ICLARM ANNUAL REPORT 1996

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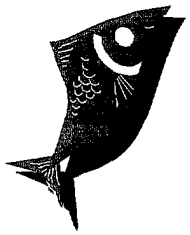

For those who use and depend on fish and aquatic life in the developing world

"A profound and dramatic change
is occurring in the living aquatic
resource systems of the globe,
and this change will cause
a transition for those
who depend on and use the resources
Many interventions will be required
Research can and must play
a vital role, for the best possible outcomes
cannot be anticipated
without an appropriate research
investment now"

Dr M J Williams
ICLARM Director General

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ICLARM's Commitment

ICLARM is committed to improving the well being and livelihood of present and future generations of poor people in developing countries

We aim for

- poverty eradication,
- a healthier, better nourished human family,
- reduced pressure on fragile natural resources, and
- people centered policies for sustainable development

A way to achieve this

We achieve this by undertaking, facilitating and disseminating scientific research to improve the production, management and conservation of aquatic resources such as fish Our objectives are

- raising and sustaining the productivity of fisheries and aquaculture systems,
- protecting the aquatic environment,
- saving aquatic biodiversity,
- improving policies for sustainable development of aquatic resources,
- strengthening the capacity of national programs to support sustainable development

We believe this work will be most successful when undertaken in partnership with national government and nongovernment institutions and with the participation of the users of the research results

The guiding principles for our research are

- sustainability,
- equity,
- gender role in development,
- participation,
- systems approach, and
- anticipatory research

The values of our work are

- excellence in achievement,
- relevance to our beneficiaries needs
- partnerships,
- centerwide teamwork,
- communication,
- efficiency and flexibility in program delivery, and
- continual growth in our knowledge and understanding

International links

ICLARM has its headquarters in the Philippines and research sites in Malawi, the Solomon Islands Bangladesh the Caribbean and Egypt We also have outposted officers in Denmark France and Canada

In 1992, ICLARM joined the CGIAR (Consultative Group on International Agricultural Research) which is under the umbrella of four co sponsors FAO (Food and Agriculture Organization), World Bank UNDP (United Nations Development Programme) and UNEP (UN Environment Programme)

We are pleased to present this introduction and overview of 1996 To better meet and reflect the growing worldwide demands for knowledge and techno logy to assist the management and wise use of living aquatic resources, ICLARM assumed a new organizational and program structure at the start of the year Believing that the content of our work pro gram is only part of the equation however, we have also developed a forward looking policy that spells out how we wish to conduct our work in partnership with many others who share our vision

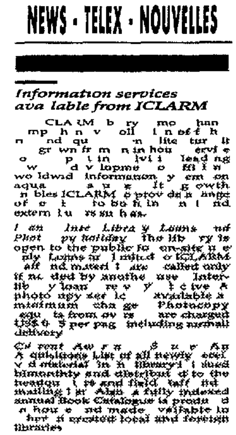
Living Aquatic Resources

Issues relating to living aquatic resources, especially those concerning fisheries and aquaculture remained firmly on the public agenda in 1996 Indeed the theme of this annual report is media attention The two main areas of public concern are the fisheries aquaculture environment nexus and how to make aquaculture more sustainable, productive and equitable in the distribution of its benefits Underlying these concerns is an awareness of the transition in the contribution of fisheries to sustainable food security ICLARM has been active in examining the implications of this transition Fish, once a cheap source of protein for many of the world s poor, has appreciated in real price, world fish stocks are under heavy pressure at current exploitation levels, and aquaculture while making great gains in production, tends to yield direct benefits primarily to higher income groups unless specific technology interventions can ensure greater equity Growing pressure on the environment including the aquatic environment further limits the productive capacity of natural resources such as water and biodiversity

The World Conservation Congress of the World Conservation Union (IUCN) held a workshop on fisheries and conservation drawing for the first time many mainstream fisheries participants into a dialogue on conservation issues and coinciding with the controversial inclusion of several commercial fish species on the IUCN s Red Lists The IUCN invited ICLARM to convene a workshop session on fisheries It predicted a major new phase of fisheries management action and greater use of the precautionary approach in management decisions The policy and technical meetings of the International Convention on Biological Diversity included workshops on aquatic resources and aquatic biodiversity many of which were attended or co organized by ICLARM staff

