system. Its mandate is to search for ways to meet needs primarily in the fields of energy, food, and fertilizers. Present research includes the maintenance of cell and tissue culture systems of important agricultural crops, the use of rhizobial inoculants to increase food production in food legumes and developing new means to produce economically efficient biofuels primarily from agricultural crops and residues.

National Plant Genetic Resources Laboratory/IPB

The National Plant Genetic Resources Laboratory was set up under the IPB in 1976 to collect, introduce and maintain a germplasm bank of important and potentially important crops in essence providing IPB a broad genetic base from which to improve national crops. It also serves as the secretariat to the National

Committee for Plant Genetic Resources (the latter recommends policies, rules and regulations on plant genetic resources in the Philippines). Present facilities can hold 150,000 accessions of seeds and 30,000 in vitro accessions for long-term maintenance. There is recognition that many potentially-important species have yet to be collected and the Laboratory sponsors collecting trips to the field (often in and adjacent to the country's remaining rain forests).

In addition to the NPGRL other institutions involved in one or more aspects of genetic research include the Bureau of Plant Industries and a number of commodity-specific research institutions which conduct research in crop improvement (sugar, coconut, tobacco) including the Philippines Rice Research Institute (and the International Rice Research Institute) and natural forests (Forest Research Institute).

Philippine Council for Agriculture and Resources Research and Development/NSTA

The Council was established in 1972 for purposes of planning, monitoring, coordinating, supporting and promoting research throughout the country. Major research areas include crops, livestock, socio-economics, forestry and farming systems. It does this in part through a network of research centers and cooperating institutions numbering some 125 (these include agencies responsible for research on wildlife, parks, mangroves and dipterocarps).

PCCARD theoretically provides the means to determine most research currently underway in the country. Results from a request forwarded by the consultant produced pertinent information on recent or ongoing studies on the Philippine deer, monkey, eagle; Palawan bearcat, peacock, porcupine; and wild pigs, Tamaraw, flying lemur and several species of marine turtles. It is also interesting for purposes of perspective to note the Council sponsored a Conference and Proceedings on Parks and Wildlife Research and Development in 1981 describing current status and needs. It could be used as a benchmark in the present studies. Finally, the Council is in the process of identifying priority research areas for the five year period 1988-1992 which can be used as an indicator to determine the government priorities viz a viz natural resources and environmental research.

Philippine Institute for Development Studies/NEDA

The PIDS was established in 1977 by Presidential Decree as a nonstock, nonprofit government research institution engaged in long-term policy-oriented research focusing on social and economic development with an intent to assist the government in planning and policy making. As a government think tank PIDS is also well-connected with the Philippine academic community and contracts with them on a regular basis when the need arises.

PIDS is divided into Research, Publications and Seminar Programs. Among the recently completed publications and reports with relevance to the natural resources and environmental management include policy analysis of the forestry sector; forest management and national land use; environmental impacts associated with watershed development; and population pressure and upland environmental impacts. PIDS will in all likelihood play a major role in FFARM's proposed policy studies.

Plant Quarantine Service/Bureau of Plant Industries (DA)

The Service represents one of the four government bodies responsible for monitoring plant and animal trade in and out of the Philippines the others are Bureaus of Fisheries and Aquatic Resources, Forestry and Animal Industries). The PQS is responsible for regulating the import/export of plants, nursery stocks, fruits, vegetables etc as well as certain species of animals which could cause damage to plants. Illegal export of orchids is a problem. Assistance with regards to pest determination is sought from the Plant Quarantine Training Facility in Selangor, Malaysia where a data bank is maintained. They have the right to determine how exotic animal species are maintained when brought into the country. Major recent outbreaks of pests associated with species introduction include the jumping mite (which has severely affected the effectiveness of introducing Luceana) and golden snail which is attacking many of the country's rice varieties. Problems cited with CITES implementation are the transference of BFAR's responsibilities for marine species monitoring to the Division due to the absence of the former institution's people at ports of entry coupled with lack of training among the latter institution's personnel in that aspect of trade and doubtful regulatory authority to interdict illegal shipments.

Regulation and Control Division/Bureau of Animal Industries (DA)

This is the counterpart institution to the Plant Quarantine Service and is charged with regulating the import and export of plants and animals in the Philippines. A dualist permitting system is employed for both animal imports and exports characterized by the use of a government and CITES clearance forms required for approval (specific regulations with regards to animals are determined by administrative orders which are forwarded to the BFD as the lead agency for CITES monitoring for review and comment prior to implementation). There are no holding facilities so where quarantine is warranted it is done at the importers' expense and often on his/her own lands. In addition, there exists a problem unique to the Animal Division attributable to the 1979 regionalization of the Ministry of Agriculture leading to devolution and deployment of personnel to the regions. While regulatory control remained a central office function its enforcement was assigned to regional officers under a director who may identify other duties taking precedent over those of the Regulatory and Control Division weakening

enforcement in certain regions. Finally there is a severe bias to domesticated livestock in the division with little training and education for the other aspects of animal trade and issue of species introduction.

The system appears to suffer from absence of clear guidelines distinguishing certain tasks between the Plant and Animal Divisions as regards to the importation of animals representing potential pests to plants as well as the aforementioned problem of implementing BFAR's responsibilities for CITES. There was an attempt to harmonize the tasks of the four institutions in the previous administration through the formation of an interdepartmental commission. This initiative has been revived by the creation of a recent task force composed of the Animal and Plant Divisions, BFD and BFAR.

Academic Sector

Institute of Biological Sciences/UPLB

IBS offers a number of graduate programs and areas of specialization including advanced degrees in Botany, Zoology and Wildlife Studies. It represents one of several university colleges, institutions and departments at UP Los Banos with academic expertise related to the Haribon projects. Others include: Depts. of Entomology and Soil Science; College of Forestry; and the Institute of Environmental Science and Management.

Institute of Environmental Science and Management/UPLB

The Institute, formerly a Program (PESAM) established in 1977 within the UP/Los Banos College of Arts and Sciences, was created to develop, test and refine scientific methodologies, techniques, systems and procedures that are applicable to environmental planning and management. The approach adopted was to develop a mechanism for coordinating environmental research through an interdisciplinary approach; facilitate the development of a degree program in environmental science and management; enhance awareness among professionals etc. concerning the dimensions of environmental issues; and assist in policy formulation regarding environmental affairs. IESAM is divided into four divisions : upland agro-ecosystems; aquatic resources; environmental planning and information; and environmental education. They are well-regarded and have extensive contacts including an ongoing relationship with the E-W Center. At present a project is being developed for funding from CIDA in collaboration with Dalhousie University focused on strengthening the institute together with the old MNR and the environmental NGOs. The Institute has a number of ongoing or recently completed activities related to Biological Diversity and the NCS including the development of an integrated management plan for Lake Buhi in the Bicol River Basin funded by USAID; an ongoing research program in Palawan; and a Ford-funded project in agroecosystem research.

Silliman University/Dumaguete

This private university is characterized by a number of attributes including a strong emphasis in Marine Biology. Other points of interest are the maintenance of a small botanical garden and ongoing research funded by Ford Foundation through the Research Action Development Program coordinated by the University Research Center. The Program is funding multidisciplinary research on the Lake Balinsasayao and Negrito upland sites examining living conditions of upland farmers and promoting alternative landuse systems based on small-scale upland forestry techniques. Research projects involving rare or endangered species are concentrated in the Marine Laboratory and include research on giant clams, the Philippine Crocodile and several species of amphibians.

University of San Carlos/Cebu City

The USC is a Catholic institution with roots extending back to the 16th century with an orientation primarily to liberal arts and natural and social sciences. There exists a well-recognized Office of Population Studies which focuses primarily on demography and population dynamics and growth factors. There also exists a good base in biology with an orientation toward taxonomy. USC maintains a small herbarium and a good taxonomic collection with particular strengths in entomology.

De La Salle University

Located in Manila the DLSU Research Center has several ongoing activities which bear on upland agroecosystems research. As a participant with several other of the nation's universities in the Ford Foundation-funded Philippine Uplands Resource Center (PURC) the DLSU Center established the Project's library. The Center also serves as publisher for the PURC newsletter and will be responsible for publishing an Uplands Source Book as a reference book on uplands research in the Philippines. In addition it has been working in uplands development over the past five years including working with a number of the country's indigenous minorities (e.g. the Mangyans of Mindanao).

Xavier University

The University located in Cagayan de Oro is one of the five Ateneo Jesuit Universities established in the country. Located in Mindanao, the Southeast Asia Rural Social Leadership Institute established under the College of Agriculture together with the Research Institute for Mindanao Culture has provided it with a strong basis to work in northern Mindanao particularly with upland peoples and newly arrived lowland migrants. The IDRC has funded inter-disciplinary research in the past which included assessment of ongoing social forestry programs. In addition the

Center has been involved with introduction of sloping agricultural techniques and cash cropping.

Ateneo de Davao University

The Social Research Office of the University has been involved in rural-based social sciences research including studies on poverty among small-scale fishermen and land use techniques employed by a local indigenous people (the Bogobos). It also serves as the center of the Eastern Mindanao Area Research Consortium

The Environmental NGOs

Conservation and Resource Management Foundation Inc.

The foundation purports to have some 150 people in the field and some 12 people in the well-appointed Manila Office. Funding comes primary from two government projects and secondarily from donations. The Foundation's Board of Directors is dominated by well-placed people in the government and includes representative-elect Mitra, General Ramos, Secretary of Agriculture Domingas, Secretary of Tourism Gonzalez etc. The Foundation's activities appear to demonstrate how government/NGO partnerships can be effective in managing natural resources as demonstrated in the Calauit and the Tamaraw game reserves. The former began as an experiment in introducing 8 species of exotic African animals to the island for purposes of tourism development and eventual selling of offspring to ASEAN zoos under the direction of the Ministry of Natural Resources in 1976 before eventually being contracted to the Foundation in 1983. The project however is presently at the center of controversy due to complaints of former land owners regarding their forced removal under the Marcos regime.

The Tamaraw Conservation Management Project was developed to arrest the decline of the species and convert it into an economic resource through game ranching and developing its tourism potential.

In addition to these two projects the Foundation is embarking on a Marine Research and Development Center designed to promote the development of the giant clam (with assistance of Silliman University); dugong research; seagrass transplantation and fishery production and develop a technology for sea turtle farming.

Ecological Society of the Philippines

The organization which appears respectable due to the existence of a board of directors, constitution etc. in other ways seems to be lacking. The president of the Society operates out of a for-profit shipping company (in which he also serves in the role as president) dealing with environmental issues on an informal ad hoc basis. He estimates a membership of some 2,000 individuals

whose only requirement for joining is to note their interest in the environment. However he estimates a hard core membership of 75 people. The Society's principal contribution to the environmental scene appears to be through the submission of timely articles to the news media on a periodical basis and bringing occasional legal action when friendly persuasion doesn't work through attorneys with like-minded sympathies.

Haribon Foundation

The foundation arguably is the largest and most highly visible of the national NGOs. It was first organized in 1972 as a bird-watching society before evolving into a nature and wildlife conservation society, followed by the establishment of the foundation and subsequently broaden its mandate to include natural resources management. It has been able to achieve this status in spite of a very small infrastructure and human resource base. Physical space consists of portions of three offices scattered between Makati, Greenhills and UP/Diliman of which only the former, consisting of one room shared with an advertising firm, is the "official" office paying rent. The other space represents donations or "loner" facilities and are temporary in nature. The space constraint may ease if a proposal submitted to Green Peace International is approved. Under the direction of Haribon's Board of Directors there is a full-time Executive Director, information officer and office secretary. In addition, there exist several part-time people, some donating their time, some paid, some loaned from other projects who provide support to the organization. Membership is estimated to be 328 in Manila. In addition there are five regional chapters in Cebu (100), Los Banos (120); Davao (40); Mary Knoll (60); and UP/Diliman (30). In addition a chapter in Palawan may form soon. The organization "networks" its members with a monthly newsletter and more substantial periodicals published less-frequently. More recently, a small research program has been established to promote the development of young Filipino scientists.

Philippine Eagle Conservation Program and Foundation

The Eagle Conservation Program is perhaps the most visible conservation program in the Philippines. The origins of the project can be traced to research funded by the Charles Lindbergh Foundation in 1970 on the Philippine's monkey-eating eagle. Presently the project's field site is located on the edge of Mt. Apo National Park in Mindanao. The Project's purpose is to breed the Philippine Eagle in captivity. Its facilities are adequate and is well-supported by the government and some outside donors including most recently the Frankfurt Zoo. The Program office is in Davao. Staff include an ex-pat technical coordinator, 3 administrative and 6 field staff. Project policy is provided by a management committee which includes senior members in the government. A recently-signed MOA between the Project Director and the Bureau of Forestry Development (the official government counterpart institution) calls for the phasing out of the ex-pat

advisor and training of local Filipino staff over the next three years. The law and order issue in Mindanao and recent action near the project site are forcing re-examination of plans to move the operation to Luzon. The Foundation has been only recently created but is a legal entity and includes a Board of Directors consisting of a law firm soon to be replaced with individuals with interests more attuned to the mission, i.e. promoting environmental protection of Filipino wildlife.

Wildlife Foundation of the Philippines

The Foundation which has linkages with the Wildlife Society of the Philippines in Los Banos was organized in 1985. It suffered from establishing a Board of Directors dominated by government officials and other individuals favored in the previous government. With the advent of the new administration it has been attempting to replace these members with alternates. Induction of new members will take place in July and will mark the beginning of a new membership drive. Two proposals are presently being prepared for funding one in association with FORI and BFD which proposes a breeding project for the native tarsir. The second, possibly in association with the Crane Foundation of the United States, will attempt to re-introduce a species of crane presently found in Australia but believed to have a range originally extending to the Philippines.

In addition to the above there appear to exist a number of local organizations involved in one or more aspects of conservation and environmental management through the guise of consumer organizations, self and economic improvement institutions. I dare say no one really knows now many there are or even who they are. Some examples include Lingkod-Tao Kalikasan headed by Sister Ida in Manila and the Cagayan de Oro Consumers Movement headed by Ms. Juanita Paniomogan.

Zoological/Botanical Gardens/Museums and Collections

Association of Systematic Biologists (ASBP)

The ASBP is a national non-profit scientific organization established in 1983 to promote and stimulate research education and training in systematic biology in the Philippines, develop a network of systematic biologists, disseminate information and provide a focal point to represent the systematic community with the government and private sectors. The association is comprised of some 150 national and foreign professionals and amateurs with interests in plant and animal taxonomy. A newsletter provides a ready means to to tap this group.

Manila Zoological and Botanical Gardens

The zoo was created in 1959 by order of the mayor of Manila and as originally proposed, was to include a botanical garden was well as the zoo proper. With change in mayors the latter lost

favor and gradually went into decline and for all practical purposes is non-existent. The present zoo consists of some 557 head of animals, more exotic than indigenous though six Filipino endangered animals can be found there. The zoo is under the Public Recreation Bureau of the Office of the Mayor. There are only four technical people of which the most senior is a veterinarian under a non-technical administrator serving as superintendent on a contractual basis. The zoo suffers from budgetary constraints, lack of space and poor animal maintenance. There is no breeding education or exchange programs and initial observations indicate morale is a problem. There are other small private zoos in the country (one in Quezon and Cebu cities respectively) and discussion of developing additional city zoos in Baguio and Cebu.