Introduction

Sustainable aquaculture received attention from experts and the public alike ICLARM is concerned about how poor people can share in the promised benefits either as producers or consumers Our research interventions are targeted to efficient and ecologically sustainable systems based on effective affordable and available inputs for small scale producers (e g integrated aquaculture agriculture giant clam farming), and to more affordable products (e g improved breeds of tilapia) for the consumer In all cases, ICLARM s work focuses on environmentally friendly systems those systems which tend not to cause major environmental problems or which even improve the environment



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Information services ava lable from ICLARM

Top Performers

In pursuit of ICLARM s mission to improve the well being of poor people in developing countries we are pleased to note several outstanding achievements by ICLARM staff, staff teams and partners in 1996 Those we would especially like to highlight are

The team that produced FishBase 96, the second annual update of this CD ROM Drs Rainer Froese Daniel Pauly and all those working on and contributing to FishBase in ICLARM and in over 100 partner agencies around the world This knowledge base continues to grow in content and design and is becoming the world s foremost repository of the existing knowledge on fish Its usefulness is expected to increase further in 1997 as it becomes a core element of a major fisheries resources and aquatic biodiversity management training initiative in African, Caribbean and Pacific countries, which is supported by the European Union and implemented through ICLARM and its regional partners

Another global knowledge base is our second noteworthy achievement The ReefBase team, led by Dr John McManus and joined by many collaborators interested in reefs, produced and released the ReefBase CD ROM at the 8th International Coral Reefs Symposium in Panama in June The database already contains information on over 6 000 reefs, and its content will expand over the next few years as better coverage of existing reef information is achieved It is becoming a source of critical information for decision makers concerned with managing reefs on which millions of people depend

Drs Daniel Pauly and Purwito Martosubroto (now of FAO, formerly of the Directorate General of Fisheries, Ministry of Agriculture, Indonesia) editors, and the chapter authors of the book Baseline Studies in Biodiversity the Fish Resources of Western Indonesia have produced a significant scientific work highlighting the characteristics of the fisheries resources of Indonesia and developing new, biodiversity based perspectives on them from survey data collected before and after the development of these fisheries

Drs Robert Pomeroy, Richard Pollnac (University of Rhode Island, USA) and Ms Brenda Katon reviewed community based coastal resource management projects in the Philippines This review gives important insights into the success rates of such projects and the factors that underpin their progress It is a very necessary review as the world moves to more community based activities in natural resource management

ICLARM released its partnership policy a first for ICLARM and for a CGIAR center Our policy carefully developed by the staff and the Board over the last two years, lays out the objectives principles and strategies for partnership Dr Modadugu V Gupta, Director of International Relations was responsible for guiding the final stages of this important policy

Completing its work in August 1996 the Fisheries Sector Program (FSP) training team produced a series of field based training courses and packages of training materials By studying a number of bays in the Philippines this team of specialists led by Geronimo Silvestre and Len Garces developed and refined the methods which they eventually integrated into training courses and materials

Anthony Hart and Dr Johann Bell of the ICLARM Coastal Aquaculture Centre presented a paper on reseeding giant clams to the wild at the 2nd World Fisheries Congress in Brisbane This paper proposed that a reseeding program would only be viable if coupled with village husbandry of clams Protection of young clams is only possible withir managed grow out but is essential for the survival of sufficient numbers in the early stages of reseeding

The Publications Unit of ICLARM has improved efficiency and service delivery The Unit is clearing up a backlog of publications and establishing new project management systems

Consultative Group on International Agricultural Research

As part of the renewal process of the CGIAR, which commenced in 1994 and concluded in 1996 we saw the establishment of new partnership committees the Private Sector Committee and the Non Governmental Organizations (NGO) Committee Members of both committees visited ICLARM for discussions in 1996 The NGO Committee met with a group of our Philippine NGO collaborators to learn more about the research partnerships and projects in which we collaborate