Museum of Natural History/UP Los Banos

The Museum was established in 1976 and is situated directly under the Chancellor's Office and headed by a Director with eight systematic sections each under a Curator in Charge. The Museum has yet to obtain its own facility and is presently scattered between various Departments on the campus. These sections consist of a botanical, mycological and forestry herbariums; entomological, zoological and wildlife museums, algal, microbiological and wood collections, and an hortorium. The museum suffers from few systematists with most curators being naturalists with major weaknesses in flowering plants and insects.

Regarding its collections its strengths are in flowering plants, insects (the largest collection in the country) wildlife and culture collections. In addition it maintains a 5-ha. hortorium with a mixed diversity of indigenous and exotics used primarily for teaching. It also claims to have the best historical taxonomic library in the country.

National Museum (Department of Education, Culture and Sports).

The National Museum is divided into three divisions, botany, zoology and cultural affairs of which the latter predominates in terms of manpower and budgetary allocations at the expense of the former two.

In the zoology division there exist 11 curators with an additional 11 assistants covering all major taxonomic groups. The major weaknesses in terms of collections and specialists are in the plankton, crustacea, echinodermata and some classes of insects. Ongoing research projects consist of a survey of vertebrate fauna of Palawan and the Ilocos Region (Northern Luzon). Existing outreach/educational programs are just beginning and consist of environmental educational packages provided to the schools in and around Manila.

Within the Botany Division the biggest weakness appears to be in flowering plant systematics, ferns and the algae. The Division distributes a newsletter (Herbarium News) which would be useful in distributing information to a larger but tuned-in audience.

The two divisions have suffered under the Marcos regime where increased interest in indigenous cultures resulted in creation and growth of the Anthropology Division affecting such essential budgetary line items as research (three-quarter's of the total research budget goes to the former leaving a total of 320,000 pesos for the remaining two divisions respectively). However on a positive note, the old Congress Building which has served as the temporary home for the Museum's collections has recently been declared the permanent home of the National Museum.

Key areas of Filipino zoological systematic expertise and collections existing outside of the country include John DuPont Museum (Delaware); Smithsonian; and the American Museum of Natural History. With regards to botany key repositories and experts include: Kew (Dr. John Grundsfeld); Reiches Herbarium (Dr. Colin Ridgedale); Bishop Museum (Dr. Symone Sohmer); U.S. National Museum; UCLA; and Harvard University (Dr. Peter Ashton).

Ninoy Aquino Parks and Wildlife Nature Center (DEENR).

This 24 ha. park managed by the Bureau of Forestry and located in Quezon City was established primarily as an urban recreational and educational facility. The physical facilities have suffered apparently as a result of neglect by the past administration and it is currently being renovated to the extent possible within budgetary constraints. Within the Center there is a small zoo though no endangered or threatened animals from the Philippines are represented. The Center plans to begin some captive breeding programs and there are plans to develop orchid and agroforestry exhibits. Of particular interest is ongoing pilot testing of environmental education materials in conjunction with the NRMC and BFD. Results from testing target audiences selected from recent college graduate communities will provide the basis for expanding the program.

Philippine National Herbarium

The Herbarium located in the National Museum, represents the country's largest and oldest institution of its kind with some 150,000 specimens. In addition to the PNH other smaller herbaria can be found at: UP/Division of Natural Sciences and Mathematics/Baguio City (500); UP/Botany Department/Diliman (60,000); Philippine Women's University/Dept. of Biology/Manila (2,750); National Research Council/Tagig, Rizal (500); De La Salle University/Department of Biology/Manila (600); IRRI/Los Banos (655); FORI/Los Banos (500); Philippine National Botanic Garden/Real, Quezon (1,500); University of San Carlos/Dept. of Biology/Cebu (6,300); Divine Word University/Department of Biology/Tacloban City (500); Mindanao State University/Department

of Biology, Marawi City, (300); and Forest Products Research and Development Commission College/Laguna (2,280).

Proposed/Ongoing/Recently Completed Natural Resources' Projects

Assessment of the Genetic Erosion of Philippines' Crops

The National Plant Genetic Resources Laboratory of the Institute of Plant Breeding was the recent recipient of funding to document the original and present ranges of commercially and potentially important crops in the Philippines. Information will be obtained from the historical archives and will complement a high level of field research to include sampling within remaining low and upland forests.

Land Resources Project/Bureau of Soils (DAF)

This World Bank-funded project is national in scope and semi-detailed in scale classifying the nation's lands into 5 classes of potential land use for the purpose of maximizing the utility of the country's agricultural resources. In addition to biophysical data field inventories include collection of socioeconomic information all of which are being integrated into a Project-specific GIS. Reports are being released on a regional basis with intentions to follow with provincial summaries next year.

GTZ Philippine German Forest Resources Inventory Project (DEENR)

The project, a 5 year activity beginning in 1983, was designed to conduct an inventory of the country's forests. Mapping has been done at a 1:50,000 scale where aerial photography from the mid-1980s existed and 1:250,000 for the remaining portions of the country using LANDSAT imagery. Data is being released on a regional basis providing data on forest areas, timber volume, stand and stock tables by species and commercial groups, areas of regeneration and includes data on rattan, bamboo and palm occurrence. Maps will be developed to accompany the data reports at the completion of the project. There is a willingness to cooperate with one or more of the Haribon projects. Of immediate relevance to the IPAS project is the capability to determine forest status of existing national parks. Toward the end of the 1987 project data will be integrated with the development of a GIS package accompanied with training for BFD personnel.

Land Use Inventory System/NEDA

This is a an Australian-funded project coordinated by the NEDA designed to increase technical capabilities in land use planning at the provincial level of government. Specifically, small graphics-oriented data bases are being set up to provide provincial planners with the means to conduct land use mapping and potential analysis for assistance in preparing development

plans. The approach presently being implemented on a pilot site basis entails some training in Australia.

NSF/Philippine National Museum Project to list Endangered Plants of the Philippines.

NSF has provided the Bishop Museum a grant of some $16,000 to support a senior Filipino botanist from the National Museum to go to Hawaii to observe the approach recently used by the Bishop Museum to develop a viable checklist of names of endangered or threatened indigenous plants. In addition time has been allocated with appropriate government bodies to discern how the information is incorporated into State and Federal line agencies' planning functions. The project is intended to lay the groundwork for a new proposal which will be completed by the end of the year for additional NSF funding to conduct a similar study in the Philippines estimated to require some ten years. The proposed objective is to establish a list of Philippine flora based on taxonomic facts and how to use those facts in government policy making.

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APPENDIX 3

Interim Consultancy Memo

TO: Dr. Celso Roque
FROM: Random DuBois
DATE: May 10, 1987
REF: Proposed Implementation of BioDiversity and IPAS Projects to be managed by Haribon

As we are nearing the midway point in the IIED consultancy I am submitting for your review and comments my interim "findings" and thoughts in regards to Haribon's approach to project implementation. In my view the analysis has gone far enough for Haribon to take some decisions prior to making recommendations to the donors. Once these decisions are taken time remains in the contract to refine the approach, draw up individual TOEs and devlop a broader framework which incorporates other pending activities (e.g. the NCS). In the interim (2 weeks) I will be traveling for purposes of fulfilling the remaining contractual terms per IIED's request).

The analysis and subsequent initial recommendations have been largely influenced by my view that the two projects, while important and timely in their own right, should be availed of to build on Haribon's existing technical and administrative capabilities to become an institution which can generate subsequent projects in the area of natural resources management and conservation. As such I have focused more on the administrative and scheduling aspects than the technical taking the view that this largely remains the perogative of the respective project's technical staff. However, I have taken the liberty of making some suggestions with regards to approach, minor in the case of the Biological Diversity Study (BD) and more significant for the less-detailed Protected Areas study (IPAS).

Haribon Institution Building

From my perspective to achieve the aforementioned objective two needs are self-evident. Haribon needs a fulltime technical and administrative staff capable of both supporting the two projects and generating future projects and it needs space. While I believe I have a solution to the former I come up lacking with regards to the second.

The key to the former is based on modifying project design and scheduling of the two projects in such a way to provide Haribon the opportunity to assemble a highly-qualified technical and administrative staff to service the projects. This staff will serve as a "critical mass" of talent which, while carrying out duties associated with project implementation, will be expected to generate "new business" in the form of innovative ideas and approaches to the conservation and natural resources management and the

environment packaged in the form of fundable proposals. There are a couple of "strings" and assumptions associated with this approach. These are: the projects' budgets and schedules are flexible enough to assemble the "critical mass" of talent; space can be found to house them in a single facility; a "esprit de corps" and loyalty to Haribon can develop to enable the staff to work effectively as a team and ensure their remaining with Haribon for the foreseeable future.

Project Structure and Budget

With the above objective in mind four scenarios (with attendant subscenarios) were examined with regards to project structure and their associated budgetary ramifications (Figures 1-4). Figure 1 depicts the existing situation if the projects were implemented in their present form. Figures 2 - 4 present various combinations of staff (President, Project Director, Senior and Assistant Researchers and support staff). Based on the two proposals' staff salary estimates Tables 1 - 4 were constructed showing comparative costs (where they differed I took the higher figure). An added set of subscenarios were determined for a BD project shortened, for reasons which I will go into below, from the originally proposed 18 months to 15 and 12 months respectively.

I feel the existing scenario is both inefficient with regards to project implementation and not in the best interests of Haribon for the following reasons:

1) there is no single person providing continuous oversight for the implementation of the two projects;

2) there is additional administrative structure to service the two projects and, at risk of giving offense, Haribon's existing staff appears to be fully-loaded with ongoing activities;

3) the two projects (and Haribon) fail to benefit from economies of scale (e.g. sharing the cost of a cartographer and other support staff);

4) in the BD study there is no continuity of personnel with individuals contributing to the project on an intermittent basis throughout the project duration; and

5) the two projects stand independent of one another failing to take advantage of the obvious benefits of complementarity.

The commonality between Figures 2 - 4 absent in Figure 1 is the need for a full-time Filipino Project Director (or part-time in conjunction with research duties as depicted in

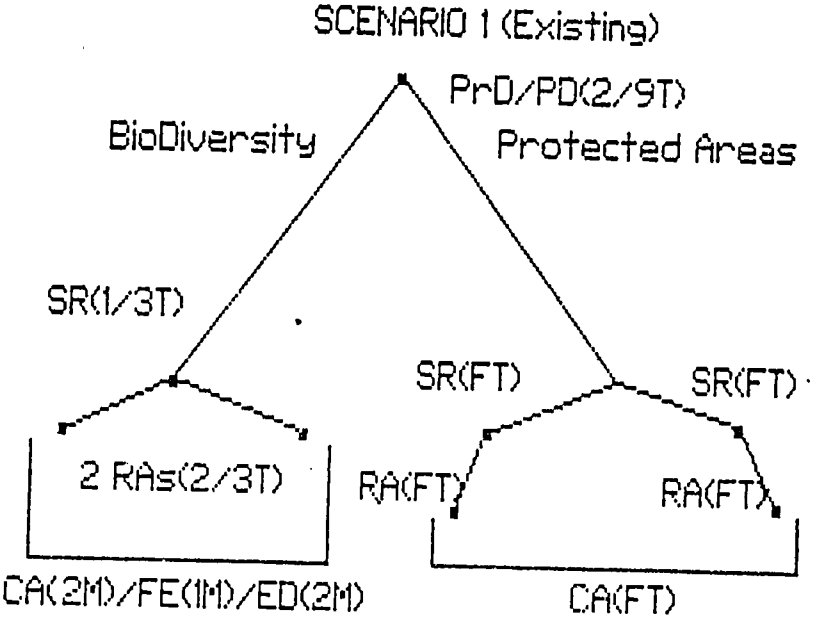


Figure 1.

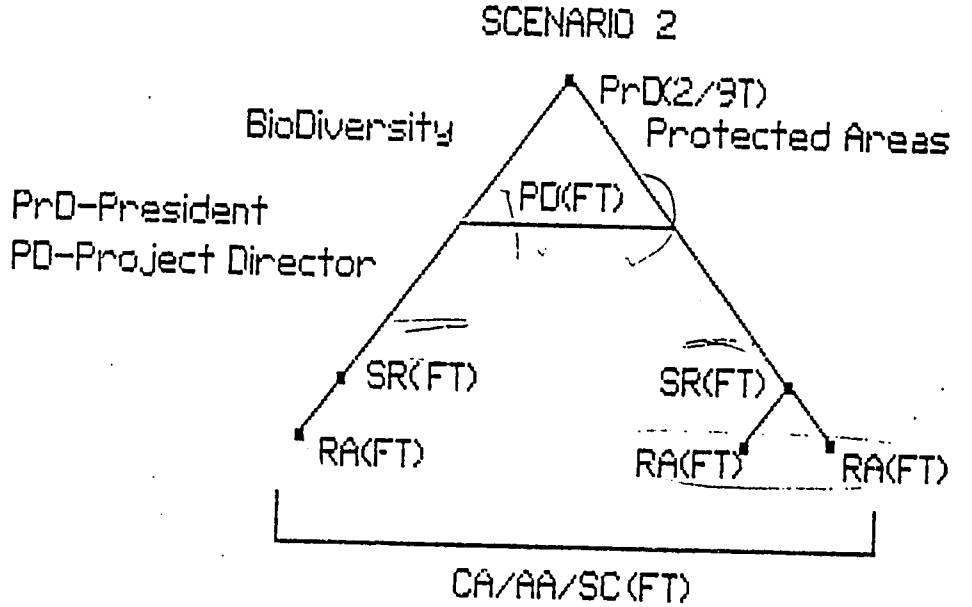


Figure 2.

AA-Administrative Asst.
SR-Senior Researcher
FE-Financial Expert
ED-Editor
RA-Research Assistant
CA-Cartographer
SC-Secretary

Table 1. Calculations of Staff Costs for Implementation of BioDiversity and Protected Areas Projects for Scenario #1 (Existing).*

Position	Calculations			Version**	
	BioDiversity Time X Cost	Protected Areas + Time X Cost	= To Cost	Months (15) A.	(12) B.
Project Director (PD)	4 X 12	+ 0 X 12	= 48	48	48
Senior Researcher (SR)	6 X 10.5	+ 12 X 10.5 X 2	= 315	315	315
Researcher Assistant (RA)	12 X 3.5 X 2	+ 12 X 3.5 X 2	= 168	168	168
Cartographer (CA)	2 X 4	+ 12 X 4	= 56	56	56
Editor (ED)	2 X 8	+ 0 X 8	16	16	16
Financial Expert (FE)	1 X 12	+ 0 X 12	12	12	12
Grand Totals			615	615	615

* Values in person months and thousands of pisos ($1 US = 20 pisos).
** Refers to versions described in accompanying text wherein the Biological Diversity study is reduced to 15 and 12 months respectively.

Table 2. Calculations of Staff Costs for Implementation of BioDiversity and Protected Areas Projects for Scenario #2.*

Position	Calculations								Version**	
	BioDiversity Time	X	Cost		Protected Areas + Time	X	Cost	= To Cost	Months (15) A.	(12) B.
President (PrD)	4	X	12		+ 0	X	12	= 48	48	48
Project Director (PD)	18	X	12	X .5	+ 12	X	12 X.5	= 180	162	144
Senior Researcher (SR)	18	X	10.5		+ 12	X	10.5	= 315	284	252
Researcher Assistant (RA)	18	X	3.5		+ 12	X	3.5 X 2	= 147	137	126
Cartographer (CA)	18	X	4	X .5	+ 12	X	4 X.5	= 60	54	48
Editor (ED)	2	X	8		+ 2	X	8	= 32	32	32
Administrative Asst (AA)	18	X	2.5	X .5	+ 12	X	2.5 X.5	= 38	34	30
Secretary (SC)	18	X	2	X .5	+ 12	X	2 X.5	= 30	27	24
Grand Totals								850	748	704

* Values in person months and thousands of pisos ($1 US = 20 pisos).
** Refers to versions described in accompanying text wherein the Biological Diversity study is reduced to 15 and 12 months respectively.

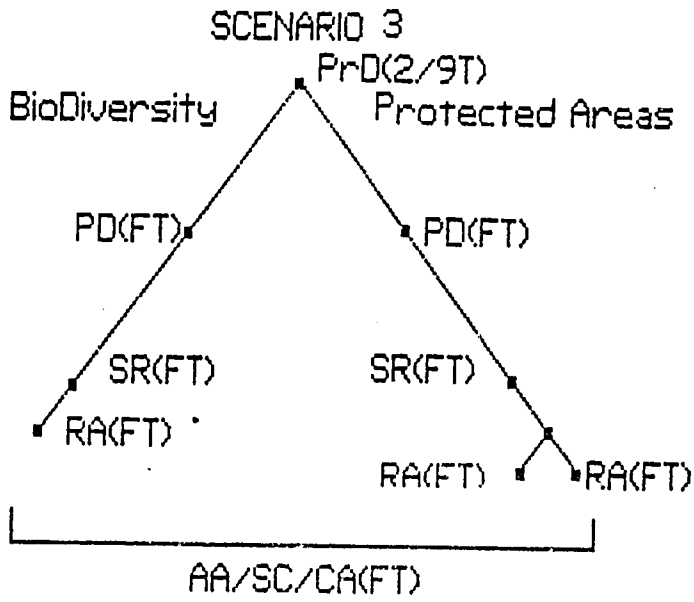


Figure 3.

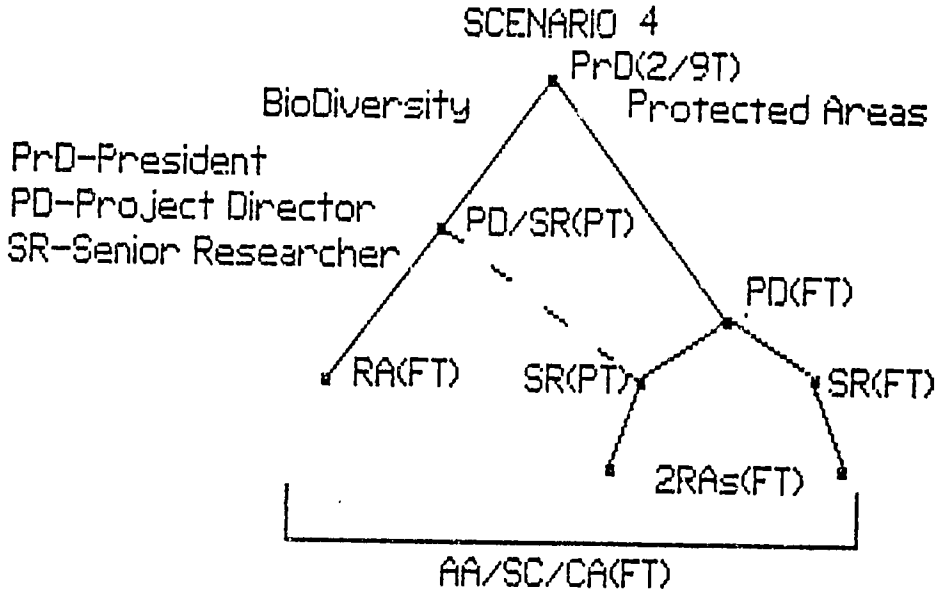


Figure 4

RA-Research Assistant
AA-Administrative Assistant
SC-Secretary
CA-Cartographer

Table 3. Calculations of Staff Costs for Implementation of BioDiversity and Protected Areas Projects for Scenario #3.*

Position	Calculations								Version**	
	BioDiversity Time	X	Cost		Protected Areas + Time	X	Cost	= To Cost	Months (15) A.	(12) B.
President (PrD)	4	X	12		+ 0	X	12	= 48	48	48
Project Director (PD)	18	X	12		+ 12	X	12	= 360	324	288
Senior Researcher (SR)	18	X	10.5		+ 12	X	10.5	= 315	284	252
Researcher Assistant (RA)	18	X	3.5		+ 12	X	3.5 X 2	= 147	137	126
Cartographer (CA)	18	X	4	X .5	+ 12	X	4 X.5	= 60	54	48
Editor (ED)	2	X	8		+ 2	X	8	= 32	32	32
Administrative Asst (AA)	18	X	2.5	X .5	+ 12	X	2.5 X.5	= 38	34	30
Secretary (SC)	18	X	2	X .5	+ 12	X	2 X.5	= 30	27	24
Grand Totals								1030	940	848

* Values in person months and thousands of pisos ($1 US = 20 pisos).
** Refers to versions described in accompanying text wherein the Biological Diversity study is reduced to 15 and 12 months respectively.

Table 4. Calculations of Staff Costs for Implementation of BioDiversity and Protected Areas Projects for Scenario #4.*

Position	Calculations									Version**	
	BioDiversity				Protected Areas					Months	
	Time	X	Cost		+ Time	X	Cost		= To Cost	(15) A.	(12) B.
President (PrD)	4	X	12		+ 0	X	12		= 48	48	48
Project Director (PD)	18	X	12	X .25	+ 12	X	12		= 198	189	180
Senior Researcher (SR)	18	X	10.5	X .25	+ 12	X	10.5	X 1.5	= 236	228	220
Researcher Assistant (RA)	18	X	3.5	X 2	+ 12	X	3.5	X 2	= 210	189	168
Cartographer (CA)	18	X	4	X .5	+ 12	X	4	X.5	= 60	54	48
Editor (ED)	2	X	8		+ 2	X	8		= 32	32	32
Administrative Asst (AA)	18	X	2.5	X .5	+ 12	X	2.5	X.5	= 38	34	30
Secretary (SC)	18	X	2	X .5	+ 12	X	2	X.5	= 30	27	24
Grand Totals									852	801	750

* Values in person months and thousands of pisos ($1 US = 20 pisos).
** Refers to versions described in accompanying text wherein the Biological Diversity study is reduced to 15 and 12 months respectively.

Figure 4). Given the complexity and duration of the two projects together with Haribon's existing project demands this is viewed as critical to project implementation.

Reviewing the comparative costs of Figures 2-4 it is my view in light of budgetary constraints, project demands and institution strengthening the preferred structure is represented in Figure 2. This proposes: a fulltime project director whose time will be split 50:50 between the two projects; two fulltime senior researchers; three research assistants (one for BD and two for IPAS due to the latter's commitment to a high level of field time; and a project service staff composed of secretary, cartographer and administrative assistant.

The budgetary ramifications of the alternative structure represented by the difference in costs between the existing situation and Scenario 2 ranges from 89,000 (12 month subscenario) to 235,000 piso (18 month scenario) or $4,450 and $23,500 respectively. While the latter figure can not be supported within the existing budget perhaps the former can be carved out of the existing line items for printing and telephone which appear to be somewhat high in the BD proposal. The figure could be further lowered by merging the duties of secretary and administrative assistant. The other thought, which will be expanded on below would entail adjusting the two projects timetables so research staff could be reduced by an individual. Please take note no account was made for an editor.

To more fully integrate the two projects with the remaining Haribon activities I would recommend the projects be coursed through the Office of the Executive Director. This brings me to possibly the most significant impediment to objective achievement.

It is no secret that space is a constraint to Haribon and will impede effective project implementation. While I recognize the problems and underlying budgetary issues of relocating my view would argue for taking a risk by consolidating in a larger area capable of supporting both existing activities and servicing the new project staff. As noted previously, this view is based on the "critical mass" assumption proposing that if staff recruitment and project design and scheduling is carefully planned it can lead to an economically viable and self - sustaining institution capable of paying for itself. Of course if alternative office arrangements could be made available at reduced costs, even if only for the life of the projects, through a contribution from the community or other source this would be the ideal situation. I note there is no overhead included in either project which the donors, I assume, envisioned as an in-kind contribution and suspect this is not a viable source for paying for space.

Project Design and Scheduling

I have taken the liberty of putting the information derived from the two project proposals into a computer software program designed to facilitate project management (1.1 version of Harvard Total Project Manager). While I have my reservations about the Program (more from some built-in quirks contributing to reduced flexibility than failure to do the job) I believe it could be useful to "track" the projects and assist Haribon in preparing project reports. If you agree, at the conclusion of the contract I will make available both the software and data to avoid having to begin again. Alternatively, if your staff prefers another product (e.g. Microsoft Project) you may find the hardcopy generated by HTPM useful for inputting into the other program.

The following interim project design assessments are built on two sets of charts produced by the software. These are "flowcharts" depicting project event descriptions and dates. As you know the program is capable of generating a great of additional information (e.g. personnel costs, loading time, pert charts, etc.) but this information is academic until the projects become better defined.

Biological Diversity Project (BD)

In light of the aforementioned the present approach to BioDiversity (BD) is neither efficient nor particularly supportive in building up Haribon as an institution. This is primarily attributable to the long period proposed for the development of the Action Plan (18 months). This time period, together with budgetary constraints and proposed staff needs causes Haribon to recruit staff on an intermittent basis rather than hire people for full-time positions. To address this problem one or more of four parameters needs to be adjusted: reduce staff, increase budget, transfer monies between budgetary line items, and/or reduce length of the project. As noted above I opted for a combination of the latter two.

Prior to proposing specific shifts in line items a more detailed analysis is required. However, I question the figure of $7,300 and $3,000 estimated for the costs of printing and telephone/telex costs respectively. These would seem obvious candidates for shifting of funds amounting in total to $10,300 of a $30,100 project.

With regards to project duration I have looked at three scenarios i.e. 18, 15 and 12 months (Tables 1-3). I fail to see why 18 months is required to develop an action plan. There exists ample opportunity to shorten the project without adversely affecting the outcome (e.g. the three

months originally proposed to develop the agenda, organize the conference and invite participants leading up to the National Conference could be done simultaneously during paper preparation). I personally feel the project could be cut back to 12 months with a much improved and efficient product.

Referring to Charts Ia. and b. please note they generally reflect the outline originally proposed by IIED. However I have taken some liberties in integrating some added roles and responsibilities for Haribon in part to justify the hiring of fulltime staff. These are:

1) Id SterC-2ndTFMt. The formation of a Steering Committee composed of "wise men" is recommended to provide overall direction to the project, provide an "honest broker" role in taking decisions which could buffer Haribon and yourself from charges of bias in response to potentially controversial recommendations, and provide a liaison role between the Haribon and the Action Plan's "end users" in the government and private sectors. This was not budgeted for and has been estimated to signify a cost of $50 x 7 meetings;

2) CoordMt. The original proposal calls for an organization meeting of donors but does not state where. In light of the number of donors (direct and indirect) I recommend it should be in Washington, D.C. where most of them reside and assumed you would travel there rather than vice versa. This was not budgeted for though I think we could make the case that it should come out of IIED's budget or constitute and add-on to Haribon's budget;

3) DataRev-WS Doc. With regards to the IUCN contract I am struck with the irony of contracting services to a non-Filipino non-resident institution to conduct a data search on information pertaining to the Philippines. I believe their role in assisting in development and maintenance of a BD data base is much more warranted and they could productively contribute to framework development in the IPAS Project (see below). Be that as it may, I suggest a key role of the project's technical staff would be to complement the CMC data search with an in-country review and compilation of the literature (particularly the grey literature not likely to be in CMCs data base). This would subsequently be integrated by Haribon project staff with IUCN's product in anticipation of the technical workshop.

4) DataGaps. In the original proposal there is mention of a locally-based working group responsible for filling of data gaps identified in the Technical Workshop and not covered by the commissioned papers. I see this as the responsibility of the technical staff.

Chart: 1a Haribon Project: "Biological Diversity Action Pl
Project: Haribon
10-Nov-1987
Page 1

Chart.1a Haribon Project: "Biological Diversity Action Pl
Project: Haribon
10-May-1987

Chart: 1a Harlbon Project: "Biological Diversity Action Pl
Project: Harlbon
10-May-1997
Page 1

Chart 1a Harrison Project: "Biological Diversity, Action Pl
Project: Harrison
10-Nov-1987
Page 1

Chart 1a Haraiba Project: "Biological Diversity Action Plan"
Project: Haraiba
10-May-1993

ID	Task	Start	Finish
1	HeendsDe		
2	Draft and Coordinate with Donors the		
3	Id WS Ps		
4	Identification of in-country Workshop		
5	WS Mechs		
6	Complete all preparations for		
7	IUCN Sub		
8	Submission of the results of the IUCN		
9	Rept#1		
10	Prepare monthly progress and		
11	Rept#2		

Chart.1QHaribon Project: "Biological Diversity Action Pl
Project: Haribon
16-May-1991

IntegrM1
9-Oct-87

IUCN Rev
MS Doc

Review of results of the IUCN Data Search

Preparation of Workshop

3rdSCMet

Third Steering Committee meeting to

ReptM3

IdentAut

Identify potential authors for

SelectAu

Chart 1a Caribbean Project: "Biological Diversity Action Pl
Project: Caribbean
10-May-1987
Page 1

Chart.1a Haribon Project: "Biological Diversity Action Plan
Project: Haribon
10-May-1987
Page 0

5thSC Me→

Fifth Steering Committee Meeting.

Rept#5→ Rept#6→ Rept#7→

Monitor→

Monitor progress of commissioned

DataGare→

Conduction of in-country

ComAuth→ PaperSub→ Draft Re→ FinalPap→

Commission Authors for preparation of

Submission of papers for review.

Review of draft papers submitted by

Finalization of papers.