The CGIAR also introduced a new funding formula at the Mid Term Meeting (MTM) held in Jakarta in May This formula is designed to allocate the World Bank s contribution to the centers (approximately 15% of total CGIAR funding) in relation to the funds raised from other dono s, as well as to build up some reserves for the Bank to meet serious funding shortfalls over the next few years The new system also puts the onus on the centers to estimate their own incomes as the basis for the Bank s contribution This necessitates more direct contact with all donors, some of whom had previously notified their contribution through the World Bank or the Finance Committee of the CGIAR

The CGIAR MTM was also a landmark for ICLARM as we announced, and gained CGIAR support for, the Board s decision to accept the offer of the Government of Egypt to use the research facilities at Abbassa The Board determined that the site would be used for two main functions first as a hub for ICLARM s collaborative research and training activities in Sub Saharan Africa and the West Asia/North Africa region addressing food security, policy and human resource issues through collaborative research with partners in tne region, and also as a site for selected upstream region and global research relating to topics such as biological diversity, natural resource management, genetic conservation, monitoring and improvement, health and nutrition of aquatic species and policy issues relating to fisheries, aquaculture and other aquatic resource uses

During 1996 all CGIAR centers were required to begin developing their medium term plans (MTP) to cover the period 1998 2000 For ICLARM this was our second MTP as a member of the CGIAR We began by putting together a discussion paper outlining our plans This paper was circulated to over 400 stakeholders in mid 1996 We received detailed written responses from about 120 people and organizations In September, an 11 person scientific advisory panel was convened for three days to discuss the paper and the responses and to give their own views on our research directions The Board s Program Committee and then the full Board, deliberated on the reports and guided staff and management in compiling a final draft of the plan for consideration by the CGIAR in early 1997

For ICLARM this planning phase provided an ideal opportunity to consult widely on our future research programs

ICLARM faces its next full External Program and Management Review in late 1998/early 1999 In preparation for this CGIAR managed review we continued our program of internally commissioned external reviews with a full review of the Corporate Services Division in April 1996 This review provided the Board and management with valuable assistance in improving the delivery of efficient effective and well targeted support services

The CGIAR celebrated its 25th Anniversary in 1996 with a special day during International Center s Week (ICW) in Washington in October Several founders and former chairs of the CGIAR joined the celebration The centers presented their latest findings during ICW 96, ICLARM made its presentation in the Asian regional session

Donor Relations

Many government donors continued to experience financial constraints in 1996 as their national governments gave less priority to overseas development assistance This affected their capacity to provide additional assistance to CGIAR centers ICLARM maintained an active program of donor contacts and welcomed visits from many donor representatives Since the Technical Advisory Committee held its March meeting at our partner institute, the International Institute for Rice Research at Los Baños, and because the MTM took place in the Asian region (Indonesia), ICLARM enjoyed many follow on visits from donors

ICLARM welcomed new project donors in 1996 when the Swedish International Development Cooperation Agency (SIDA) and the MacArthur Foundation of the USA became its supporters

Legal Standing

In January 1996 ICLARM welcomed Australia s accession to our International Agreement signed by the gove nments of the Philippines Denmark, Malaŵi and Vietnam in 1993

In October we were delighted when the Senate of the Government of the Philippines passed Senate Resolution No 62 signaling the entry into force of the headquarters agreement between the Government and ICLARM Following the passing of this resolution, ICLARM moved to secure all the necessary formal arrangements to establish a range of immunities and privileges as specified in the headquarters agreement These arrangements are expected to be completed by mid 1997

Management

The 1996 operating expenses of ICLARM were US$ 9 231 million an increase of 22% over the final 1995 figure For revenues unrestricted core accounted for 62% ($5 762 million) of total revenues although $1 268 of this was still receivable at the end of 1996 Funds were provided by 42 donor sources 14 of which were unrestricted core donors