AgendaM2→

Draw up agenda of National Conference

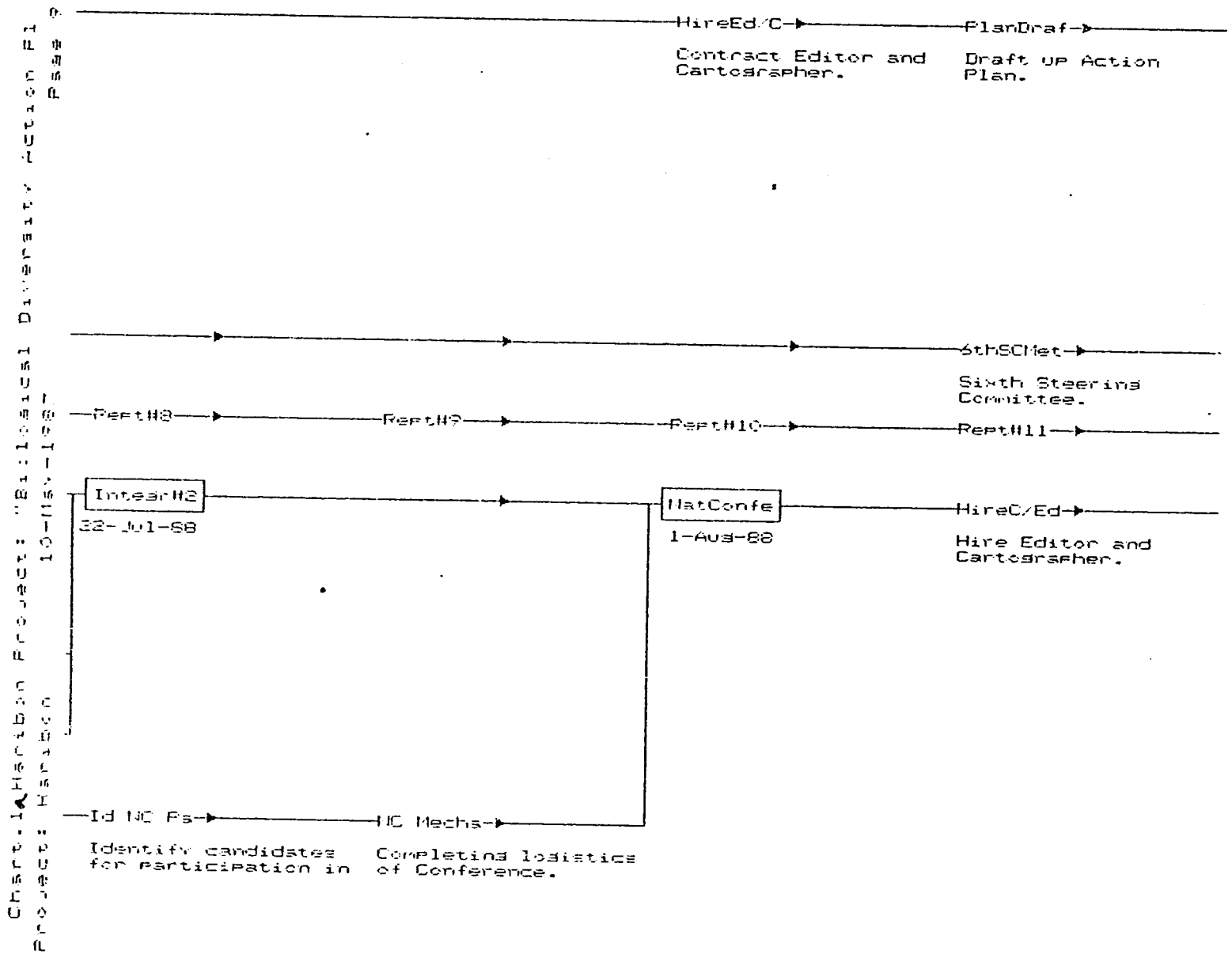


Chart 1: Caribbean Project: Bilateral Diversity Action Plan
Project: Caribbean
10-May-1988
Page 1
HireEd/C
Contract Editor and Cartographer.
PlanDraf
Draft up Action Plan.
6thSCMet
Sixth Steering Committee.
ReptW8
ReptW9
ReptW10
ReptW11
IntegrW2
22-Jul-88
NatConfe
1-Aug-88
HireC/Ed
Hire Editor and Cartographer.
Id NC Ps
Identify candidates for participation in
NC Mechs
Completing logistics of Conference.

Chart: Caribbean Project: Multilateral Diversity Action Pl
Project: Caribbean
10-Nov-1987
Page 1.0

Chart: 1 Harabon Projects: Biological Diversity Action Pl
Project: Harabon
10-May-1988 Page 11

5) **Monitor.** In addition it would be the duty of the technical staff to monitor and comment on the papers ensuring their quality and timely submission. The product from these two steps would be integrated into a set of background papers in time for the National Conference.

With regards to timing, despite the recommended 15 month time frame, I have based the steps leading to the Action Plan as modified above on an 18 month basis (Chart 1b.). This reflects the time required to input a new set of figures into the computer program until we get a clear signal on project duration.

I proposed an optimistic pre-project startup scheduled for 18 May with end of project scheduled for 29-Oct-1988. The program has accounted for Filipino holidays and their exists enough buffer to account for slippage before being faced with the slow down and diversions associated with the 1988 Christmas period.

Integrated Protected Area System Project (IPAS)

The IPAS project was much less-detailed than the BD proposal which gave me the opportunity to take added liberties in "tinkering" with the approach. With regards to the specific steps proposed in Chart 2a.:

1) **IdStCor.** I have assumed the formation of a IPAS Steering Committee for the same reasons as outlined above;

2) **DraftFrW.** Following the StartWor milestone I have suggested it be the technical staff's responsibility to draft a research framework (differing from the workplan), which is based on the theoretical underpinnings supporting the "why and how" behind the establishment of an integrated protected areas system but tuned to the Filipino reality. Such a framework should address the key questions of what are the objectives of an IPAS, how can an IPAS be formed and maintained, and what elements constitute an IPAS. This framework would be discussed with appropriate institutions and individuals and modified accordingly.

3) **Category - Priority.** Based on the existing literature and data analysis the country's existing protected areas would be classified and prioritorized (if possible) in regards to their significance viz a viz the adopted framework. The prioritorization step has been included for purposes of maximizing field time by reducing the some 60 - odd national protected sites to be visited and assumes that sufficient information exists that an initial cut can be made.

4) **DeveNorm-RefineFM.** Following the classification milestone a research methodology to include a means to

Chart.1b Haraibin Project: "Biological Diversity Action Pl
Project: Haraibin 10-May-1987 Page 1

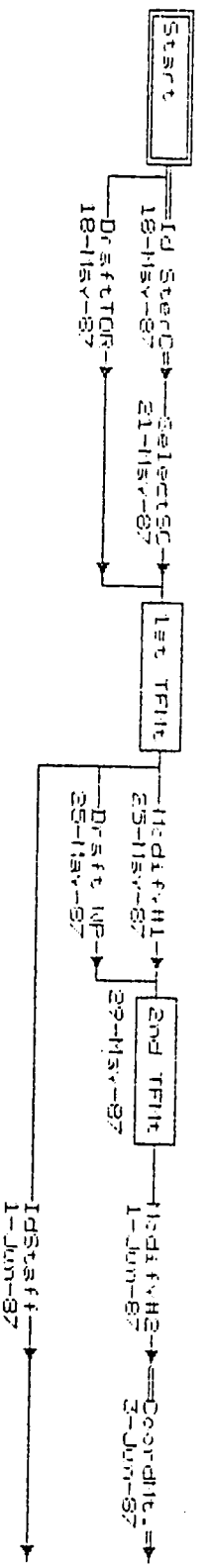


Chart.1b Haribon Project: "Biological Diversity Action Pl
Project: Haribon 10-May-1987
Page 2

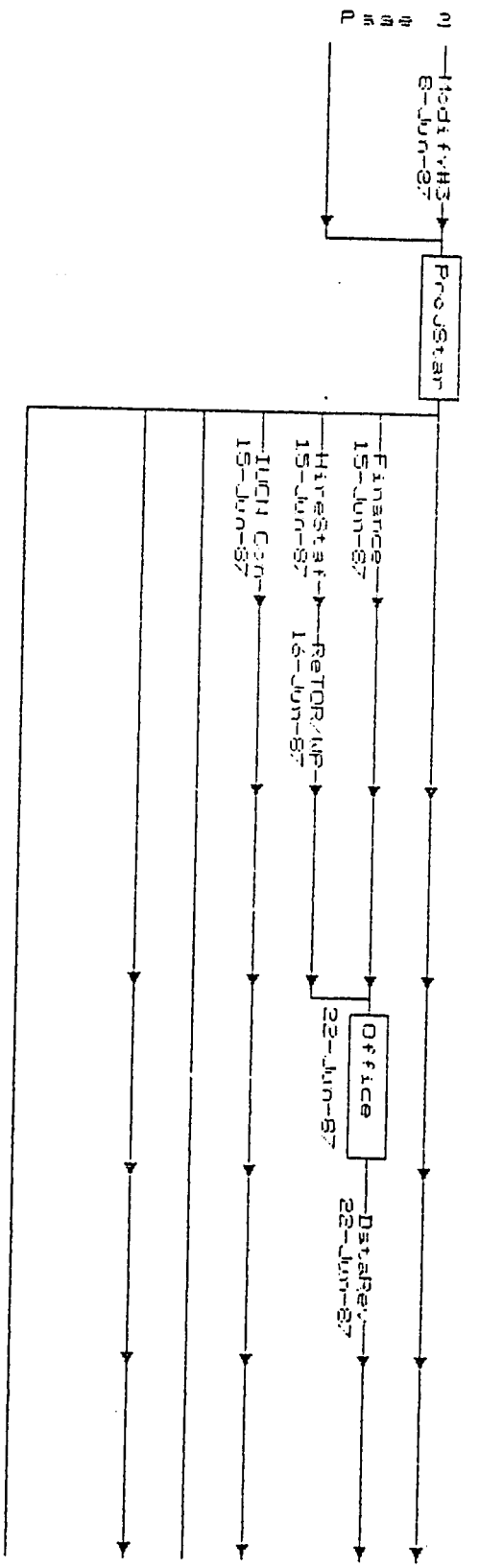


Chart: Harrison Project: "Biological Diversity Action Pl
Project: Harrison
10-Nov-1987
Page

Chart: Horizon Project: "Biological Diversity Action Pl
Project: Horizon
10-May-1987
Page 4

Chart 1: Harbin Project: "Ethological Diversity Action Plan"
Project: Harbin
10-May-1987

Chart: Harlbon Projects: "Biological Diversity Action Pl
Project: Harlbon
10-May-1987
Page

CHART 24. Haribon/WWF/U.S. Integrated Protected Area System project
Project: Haribon2
10-Mar-1987
Page 1

Chart 2 Haribon/WWF/U.S. Integrated Protected Area System Project
Project: Haribon2
10-May-1987
Page 2

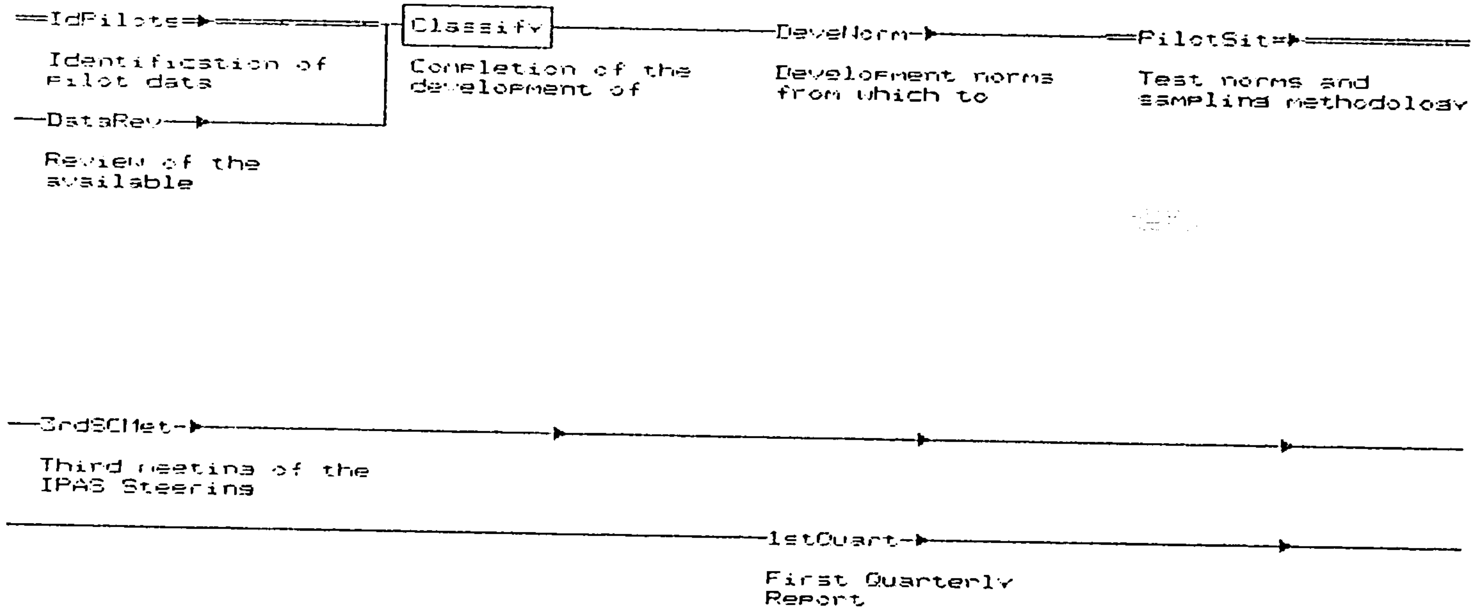
Chapter 2 Description/WWF/U.S. Integrated Protected Area System Project
Project: Haribon2
10-May-1997

Chart 2a Haribon/WWF/U.S. Integrated Protected Area System Project
Project: Haribon2
10-May-1987
Page 1

Consult	ModifyFW	Category	Priority
Review research framework with	Modify research framework from	Categorize existing protected areas	Prioritorize existing protected

Chart 2a Haribon/WWF/U.S. Integrated Protected Area System Project

Project: Haribon2 10-May-1987



Chaffee Habitat (WWF/U.S. Interagency Planned Irrigated Rice System Project
Project: Habitat2
10-Mar-1987
Phase
0
RefineFld
Refine field methodology based on
FieldMob
Full field mobilization.
FieldImp
Implementation of field phase of IPAS
DataAnal
Analysis of data collected from the
4thSCMet
Fourth Steering Committee Meeting.
2ndQuart
Second quarterly report.

Project: Haribon/WWF/U.S. Integrated Protected Area System Project
Phase I.
10-May-1993

DraftRep

Draft IPAS Report.

ReviewDr

Review of draft of IPAS report.

ModifyRe

Incorporated comments and

SCPresen

Presentation of IPAS report to the

5thSCMet

Fifth Steering Committee Meeting

3rdQuart

Third quarterly report.

Harribon/WWF/U.S. Integrated Protected Area System Project
Project: Harib0n2
10-May-1997
Page 8

measure site "quality" will be developed from which the selected sites will be "quantified" to the extent possible. This methodology will be tested at 2 - 3 field sites selected for their diversity. Initial results will serve to modify the sampling design if required. This step will be followed by full field mobilization.

The remaining tasks and milestones are relatively straightforward with two months allocated for the data analysis phase prior to report preparation.

Referring to Chart 2b. pre-project start-up is scheduled for 3 August 1987 with end of project scheduled for 12 August 1988. This provides for full field mobilization in early-November timed to coincide with the onset of the dry season. It estimates some 5 months in the field and already has accounted for Christmas and other national holidays. However it is assumed not everyone will be in the field for the full period with periodic trips back to Manila.

InterProject Complementarity

With regards to coordinating activities between the two projects I have suggested their implementation be staggered to provide Haribon time to "gear-up." Accordingly the BD study would come on-stream followed by the IPAS study in a little over two-month's time. With regards to personnel shared between the two projects one concern with this approach, attributable to BD project duration, is individuals would have to begin as part-time employees before becoming fulltime and then shifting back to their former status at the termination of the IPAS project.

Referring to Chart 3, three bar charts (two depicting project weeks and a third key milestone dates) have been prepared which attempt to identify key points of interaction between the two projects. These coalesce around three clusters:

1) sharing data between the two projects during their respective data review phases (including results from IUCN's data base search) with the burden being on IPAS to provide relevant information in time for BD's preparation of an integrated Technical Workshop Document scheduled for 18-September;

2) input from IUCN to IPAS in preparing the theoretical framework and sampling methodology scheduled for finalization on 14-September and 30-October respectively; and

3) integration of the results of the IPAS study into the National Conference background documents scheduled for 1-August, 1988.

CHART 26. Harabon/WWF/U.S. Integrated Protected Area System Proje
Project: Harabon2 9-May-1987
Page 1

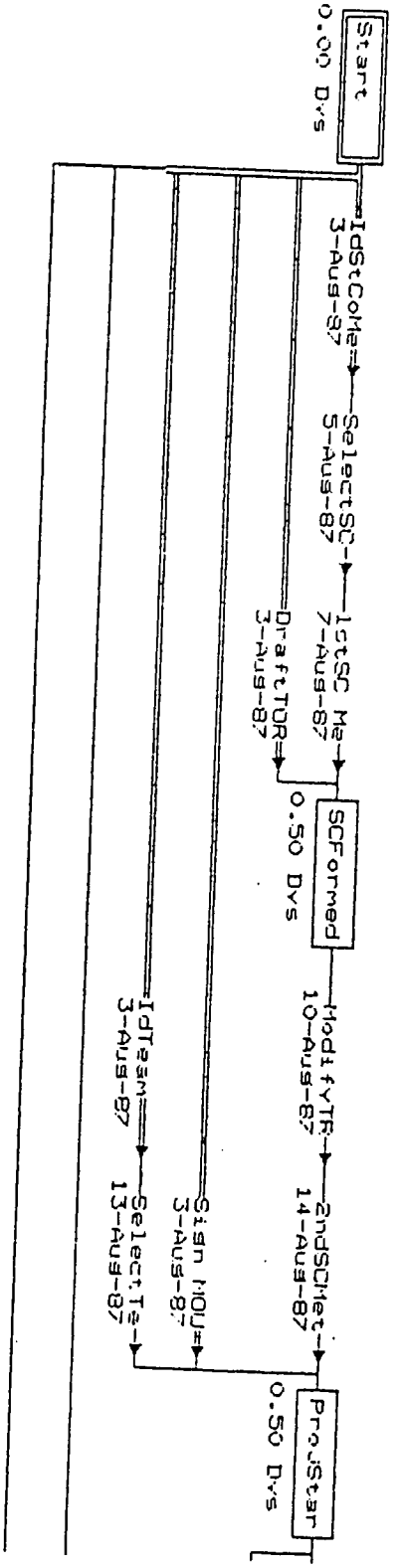
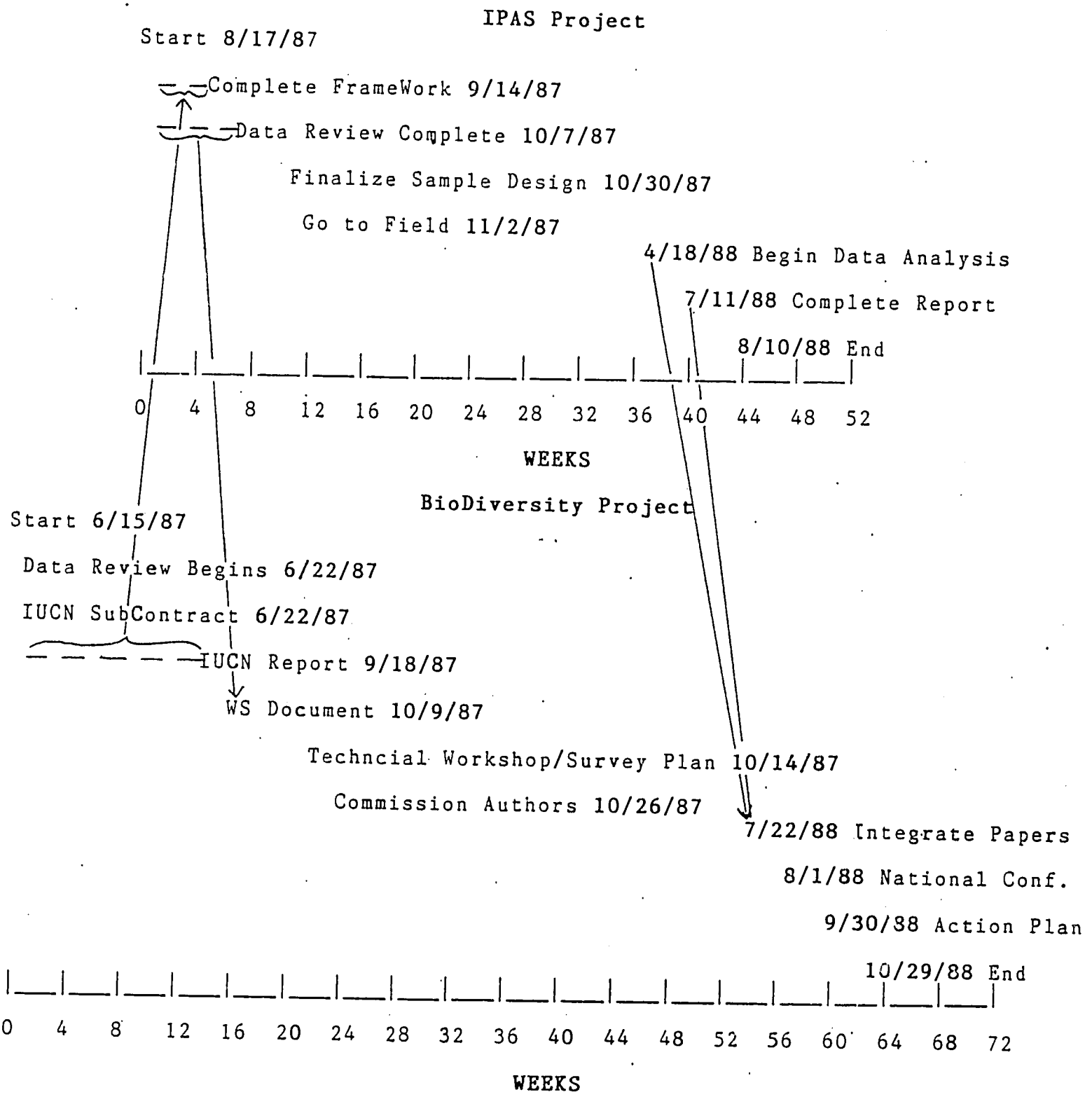


Chart2 Haribon/WWF/U.S. Integrated Protected Area System Project
Project: Haribon2
9-May-1987
Page 2

Chart2b Haribon/WWF/U.S. Integrated Protected Area System Project
Project: Haribon2
9-Mar.-1987

Harlbon/WWF/U.S. Integrated Protected Area System Project
Project: Harlbon2
9-May-1988
Page 1

Chart 3. Comparative Bar Chart Depicting Key Milestones and Dates for Biological Diversity and Integrated Protected Areas System Projects.



The existing task and milestone dates appear to support these exchanges with possible increased effectiveness obtained by moving BD back or IPAS up or a combination of both by a week or two. This could also be obtained by adjusting time durations of the relevant tasks within the projects as well.

Finally, it is obvious that clear delineation of who is going to do what during the data search phase involving IUCN, IPAS and BD personnel is required to maximize the usefulness of project resources.

I hope this overly - long memo provides enough information for Haribon to take some decisions particularly with regards to project staff levels, administrative structure, implementation schedules and space requirements from which we can move to the next level of detail.

APPENDIX 4

A Proposed Conceptual Approach to the Development of A National Conservation Strategy for the Philippines

Introduction

The present moment in the Philippines is a propitious time for the development of a national strategy to manage the country's natural resources. The need for a such an approach is clearly evident as widespread poverty, marked disparities in national wealth, and rising expectations among a rapidly growing population are major driving forces behind the seemingly omnipresent environmental degradation and nonsustainable uses affecting the country's rich natural resource base. On a more positive note the recent change in administration, reorganization of the government including the creation of a new Department of Energy, Environment and Natural Resources (DEENR) and renewed emphasis on regionalization and devolution of many government functions signifies a potentially more efficient and flexible institutional framework within which such a strategy can be developed and implemented.

Some Considerations

In essence the proposed goal of the Philippines' National Conservation Strategy (NCS) is to define a series of relationships between man and his surrounding environment which serves to increase his basic economic and social well being while maintaining the integrity of the respective natural and underlying life support systems on which he depends and propose the means for their achievement. In light of the aforementioned goal a number of considerations need be incorporated into the design of an NCS to make it relevant to the Filipino context.

The first consideration pertains to defining the concept of national strategy in a country characterized by

its archipelagic nature; highly diverse cultures; and large range of type and quality of natural and human livelihood systems distributed throughout the country's many islands.

Put simply, one must question if a single effective and implementable conservation strategy can be developed with the needed flexibility to be able to address regions and environmental issues as diverse as Laguna de Bay, Palawan and the islands of the Central Visayas. An alternative to such an approach is the development of a series of regional strategies which in aggregate constitute a national approach. This latter concept has several precedents including the use of political regions in the development of the Malaysian NCS. However, in light of archipelagic nature of the Philippines other regions should also be considered including physical regions (e.g. small island ecosystems and large river basins) or regions defined by specific issues (e.g. pollution of Laguna de Bay).

Another consideration pertains to lessons from past attempts at managing the nation's natural resources. For a host of reasons it is clear that efforts by the government sector under the past administration to manage natural resources were less than successful. The few bright spots where successful management approaches did occur seem to share the commonality of partnership between the government and private sectors usually in the form of an academic institution or environmental NGO (e.g. Mt. Makiling and UP/LB's role in management; Sumilon Island and participation of Silliman University; the Conservation Foundation of the Philippines and the management of the Tamaraw reserve and Calauit Island). In view of these examples, the magnitude of the problem faced by the mainline government agencies and the experience gained among the NGO community, it is clear these institutions should be brought into any forum which purports to formulate a NCS. Of particular value is the experience of the NGOs and academic institutions working in rural areas with migrants and/or indigenous groups

modifying patterns of land use as it relates to one or more aspects of natural resources conservation.

A third consideration concerns the more practical aspects of developing such a strategy particularly with regards to the physical scope and timetable of NCS development. In light of the diversity and magnitude of environmental issues which presently exist in the country, competing priorities demanding government attention, and existing financial and human resource constraints a phased approach is required. However, early implementation even on a partial basis is deemed essential to guard against the strategy becoming a theoretical exercise and rapidly losing momentum prior to reaching the stage of implementation. This could perhaps best be achieved through the early selection of pilot sites for which regional strategies could be developed.

Finally, in recognition of the number of ongoing activities at both the national and regional/local levels bearing some relevance to one or more aspects of an NCS and the expected budgetary constraints, an active role should be taken to coordinate with relevant institutions and projects to achieve economies of scale as well as benefit from their experience in dealing with one or more aspects related to natural resources conservation. This should be done both at the broader national planning level and on the ground where the initial strategies are proposed for development.

The Proposed Approach

The proposed approach leading to the development of an NCS consists of four discrete phases implemented sequentially. These are: an initial planning phase; pilot site selection and strategy development; implementation of initial site strategies and replication of approach in other localities; and integration of the results from the development of regional strategies into a national strategy.

The proposed planning phase consists principally of finalizing project design, establishing the appropriate administrative structure required to support the development of the NCS at both the national and regional levels, and the development of a theoretical framework governing the development of regional strategies, in essence a draft NCS against which the results of field studies can be compared prior to its finalization.

As an initial step to achieving these objectives a National Steering Committee (NSC) would be set up composed of representatives from appropriate government, academic and private sectors (including the environmental community) to be headed by the Undersecretary for the Bureau of Environmental Management (DEENR). This group would be expanded once the regional projects came on-stream to include regional Department representatives from selected pilot sites.

The specific responsibilities of the steering committee would be to provide over all policy direction to the project; review previous attempts at developing a conservation strategy and incorporate past lessons in project design; participate with selected outside resource persons and the NSC secretariat in the design of the project and framework preparation; develop criteria for the selection of pilot sites and finalize site selection; provide a focal point and facilitate coordination and cooperation with other government agencies and projects at the national level where their respective activities are

viewed as relevant to the development of the strategy; provide a periodic review and comment function during the course of the activity; and identify institutions that should be involved in the process.

To assist the NSC in fulfilling the aforementioned roles it is considered essential for purposes of efficient administrative backstopping and project continuity that a secretariat be established within the Bureau of Environmental Management with the sole responsibility of supporting the development of the NCS. Depending on manpower availability and budgetary resources the secretariat could provide solely an administrative function or be broadened to include a technical capability with the latter option preferable. This would relieve the NSC from some of its responsibilities and accordingly require a modification in its terms of reference.

During the preliminary stage of the NSC the secretariat's responsibilities would include: organizing a series of workshops in an attempt to reach consensus on project design; inventory ongoing government activities and projects to include descriptions, breadth and scope, lead and participating institutions, and site of intervention; drafting up site selection criteria; and preparing an information campaign to inform the public in regards to the purpose and approach to the NCS.

In addition to the establishment of the secretariat certain other activities should be implemented during the project's early phase in anticipation of supporting future field activities. One such activity would entail the development of a training program for newly appointed DEENR regional representatives in the field of environmental planning and management generally and the goals, objectives and approaches to the national conservation strategy specifically. This would provide a technical cadre of individuals which would prove invaluable during the pilot project phases.

A second anticipated need concerns the establishment of a means to store and use field data in support of conservation strategy development. This would be useful both in assembling and storing existing and projected data as it concerns the sites and in analyzing the data for purposes of strategy formulation. It provides an additional benefit in providing a flexibility to allow periodic updates of environmental information giving the user the ability to "track" quality of the environment for the particular site and in effect monitor conservation strategy effectiveness. The development of a such a system (termed a Geographic Information System) should be a relatively easy task given the number of GISs which are currently being used/tested in the Philippines. An added task of the secretariat could be to assess the existing systems for relevance to support the technical needs of the NCS, identify the most suitable within budgetary constraints and take what actions are necessary to acquire same.

Once pilot sites are selected regional steering committees (RSC) are proposed to ensure cooperation and effective implementation at each of the pilot sites. Their composition will reflect the National Steering Committee with provision made for participation by appropriate local institutions which may be absent on the national scene. As in the case of the NSC these site-specific RSCs will be chaired by the regional representative of the DEENR.

Criteria proposed for site selection should include the following: sites should be representative of a larger area or region facilitating the application of lessons learned to other areas; the initial pilot sites should be selected for their complementarity so that in aggregate they maximize the usefulness of the information from which to base a national conservation strategy while providing a semblance of equitable regional distribution; to avoid re-inventing the wheel and leverage project resources sites should be characterized by on-going activities with direct relevance

to goals and objectives of the NCS (this could entail physical infrastructure, research and training activities).

Pilot site selection can be based on a number of criteria however ultimately sites can be reduced down to either ones defined by a landform (e.g river basin); political boundary (e.g. province) and/or issue (e.g. polluted lake and its associated drainage systems). Four examples are described briefly below proposed for illustrative purposes and possible consideration for pilot site selection.

1. Location: Central Visayas

Statement of the Problem/Regional Characterization

The Central Visayas is characterized by widespread land degradation and a rapidly growing population which ranks among one of the poorest in the country. Management strategies directed toward conservation of natural resources will by necessity have to focus on stabilization, notably of the soil cover, and rehabilitation of many of the natural resource sectors. Specific areas which could be selected for the development of a conservation strategy could be one of the region's small island ecosystems (e.g. Bohol or Siquijor) or one of the watersheds found in the larger islands (e.g. Negros Oriental or Cebu).

Potential Cooperating Local Institutions

Central Visayas Regional Project (under the auspices Regional Director of NEDA, Region 7);

NEDA/Government of Australia Land Use Information System project (LUIS);

University of San Carlos (particularly the Office of Population Studies and the Water Resources Center);

World Neighbors;

Silliman University (particularly SU Action Research Development Program in the Uplands and the Marine Science Center).

2. Location: Palawan

Statement of the Problem/Regional Characterization

The Province of Palawan and the principal island of the same name are widely recognized as the Philippines "last frontier" characterized by the country's largest remaining contiguous area of tropical forest (and other ecosystems). Presently, natural birth rates together with in-migration combine to contribute to a natural increase in population growth rates estimated to be 4.5 per cent threatening the status of the island's natural resources and present level of economic livelihood. Success in the development of an effective conservation strategy for the island would provide valuable lessons with wide application to other areas in the Philippines were natural areas are threatened by unplanned human settlements.

Potential Cooperating Local Institutions

The Palawan Integrated Area Development Project Office (PIADO) of the National Center for Integrated Area Development (NACIAD) would be the most appropriate institution to link up with in that it provides a mechanism promoting intergovernment cooperation in pursuit of plan implementation.

3. Location: Mt. Apo, Baracatan, Mindanao

Statement of the Problem/Regional Characterization

The proposed site differs from the former two in focusing on issues of national significance affecting the proper management of natural resources (competing uses for the nation's national parks and forest reserves) rather than on a physically-bounded region. Mt. Apo is one of the Philippines best known parks widely recognized for its intrinsic beauty, diverse wildlife and value as a prized recreational resource. This recognition has been increased by the location of the Philippine Eagle Breeding Project which includes the mapping and monitoring of this endangered bird's nests. However, the status of the park is threatened by a number of competing uses which in aggregate are

contributing to the rapid erosion of the park's quality. These include: illegal human settlements estimated to cover some 30 to 40 per cent of the park's area; renewed interest in developing geothermal energy resources; illegal logging; and traditional slash and burn land use techniques practiced by one of the local indigenous people (the Bogobos). In all likelihood a significant portion of the park will be re-zoned to establish a buffer zone within the confines of the former national park and be implemented with an integrated social forestry project in an attempt to provide a sustainable livelihood to the inhabitants while attempting to keep the remaining national park in tack. The development of a successful multipurpose management strategy for the area would be beneficial not only for Mt. Apo and other areas of Mindanao but widely applicable to similar sites throughout the country.

Potential Cooperating Local Institutions

Ateneo University (particularly the Departments of Social Science and Natural Science)

Philippine Eagle Foundation

Haribon Foundation/Davao Chapter

4. Location: Baguio City

Statement of the Problem/Regional Characterization

The municipality of Baguio City represents a small urban system which is suffering the consequences of unplanned accelerated development. Major sources fueling growth and contributing to the problem include tourism, industry, second vacation homes, and rapid expansion of retail outlets to serve as outlets to agricultural produce from adjacent rural areas. While the sources of environmental stress in Baguio may be unique the approach to planning for its future growth could provide a valuable study applicable to other small urban communities found in the Philippines.

Potential Coordinating Local Institutions

Municipal Planning Office;

UP/Baguio.

Following site selection the project's second phase will be characterized by the development of individual site-specific conservation strategies. These will vary from site to site but share the commonality of complementing existing data by fulfilling information needs as determined by the NCS theoretical framework developed by the NSC. In conjunction with strategy development an information campaign and implementation strategy will be developed to facilitate aspects of Phase III. In anticipation of the next phase a year-end review will be conducted of all regional strategies. This will be used primarily to assess the results achieved to date and make adjustments where required prior to attempting replication in other sites.

Phase III will focus on replicating approaches (or modified approaches as the case may be) in other areas within the same region of the respective pilot sites. It will also be the time were implementation of the initial pilot sites' conservation strategies will begin providing at least one year of results prior to extrapolation to the national level. The degree to which strategies will be implemented will be determined by a number of factors and it is not expected that full implementation will occur within the life of the project.

The final phase of the project will be devoted to assessing the results of strategy formulation and early implementation; comparing these results with the expectations of the theoretical framework; and making the required adjustments in framework parameters prior to recommending its use as a model for development of

subsequent conservation strategies in the country's remaining regions.

Timetable

As presently envisioned the project timetable leading up to the development of a national conservation strategy totals 42 months. This is broken down by phases in Table 1.

Proposed Budget

While budget estimates are preliminary the total is estimated not to exceed $200,000 U.S. or 4 million pisos. This figure is based on an approximate figure of $50,000 U.S. per year with an addition $25,000 proposed for contingencies. The figure assumes sites have been selected where past and/or present ongoing activities have resulted in a data rich environment and that cooperation will be forthcoming with the respective government agencies and institutions reducing the need to collect base line information. Local cost sharing with regional and provincial governments is a possibility and should be included as a site selection criterion but not considered mandatory to warrant final selection. The first year funding will be from government funds with expected cost sharing from one or more environmental NGOs in the form of in kind contributions derived from ongoing research projects. Funding sources in the subsequent y ars may include foreign donors.

Table 1. Proposed Schedule of Events for Philippine's NCS.

	Estimated Time (mnths)	Description of Major Activities
Phase I	6	1. Create a National Steering Committee.
		2. Establish the Secretariat.
		3. Conduct a series of workshops to finalize project design.
		4. Construct draft NCS framework.
		5. Complete training and the development of a GIS.
		6. Establish criteria and conduct initial site selection.
		7. Make field trips, conduct regional workshops etc. to finalize site selection.
Phase II	12	1. Develop Pilot Site Conservation Strategies.
Phase III	12	1. Begin implementation of initial pilot site conservation strategies.
		2. Replicate approach in other localities within pilot site region.
Phase IV	12	1. Continue implementation of initial pilot site conservation strategies.
		2. Begin implementation of replicate conservation strategies.
		3. Integrate and analyze results from the initial from which to base a NCS.
		4. Modify NCS framework.

Appendix 5

M-AC1029/AC-1029/09-15-86/dw

PHILIPPINES

Initiating Memorandum

Forestry, Fisheries and Agriculture Resource Management (ffARM) Study: a Strategy for Sustainable Development and Conservation.

Table of Contents

PHILIPPINES
Initiating Memorandum

Forestry, Fisheries & Agriculture Resources Management (ffARM) Study: a Strategy for Sustainable Development and Conservation.

I. Introduction

1. It is often in the private interest of individuals to exploit the natural environment to the detriment of others, because personal cost does not fully reflect market prices. In other words, market forces may not provide equilibriating mechanisms and the incentives necessary to achieve efficient utilization of natural resources. The existence of externalities and the failure of the market mechanism is the justification for public sector involvement in the management of natural resources.

2. The form of such involvement is the essence of a conservation strategy. It comprises a national system of incentives, regulations, and institutional arrangements to induce environmentally rational use of natural resources through which the long-term national welfare will be enhanced. It may require changes in existing policies, laws and procedures and entail specific government investments to facilitate appropriate change in the behavior of the private sector. This memorandum proposes a study, to be carried out by a World Bank team with local cooperation, designed to identify an appropriate set of interventions to improve natural resource protection and management in the Philippines. It would provide policy and technical underpinnings for a possible sector loan or specific investment lending particularly in reafforestation, upland farming system, fisheries rehabilitation and watershed protection.

II. Dimensions of the Problem

3. The tropical, mountainous, island geography of the Philippines provides both economic opportunities and potential for ecological problems. The archipelago of more than 7,000 islands encompasses approximately 30 million hectares of land area, 1.1 million hectares of coastal wetlands, 26.6 million hectares of coastal waters (of which 4 million hectares are coral reefs) and has 18,000 kilometers of coast line. This diverse environment supports a range of terrestrial and marine ecosystems including tropical moist forest, mangrove swamp, and coral reef, which are considered to be the three most productive of the earth's ecosystems.

4. However, in the Philippines, these ecosystems have characteristics which make them especially vulnerable to degradation and require careful and informed management if their capacity to support development is not to be impaired. Nearly 60% of the total land mass of the country is mountainous, with a slope of 18% or more. Much of the upland is extremely susceptible to erosion. Of the remaining land areas, only 2.5 million hectares are

relatively flat, dry, and suitable for intensive agricultural production. As population has increased and other economic sectors expanded, agriculture increasingly has moved into upland areas where lowland techniques, inappropriate for slopes, have degraded the land. Critical water catchment areas are small, mountainous, and highly susceptible to degradation. Of 421 principal river basins identified by the Philippine National Water Resources Council, the majority are only between 100 and 500 square kilometers in area. Prolonged dry seasons alternating with periods of heavy rain in most portions of the country make protection of such watersheds essential if floods are to be minimized and a regular water supply assured.

5. Extensive conversion of natural ecosystems and species extinctions results in the loss of genetic material with possible economic value. In the Philippines, the national forest has been cut back to the point that action is urgently needed if biological diversity is to be maintained. Moreover, natural tropical ecosystems can yield a diversity of products on a sustainable basis with little or no additional inputs. However, the tropical soils which support these complex natural systems are rapidly exhausted when converted to near monocultures, as in the case of agriculture, and prove relatively unresponsive to even high levels of fertilizer.

6. Tropical marine and terrestrial ecosystems are complex and often more fragile than temperate ecosystems. The processes through which productivity is assured in the tropics are little understood and resource management decisions, made on the basis of inadequate knowledge, demand caution. However, in the Philippines ecological limitations have been given scant regard in the planning and use of resources. Although sustainable development principles have been proclaimed, in practice resources have been allocated by Government [1/] and exploited by the private sector for short term economic gain. There is increasing evidence that environmental degradation is [illegible], including severe soil erosion; increased frequency and intensity of [illegible] and drought; shortages of fuelwood, rattans, bamboo and other forest [illegible]; and declining fish catches.

[illegible] effects

7. Soil Degradation and Erosion. Soil problems include erosion as a result of inappropriate land management; loss of soil fertility as a result of nutrient depletion, leaching, and mechanical compaction; contamination as a result of use of agrochemicals to offset nutrient loss; and salinization, [illegible]alization, and other deterioration due to irrigation, ground water depletion, and changes in the freshwater regime.

Government studies report an alarming soil erosion problem. In a recent study, of 73 provinces, 13 are reported to have between 51 and 87% of their surface areas subject to severe erosion. An additional 12 provinces are reported as having between 40 and 50% of their surface areas severely eroded. These studies would need to be updated using satellite imagery, by which the

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1 references to Government are to the former administration.

Philippines is fairly well covered, and ground truthing. Eroded materials wash into waterways causing down-stream problems. Siltation decreases the economic life of water storage for irrigation and power generation; increases the costs of maintaining irrigation systems and navigation channels; and reduces productivity of coastal mangrove and reef systems. It is estimated that 65% of the total silt load of the Agno River can be attributed to deforestation.[2/] In 1977 a major desilting was done on the Agno Irrigation system. The cost in terms of foregone rice production was estimated to be 98 million pesos for 1980, and was projected to reach 105 million pesos by 1985. Similar measures are needed of externalities occurring elsewhere.

9. Means of correcting these problems are largely known. However, implementation has been obstructed by land tenure problems, inadequate training of agricultural agents, priority on protection enforcement -- instead of extension -- within illegally occupied public lands, and insufficient conservation incentives. Although Government has cited soil conservation as a high priority the problem has not been addressed.

10. Watershed Degradation. Forest ecosystems once provided optimal vegetative cover for uplands including catchment areas critical to the recharge of underground aquifers. Many of these areas have been indiscriminately logged and then converted by slash and burn farming, and developed as pasture or under systems of permanent agriculture not designed for fragile, sloping areas. According to official statistics, during the 15 year period 1968 to 1983 Philippine forests were reduced in area from slightly more than 16 million hectares to an area of approximately 11 million hectares. Other sources suggest that less than 5 million hectares of forest yielding hardwood timber remain. In many cases the logged and converted land has been allowed to degrade to low productivity brush or grass land, usually Imperata or cogon grassland which is now estimated to cover more than 5 million hectares, one sixth of the total land area of the Philippines. The effects of catchment area degradation are a reduced capacity to absorb and store water, an increased rate of erosion, and intensified cycles of flood and drought.

11. Government response has been inadequate. Only 39 protected watersheds have been declared, encompassing about 334,700 hectares of land deemed to be critical catchments. These are under the administration of several different local and national agencies and in some cases responsibility has been passed from one to another during recent years. Criteria for designation and management of watershed areas are based largely on the presence of down stream investments: they have largely discounted the water needs of local people. Management of intact forest has been largely ineffective and restoration of deforested areas has been minimal.

12. Loss of Biological Diversity. The forest ecosystems of the Philippines are exceptionally rich in species diversity, containing a large

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2/ Deforestation as such was not necessarily the source of the problems but the way in which forest products were extracted and what was done with the land afterwards.

numbers of species which are endemic to the Philippines. For example, of approximately 628 known species of terrestrial vertebrates, 36% or 229 species are found on only one island in the Philippines and no where else in the world. The majority of these species are found within forest ecosystems and are threatened with extinction as their habitat is eliminated.

13. The abundance and diversity of species found within terrestrial systems is also found within the marine systems. Philippine waters host more than 2,000 fish species and approximately 400 of the 500 known species of corals are found in Philippine waters. The conversion of natural terrestrial and marine ecosystems has probably been responsible for several hundred extinctions. The economic cost of this loss cannot be measured accurately but it can be demonstrated to be sizeable, potentially affecting industry, medicine, fisheries, forestry, agriculture, and tourism.

14. Depletion of Marine and Freshwater Fisheries. Approximately 5% of the Philippine population rely solely on fishing as a source of income, and as a group are among the poorest in the country. Nationally, fish accounts for 60% of all animal protein consumption. Municipal fishermen (i.e., those using boats of up to 3 tons) number about 500,000 or 90% of marine fisherman and account for 55-60% of the marine catch using often small unmotorized boats. Commercial fisheries, using boats of greater than 3 tons and more sophisticated gear, employ only 42,000 fishermen.

15. Municipal or traditional sector fishery production has been declining due to: government policies favoring coastal aquaculture and commercial fisheries, fish stock depletion from overexploitation, and degradation of marine ecosystems. Of the 50 major fishing grounds, 10 are believed to be overfished although accurate assessment of fish stocks has not been made. Even less is known of the status of freshwater fisheries, but they have variously suffered from over-exploitation, competition with irrigation and domestic water supply and pollution.

16. Coastal ecosystems have undergone extensive conversion in the development of aquaculture and as a result of pollution, siltation, and use of destructive fishing techniques and gears. Mangroves have been extensively cut to produce quality charcoal for fuel, and converted to build, by 1981 about 196,000 hectares of brackishwater fishponds, reducing mangrove swamp areas from between 400,000 and 500,000 hectares in 1920 to less than 106,000 hectares today. Coral reefs have also suffered greatly. Fishing with dynamite, poisons or by Muro-Ami fishing [3/] has damaged or destroyed more than half of the country's 4 million hectares of reef areas.

17. In addition to the direct effects of coastal habitat destruction on the livelihoods and sustenance of coastal peoples, destruction indirectly

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3/ In Muro-Ami fishing, a large drive-in net is placed on the reef and up to a hundred fishermen use scare lines with rocks attached to drive in the fish. The pounding of the reef with the rocks causes considerable damage.

affects commercial fishing of deeper off-shore waters. It is believed that between 60 and 80% of all important commercial marine fishery species use coastal habitats at least at one point in their life cycles.

The Causes

18. Population. Among the major factors contributing to natural resource degradation are: population pressure on the natural resource base; deforestation; faulty land allocation systems and land tenure; and a range of institutional and pervasive policy defects. Although the Philippines is not one of the most densely populated countries in the world, the density of 173 people per square kilometer under-states the pressure as under half of the land area is cultivable without special precautions. Moreover, momentum for future population growth continues with a high fertility rate, a young population and declining mortality. The rate of increase is such that the population will increase by 50% in the next 18 years. Unless population growth is controlled, efforts at sustained development and improved management of natural resources will be undermined.

19. Deforestation. There are two primary causes of deforestation: improper logging and conversion by illegal occupants. From the mid-1940's the country's forests were intensively logged and a large percentage of the harvest exported as logs. Intensive logging and log export continued until the early 1970's when heightened conservation awareness and declining forest reserves prompted an effort to curb log export. Several log export restrictions and bans were promulgated and land reafforestation legislated but enforcement has bowed to political pressure and short-term economic considerations. Correctly conducted and controlled logging need not present environmental problems. However, in the Philippines, controls have been totally inadequate and instead of being replanted logged areas have been degraded by illegal occupants pursuing inappropriate cultivation.

20. Land Allocation and Tenure. The illegal occupation of public lands is a result of laws in the processes of planning and allocating land use in the Philippines. The public domain -- the forest reserve — is large, including all land with a slope of greater than 18% or almost 60% of the total land area. Within this land there are an estimated 7.5 million people who illegally cultivate over 2 million ha, and graze some 1.7 million ha. The majority of cultivation is by the shifting slash and burn technique which is unsuited to the topography of the land at the present population density, and results in severe soil erosion and land degradation. However, lack of secure tenure provides little incentive for farmers to invest in more permanent farming systems and illegal farmers do not receive help from the extension services.

21. Until recently Government has used enforcement as the only means of dealing with the forest land "squatters". A presidential decree in 1972 gave squatters legal use of the lands they occupied at that time, so long as they stopped clearing additional lands. This was impossible to do and still maintain production, and as records of claimed rights are incomplete, enforcement has been ineffective. More recently Government began a system of awarding permits for individuals to farm small parcels of land originally for five years, and later for 25 years renewable for a further 25 years. The

program has made slow progress and its efficacy needs to be analysed.

22. The root problems are that tenure systems have restricted the access of a rapidly growing population to lowland while at the same time too much land is being held in the public domain by Government and the resources contained within these lands are not being allocated rationally. At a time when the population was much less and access to upland areas was much more difficult, an 18% slope was a practical, if temporary, criterion for land use planning. However, with increased population pressure and many slope lands now accessible it is economic to invest in appropriate permanent farming systems. New criteria are required for defining the public domain and alienable areas which better address the need for watershed protection, permanent farming in the uplands, future demands for forest products, and wild plant and animal species preservation. A new land use classification, a land survey and a new definition of land tenure is an urgent necessity.

23. The failure of the land allocation process has been aggravated by a decline of traditional social institutions and accountability which has had a profound effect on natural resource use. Traditional resource use laws which many tribal Filipinos still observe involve great emphasis on down stream effects. But when jurisdiction over resources of the public commons, formerly exercised by family networks to which the individual was held accountable, was assumed by the central government environmental quality ceased to be subjected to local control.

24. Institutional and Policy Issues. Government made some positive moves in response to increasing environmental problems. The National Environmental Protection Council was formed in 1977 and charged with oversight of environmental programs. A number of committees, subcommittees, task forces and working groups were formed to address concerns about coastal zone degradation, national park management, coral reef destruction, fishery depletion, forest destruction, water resource management, and soil erosion among others. Policies and legislation were promulgated to address the conservation issues. However, Government failed to establish programs through which to successfully implement them. The reasons for this include:

(a) a failure to address pervasive policy issues which underly the national resource use problem. Little is known about what are the key policy changes: identifying them would be an important element of the ffARM study;

(b) lack of enforcement because resource use and allocation was dictated by political needs (e.g. logging concessions and industrial treefarm permits given as political favors) or short-term economic goals (e.g. viewing resources as a source of foreign exchange and increasing extraction to compensate for economic problems) with little regard to longer-term problems;

(c) policies and legislation formed and promulgated on an ad hoc basis; lack of overall leadership in conservation matters and overlapping responsibilities between agencies; contradictory laws and policies; and

(d) an insufficient data base on resources, including land capabilities, marine capabilities, and the distribution of species and habitats.

It can be expected that the new administration in the Philippines will be anxious to correct this situation.

III. The Proposal

Objective and Justification

25. The objective of the ffARM strategy paper is to identify the feasible set and sequence of policy actions, investments and institutional changes which will encourage the sustainable utilization of the country's forestry, fishing and agricultural resources in a way which will maximise their long-term product, and return to productive use areas already cut-over, degraded or over-fished. Actions should be consistent with and support the new government's development policy and strategy, in particular the emphasis on equity and distributive justice and the major role envisaged for the private sector. In taking cognizance of growth and poverty alleviation concerns in the Philippines the study would make explicit any trade offs between them.

26. The study will provide a basis for dialogue between the Bank and Government on reforms which impinge on the natural resource management and conservation problem. It should provide a foundation for Bank operations and be a catalyst for support by other agencies. It would supply policy and technical support for a SAL or a sector loan, specific investment loans (SIL) or components of SIL. The emphasis should be on policy-based lending, but an important goal of the study will be to identify the scope for extensive reafforestation, the conditions under which it can be expected to take place, including extensive local involvement, and the appropriate organizational structures for a forestry program. The report may also lead to operations in rural development involving upland farming systems and fisheries, and in watershed protection. It will also identify areas for further sector work or local studies. However, it will emphasise that a start on implementation of a strategy should not await completion of a data base. Use should be made of available data and experience to move policies and programs in the right direction; in particular there would be no benefit in awaiting a national inventory or nationwide prescriptions where problems are relatively local and vary by region.

27. The ffARM strategy will focus on the critical problems surrounding the use of stock-renewable-resources. The approach will be:

(a) to identify the linkages between economic activities, how they are organized and carried out, and their impact on resource use;

(b) to quantify these external impacts in monetary terms [4/] within the limits imposed by problems associated with the task, including the definition of appropriate discount rates and problems of future generations,

(c) to assemble all available information on technologically optimal means of exploiting natural resources, including species and systems for reforestation, stable farming systems for upland areas, and criteria for selecting areas which should be protected to preserve biological diversity; and

(d) to determine an appropriate set of incentives and penalties; revised laws and regulations; and socio-political and institutional changes necessary to ensure the adoption of environmentally sound practices.

28. Halting environmental deterioration was identified as one of three objectives of Bank assistance to the Philippines in the agricultural sector in the 1983 Agricultural Sector Memorandum (Report 4318-PH). This proposal is an outcome of that report. The justification for Bank involvement in the ffARM strategy rests on its ability to take a broad view of the problem, to be objective, to follow-up with specific support to an agreed strategy, and to mobilize wider support. The problem to be addressed has root causes which impinge on many facets of Philippine society and solutions will involve important policy issues, require institutional and legislative change, and cut across entrenched interests. It is a subject about which expertise is scarce and a problem to which narrowly defined solutions will be ineffective. The influence and financial support of an organization like the Bank would be needed to ensure that an agreed strategy is implemented.

Issues

29. The specific questions to be answered by the study include: what are the causes of market failure; what are the costs of the externalities which result, and how should they be addressed; what are environmentally appropriate uses of renewable resources; what measures should be taken to ensure that such approaches are followed; what areas should be preserved in their natural state; what geographical areas should have priority in a natural resources management and conservation program; what are the means of reversing existing degradation; and how should a program be implemented? These issues are developed below.

30. Causes of Market Failure. The study should identify cases of market failure, and determine their proximate and underlying causes. This and the identification of externalities (para. 31) are the central tasks of the study. In particular it should review: pricing and taxation policies, taking

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4/ Precision in quantification is rarely worth pursuing, especially as pervasive policies such as artificially maintained exchange rates are probably more damaging than localized intervention. Broad magnitudes and definitions of cost usually suffice.

account of any exchange rate distortions, effecting the rate, extent, and manner of use of renewable resources and their partial or complete substitutes in the market place (the classic case is the impact of kerosene pricing on demand for firewood or charcoal); the impact of legislation, implementing rules, and the manner in which they are enforced; population change; effects of levels and distribution of incomes; rights of access to land and water and how they impinge on the use of resources by occupiers and others; and the effects on resource use of tenure systems, including illegal squatting, tenancy and sharecropping, and land charges. It should also examine whether there are cases where the planning mechanism not only causes suboptimal functioning of markets but even inhibits them from working at all.

31. Externalities. The identification of the externalities associated with the market failure and establishment of means of approximating their cost is the other central area in the study. However, while it is important to quantify externalities as far as possible, the data base is probably poor and the associated problems including definition of discount rates and problems of future generations, should not be allowed to be a stumbling block to developing the strategy. In this initial study it is better in some instances merely to indicate the types of information needed, and to accept sensible and implementable positions, than lose momentum searching for optimal solutions.

32. Land-use Classification. The study should collate available information on ecologically stable farming, forestry, pasture management and fishing systems for different environments. On the basis of this information, it should establish criteria for a land and coastal water use classification of the Philippines and determine how such a classification could be effected expeditiously. The classification should cover both the public and private domains and would replace the present 18% slope criterion to define the forest area. It is anticipated that the completed land classification will result in the release of major areas of the "forest reserve" for alienation.

33. Land Tenure. The impact of the skewed distribution of land and of the forms of tenure found in the Philippines on the management of the countries natural resources should be assessed. An extension of land reform at least to coconut areas, and granting of titles on the presently inalienable but de facto occupied and cultivated lands and on other areas released from the forest reserve (para. 32) will probably be important measures.

34. Areas to be Preserved. The study should establish criteria for identifying those geographical areas which it will be essential to preserve to maintain genetic potential. Such areas should be sufficiently large and diverse to preserve the habitat and sufficient populations of the majorities of plant, animal, terrestial and marine species to assure availability of these habitats and species for future research and genetic engineering. The study should also establish criteria for site management and protection.

35. Criteria for Identifying Priority Areas. The study should establish criteria for, and as far as possible identify, the geographical areas with the major current conservation problems and those most vulnerable to future problems. These would probably be areas such as Cebu, Negros Occidental and Bukidnon in which problems are self evident, where the potential economic cost

of delayed action is great, or where there are few if any trade-offs between growth and conservation or restoration. The principle being suggested is that while a resource inventory and clear identification of causes and effects are important elements of a strategy, a start should be made on measures to halt and reverse degradation without completion of a full data base, especially as many problems are relatively local.

36. Implementation of a Conservation Program. The study would identify the incentives, legislation, social programs and institutional arrangements needed to encourage private sector adoption of environmentally sound levels and manners of resource use, and make explicit the policy decisions, investments and budget processions needed to implement a broadly based conservation program.

37. The level of authority through which an intervention should be implemented would depend on the nature of the intervention. Clearly, policy measures such as exchange rates, and changes in national laws have to be implemented at national level. Other interventions, including some taxes, could be implemented by local authorities. Identification of the hierarchy of authorities and appropriate levels for intervention and ensuring that recommendations on pricing and other interventions are administratively feasible would be part of the strategy. Two points need particular emphasis. First, lasting improvements in natural resource management cannot be achieved without the support of the communities affected. Local groups should therefore be involved to the maximum degree possible both in the identification of solutions and in their implementation. Second, existing administrative organizations may not be the most appropriate for handling natural resource issues. Consideration should, therefore, be given to alternative forms: e.g. the use of river basin authorities, or special regions covering, for example, the Cordilleras.

38. Restoration of Degraded Resources. Similarly, the study would identify the technical means - plant or tree species and management techniques - and incentives, legislation and institutional arrangements through which viable reforestation or land or reef restoration can be implemented. There is a scattered body of knowledge, both in the Philippines and from elsewhere but potentially applicable to the Philippines, which can be drawn upon for this purpose. Further research would also be identified.

Mobilization and Planning. Finally, to help ensure that the [illegible] is implemented the study would assess the budgetary impact of Government, suggest means of mobilising financial and human resources, and present an appropriate organization for planning, technical support and supervision of implementing programs. The means of involving local authorities and local peoples should also be developed, and appropriate administrative units identified. While river basins are ideal for implementing conservation measures from a technical viewpoint, they typically cut cross existing administrative boundaries and may be difficult to use. Exclusive use of formal governmental administrative machinery may preclude the opportunity to increase local accountability and responsibilities for the stewardship of resources within the public commons. Flexible arrangements should be sought.

IV. Organization and Schedule for the ffARM Study

40. The study proposal has been discussed with the new government, and its support assured. However, the appropriate Ministry or agency with which the study team would work remains to be agreed and local expertise in the range of topics involved is still being identified.

41. The work will start with a review of existing literature, both specific to the Philippines and addressing issues more generally. The main study will take place in 1987. Because of the complexity of the task, a two-stage mission is proposed with the mission leader and probably a key mission member making an initial visit to ensure that relevant information will be available, and finalize with Government the issues to be addressed.

Initial mission	02/15/87
Main mission	06/15/87
Discussion with Government	01/15/88

42. The mission remains to be determined. Expertise would be needed in forestry, upland farming systems, reef fisheries, tropical ecology, satellite imagery interpretation, land tenure systems and economics. The interest of other aid agencies and Philippine NGO's in cooperating in the study needs to be confirmed.

J.H. Cleave
Revised
9/14/86

Appendix 6

DEVELOPMENT OF AN
INTEGRATED PROJECTED AREAS SYSTEM
IN THE PHILIPPINES
(copy #7)

I. COVER SHEET

1) Title: Development of An Integrated Protected Areas System in the Philippines

2) Applicant(s): The Haribon Foundation
3rd Floor, Liberty Building,
835 Pasay Road, Makati
Metro Manila, Philippines

Dr. Celso R. Roque

3) Institutional Endorsement(s): IIED/ AID,
Ministry of Natural Resources,
Philippines

4) Project Period: February 1, 1987 - February 1, 1988 - original 2 years proposed

5) Total Budget: $ 48, 975

6) Amount Requested from WWF-US: $ 29,268
(for Phase I of the Project)

7) Support from Other Sources: Support for Phase 2 and Phase 3 will be solicited from the Philippine Government and UNEP.

8) Anticipated Future Requests: Request for pilot projects in some priority areas.

9) Abstract:

National Parks and other protected areas in the Philippines have been generally neglected. Various studies have shown that they are deteriorating rapidly and some are irretrievably lost. This project is aimed at developing the foundations for an Integrated Protected Areas System (IPAS) for the Philippines.

The project is divided into three (3) phases:

Phase 1. Assessment of the existing protected areas and the formulation of the plan for IPAS.

Phase 2. Policy, legislative and financing studies for the IPAS.

Phase 3. Development of training programs and academic curricular for IPAS manpower needs.

The assessment of the conditions of the existing protected areas will essentially be the update of the 1975 Study by the Development Academy of the Philiipines (DAP). Taking the present conditions of these areas into account and the capability of the country to support and maintain protected areas, an optimum number of sites in a linked network of protected areas will be determined. For economy, it is important that the sites are somehow ecologically linked and supportive of each other.

The confused enactments on protected areas be rationalized into a single code. A financing strategy will be developed for establishment and maintenance of IPAS. Some of the priority areas will be designed in detail. Training programs and academic curricula that are adapted to Philippine conditions will be developed.

II. PROJECT DESCRIPTION

(SEE ATTACHED PROPOSAL)

III. ANTICIPATED PROJECT FOLLOW-UP

Follow-up activities will likely be in the following areas:

- Actual development of some priority sites
- Lobby for congressional approval of the Code for IPAS
- Conduct of Training for the personnel of IPAS

IV. PROJECT PERSONNEL

Dr. Celso R. Roque, the President of Haribon, and Dr. Colin Rees, the vice-president will oversee the project. Upon approval of the funding, full-time senior researchers will be recruited from the universities with secondment from the relevant government agencies.

V. BUDGET

Year 1: Total Budget = $48,975 WWF-US is asked to contribute $29,268 for the implementation of Phase 1.

Year 2+ : Proposals will be developed for follow-up activities.

VI. AWARDING OF GRANT

A. Agreement with WWF-US

Dr. Celso R. Roque will sign the agreement on behalf of the Haribon Foundation for the Conservation of Natural Resources.

B. Person Or Institution To Whom Payment Should Be Made

The Haribon Foundation
3rd Floor Liberty Bldg.
835 Pasay Road, Makati
Metro Manila, Philippines

C. Requested Payment Schedule

50% at start of the project
20% on the 4th month
20% on the 8th month
10% on the 10th month

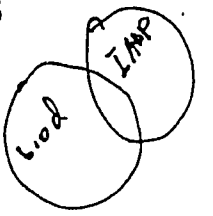
VII. REFERENCES

Dr. Dave Runnals
IIED
Washington, D.C.

Mr. Russell Train
WWF-US
Washington, D.C.

Mr. Lee M. Talbot
6656 Chilton Court
McLean, Virginia 22101

DEVELOPMENT OF THE INTEGRATED PROTECTED AREAS SYSTEMS FOR THE PHILIPPINES



I. Rationale

1.1 The national parks, equivalent reserves, and other protected areas such as game refuges, the wildlife sanctuaries, and the wilderness areas are the ultimate depositories of our national biological heritage. They are the gene banks that constitute the resource base for the future. These areas are the living museums and outdoor laboratories of unequalled scientific and cultural values. Over and above tourism, the protected and equivalent reserves provide places for our people where they can seek inspiration and spiritual renewal.

Thus, national parks and equivalent reserves are essential to sustainable development and conservation of natural resources.

1.2 In 1975, the Development Academy of the Philippines (DAP) prepared a study for the Ministry of Natural Resources entitled "The Development Plan for the Philippines Park Systems." The principal components of the ten-volume report are the following:

Assessment of the Status of the National Parks
Evaluation of the Administrative Systems for National Parks
Socioeconomic Studies
A Development Plan for the National Parks
Recommendations for an Integrated Administrative Systems
Financial Schemes for Parks Development

It is unfortunate that up to the present time and inspite of the continuing deterioration of the national parks, the recommendations have not been implemented. As an indicator of this continuous decline, the International Union for the Conservation of Nature and

Natural Resources (IUCN) reported that the number of parks in the Philippines that meet international standards are :

23 in 1975

12 in 1980

7 in 1982

It is very probable that at present time none of the 60 or so national parks could meet the IUCN standards.

Thus, it is necessary to update the DAP study in view of the numerous significant changes in physical, social, economic, and political requirements. It is also necessary to develop a plan for an Integrated Protected Areas System (IPAS) for the Philippines.

1.3 In 1975, it was estimated that as many as 76,000 people are living inside the national parks, about 54,000 hectares are under cultivation, and about 4,000 hectares are being logged. Today, it is fair to say that these figures must be drastically revised upwards.

National parks and potential park lands are being continuously decimated. The boundary adjustments to date resulted in the net loss of 28,000 hectares. The reclassification of forest reserves decreased the potential park lands by 11,300 hectares. Seven of the national parks have no definite boundaries and one is unnamed and unbounded as well. P.D. 2282 when implemented will alienate vast areas from national parks. Based on the 19809 UN/IUCN listing the Philippines has one of the lowest average area per national park.

Thus, the national parks and other protected areas under severe threat of other competing uses require a reformulation of national strategy for their care and preservation.

1.4 The statistics concerning protected areas are fragmented and inconsistent. Even the exact number of national parks is not known. The DAP report in 1975 mentioned 59, the Natural Resources Management Center (NRMC) uses the figure of 60. The Forest Research Institute's (FORI) figure is 63. The Bureau of Forest Development (BFD) reports that it is administering 53. Even within the Bureau of Forest Development, the figures by the Central Office and the Parks and Wildlife Division are not consistent. Needless to say, the total area of national parks is not completely known.

Thus, there is an urgent need to establish an accurate and consistent set of basic data for the protected areas.

1.5 There are no schools in the Philippines offering courses in the management of protected areas. Considering the conditions of these areas, it is clear that expertise is sadly deficient in this area

Thus, it is imperative that the manpower needs of PAS be studied and a systematic training program and curricular development program in the educational system be formulated.

1.6 There are at least 98 enabling enactments and subsequent amendments concerning national parks. At least ten examples of overlapping enactments could be cited. There at least four examples of inconsistent legislations. There are no unambiguous legal definitions of national parks, game refuge, wildlife sanctuaries, wilderness areas, seashore parks, national shrines, and marine parks. There are at least ten different entities administering national parks. These are :

National Resources Conservation Office
Bureau of Forest Development
Philippine Tourism Authority
National Parks Development Committee
Public Estates Authority
Philippine National Oil Company
National Power Corporation
University of the Philippines at Los Baños
Siliman University
Cultural Center of the Philippines

The Bureau of Forest Development (BFD) is administering some basically historic parts such as Bessang Pass and McArthur Landing Memorial Park, while the Philippine Tourism Authority (PTA) is managing some basically forest parks.

The most tragic feature of protected areas in the Philippines is jurisdictional struggle for the control of the park lands and other protected areas. There has been five major institutional reorganizations in national park administration.

Conspicuous by its absence is a clear and expicit national policy on protected areas.

Thus, one of the immediate concerns is the amalgamation of all existing enactments into a "protected areas code", the rationalization of protected area management and the formulation of national policy.

1.7 The NEDA Five-Year and Ten-Year Development Plans indicate a fairly high priority for national parks in the natural resources management sector. The 1986 appropriations, however, show that the national parks were given only one-tenth of the proposed budget.

It is very likely that the present economic difficulties would mean a further cut in the appropriations in the national parks.

Thus, it is quite necessary that a financing strategy be formulated to save the protected areas.

2. PROJECT PHASES

This proposal is aimed at addressing the most serious problems faced by the country in protected areas management. We share with the Ministry of Natural Resources the belief that the proper management of these areas is crucial to the pursuit of sustainable development of the country.

The magnitude of the problems besetting the protected areas would require a great deal of work that would necessitate short and long term actions. For this reason, the proposal is being presented in three distinct but complimentary phases.

2.1 Phase 1. Assessment and Planning the IPAS.

This phase will cover the review of relevant past studies such as those by the Development Academy of the Philippines (DAP) and the Natural Resources Management Center (NRMC).

Actual physical surveys and assessment of existing protected areas will be undertaken. Criteria will be drawn-up concerning the evaluation and choice of sites. Assistance from other organizations such as the IUCN Commission for National Parks and Protected Areas will be solicited.

A national plan for an Integrated Protected Areas System (IPAS) will be drawn in consultations with government agencies and NGO's. Designs of individual protected areas will be prepared in consultations with affected communities.

The major outputs of Phase 1 will be an update of the data on existing protected areas and a national plan for the establishment of an IPAS together with the general designs of the individual areas. A computerized bibliography of the literature on Philippine protected areas will be prepared.

2.2 Phase 2. Policy, Legislative and Financing Studies for the IPAS

The existing corpus of legislations concerning national parks protected areas and reservation areas will be compiled, reviewed, and analyzed. The goal is to eliminate inconsistencies and ambiguities in the law and produce and integrated legal document called *A Code for the Integrated Protected Areas of the Philippines.*

The reasons for the failure of the present system will be identified in workshops with government agencies and the communities involved. A report will be prepared on the analysis of the failure and shortcomings of the present system.

To assure implementation of the Code, it must incorporate a financing scheme. Studies concerning how the establishment and maintenance of the IPAS could be affected must be undertaken.

The principal outputs of Phase 2 will be an expose on the inadequacy of the present legislation and a draft code for IPAS for presentation to the Congress of the Philippines which will contain financing provisions.

2.3 Phase 3. Development of Training Programs and Academic Curricula for IPAS Manpower Needs

The IPAS cannot succeed without the complement of trained personnel. In Phase 3, a training program for personnel of the identified priority areas will be formulated. The long term formal academic program for universities will also be designed in cooperation with the academe.

The training program will be informal and will be considered just as a stop-gap measure.

3. OBJECTIVES

3.1 *Phase 1. Objectives*

3.1.1 To undertake a physical assessment survey of the existing protected areas of the Philippines. ✓

3.1.2 To update the basic data and statistics relevant to these areas. ✓

3.1.3 To formulate a national plan for Integrated Protected Area System (IPAS) for the Philippines. ✓

3.1.4 To design the priority protected areas. ✓

3.2 *Phase 2 Objectives*

3.2.1 To conduct policy and legislative studies for IPAS.

3.2.2 To prepare and Integrated Draft Code for the IPAS for presentation to the Batasan Pambansa (Congress).

3.2.3 To formulate a financing strategy for the IPAS. This could be integrated with the Code and/or the Appropriations Act for the coming years.

3.3 *Phase 3 Objectives*

3.3.1 To determine the manpower needs of an IPAS.

3.3.2 To assess the current manpower complement of the government.

3.3.3 To formulate and design training programs and academic curricula for the IPAS' needs.

4. METHODOLOGY

4.1 *Phase 1*

4.1.1 The project will commence from the 1975 DAP/DNR Study and the NRMC compilations of data on national parks and protected areas.

4.1.2 Relevant maps, aerial photos, satellite images, data and statistics will be gathered from appropriate agencies.

4.1.3 A multi-disciplinary team for the physical survey and assessment of the protected areas will be organized.

4.1.4 Priority sites for the assessment survey will be determined by preliminary reconnaissance surveys.

4.1.5 The multi-disciplinary teams will conduct assessment surveys of the priority areas according to a preconceived plan.

4.1.6 Status reports will be prepared for the priority areas using a uniform format. Comparisons will be made with the DAP/DNR report of 1975.

4.1.7 The available data, maps, statistics, and aerial photos will be analyzed, organized and appended to the status report.

4.1.8 A concept plan for the IPAS will be designed and discussed in a workshop for finalization.

4.1.9 A design for priority areas will be prepared and finalized in workshops with government agencies and local communities.

4.2 *Phase 2*

4.2.1 A legal consultative group (lawyers and conservationists) will be organized to critically examine existing enactments on protected areas. Ambiguities and conflicts will be identified.

4.2.2 A workshop will be held to discuss the reasons for the failure of the protected areas. This would require the inputs from Phase 1.

4.2.3 The legal consultative group will collate the results of the analysis and recommendations and prepare a draft code.

4.2.4 A financing plan will be prepared for the implementation of the code.

4.2.5 A three-day live-in workshop will be organized to finalize the draft code.

4.2.6 A lobby group will be organized to seek congressional approval of the code.

4.3 *Phase 3*

4.3.1 The literature on training programs for protected areas management will be reviewed.

4.3.2 In consultation with government agencies, the manpower requirements for the priority areas will be determined.

4.3.3 In consultation with the academe, training programs and academic curricula will be designed.

5. OUTPUTS

5.1 Phase 1 Outputs

5.1.1 Systematic compilation of data, statistics, maps and aerial photos of protected areas (PA).

5.1.2 General status report on the PA and detailed report on the priority PA.

5.1.3 A concept plan for IPAS.

5.1.4 A detailed design and management plan for the priority protected areas.

5.2 Phase 2 Outputs

5.2.1 Report on the existing enactments in priority areas.

5.2.2 Draft code for IPAS ready for presentation to the Batasan Pambansa.

5.2.3 Report on the financing strategy for the IPAS.

5.3 Phase 3 Outputs

5.3.1 Report on the manpower needs for the IPAS with emphasis on the priority areas.

5.3.2 Designs for training programs for IPAS personnel.

5.3.3 Designs for academic curricula for PA management.

6. FUNDING REQUIREMENTS

6.1 Phase I (1 Year)

6.1.1 Personal Services

2 Senior Researchers at P10,000 per month	P240,000
2 Assistants at P3,000 per month	72,000
1 Cartographer at P4,000 per month	48,000
TOTAL	P360,000

6.1.2	Transportation and Field Expenses	P180,000
6.1.3	Supplies and Materials	P 20,000
6.1.4	Cost of Workshops	P 20,000
6.1.5	Contingency	P 20,000
	TOTAL FOR PHASE 1	P600,000
	(at P20.5 per dollar	$ 29,268)

6.2 Phase 2 (6 months)

6.2.1	Personal Services	
	1 Environmental Lawyer at 10,000 per month	P 60,000
	1 Assistant at 3,000 per month	18,000
	1 Financial Expert at 15,000 per month for 2 months	30,000
	TOTAL	P 108,000
6.2.2	Transportation and Field Expenses	10,000
6.2.3	Workshops	30,000
6.2.4	Supplies	10,000
6.2.5	Contingency	20,000
	TOTAL for Phase 2	P 178,000
	(at P20.5 per dollar	$ 8,683)

6.3 Phase 3 (6 months)

6.3.1 Personal Services

2 Senior Researchers at 10,000 per month for 6 months	P	120,000
2 Assistants at 3,000 per month		36,000
TOTAL	P	156,000
6.3.2 Transportation		10,000
6.3.3 Supplies		10,000
6.3.4 Workshops		30,000
6.3.5 Contingency		20,000
TOTAL for Phase 3	P	226,000
(at P 20.5 per dollar	$	11,024
GRAND TOTAL for all Phases	P	1,004,000
(at P 20.5 per dollar	$	48,975)