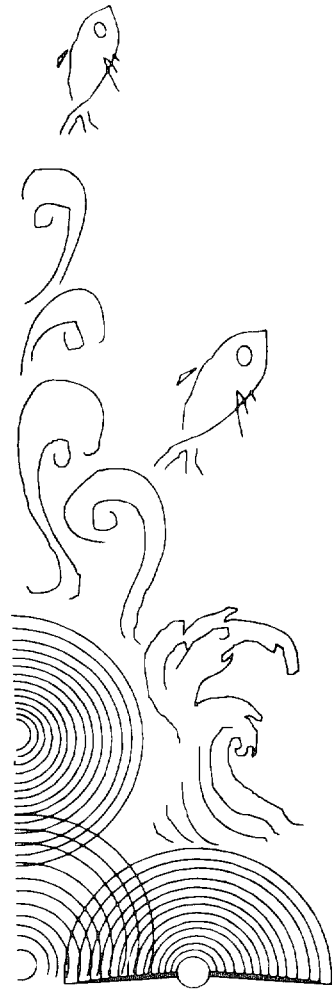
As of December 1996 ICLARM employed a total staff of 227 consisting of 152 in the Philippines 51 at the Coastal Aquaculture Centre in the Solomon Islands, 8 in Malaŵi, 14 in Bangladesh and one each in France and Denmark Of these staff 27 were internationally recruited and the remainder were recruited locally or regionally at the various ICLARM sites

A new organizational structure

In January 1996, ICLARM introduced a new program and organizational structure developed through consultation with staff in 1995 and approved by the Board (see diagram on page 69) New executive positions were created, namely a Deputy Director General (Programs), a Director of International Relations and an External Relations Officer These positions, along with the new position of Associate Director General (Corporate Services), were filled during 1996 by

Dr Peter Gardiner, Deputy Director General (Programs), formerly of the International Livestock Research Institute,
Dr Modadugu V Gupta, International Relations Officer and formerly officer in charge of ICLARM s Bangladesh office,
Mrs Susan Bonetto, Associate Director General (Corporate Services), formerly a management consultant from the United States of America, and
Dr Marian Fuchs Carsch (consultant), External Relations Officer, formerly of the International Irrigation Management Institute

A program planning meeting was held in February to provide more detail to the program structure Further development of these new programs and the linkages among them continued throughout the year and is expected to continue under the new Medium Term Plan



Search for a headquarters site

During 1996, ICLARM continued negotiations with the Subic Bay Metropolitan Authority (SBMA) for a suitable headquarters site at Subic Bay, 120 km west of Manila By mid year the outlook was promising A consultancy team from Denmark, the United Kingdom and FAO undertook an initial concept design mission with funds generously provided by Danish International Development Assistance (DANIDA) The team visited ICLARM, undertook a needs assessment and then inspected a potential site in Subic Bay The Board of Trustees met at Subic Bay in September and held discussions with the chair of the SBMA A Letter of Intent was submitted to the chair of the SBMA

Despite this preparation, no final agreement with the SBMA had been reached by the end of the year A suitable headquarters location continues to be one of ICLARM s greatest needs

Outreach Sites

Egypt

ICLARM with CGIAR support decided to take up the Egyptian Government s offer to use the Abbassa facility Negotiations on the host country agreement were close to a conclusion by the end of the year In anticipation of a favorable outcome planning for refurbishment of the facility began in mid 1996 It was carried out by Mr Tony Pickett an Australian agricultural consultant with considerable experience in development projects in Egypt

Senior international staff were recruited for the positions of Deputy Director General (Africa and West Asia) Facilities Manager and Principal Scientist All staff were expected to take up their positions in early 1997

The Solomon Islands

In 1996 the CAC commenced new research into the rearing of tropical sea cucumbers with funding from the Australian Centre for International Agricultural Research (ACIAR) and expanded its base infrastructure to accommodate the new project and staff The CAC also welcomed to its site a project of the Japan International Cooperation Agency (JICA) for rearing green snails

Bangladesh

Work continued on small scale aquaculture in farming systems with funding from the US Agency for International Development (USAID) Studies on co management of inland water bodies entered a new phase under funding by the Ford Foundation Both projects involved many national partners among NGOs and government agencies engaged in research, management and extension services

Malawi

Research on small scale integrated aquaculture agriculture continued in Malawi ICLARM signed a new five year host country agreement with the Government of Malawi Discussions were held with government officials on the possible broadening of ICLARM s work in Malawi to encompass fisheries co management studies on the fisheries of the large lakes

Caribbean

In 1996, ICLARM commenced two projects in the Caribbean, both studying the impact of marine protected areas One is being conducted with the University of the West Indies in Jamaica and funded by the Inter American Development Bank The other is being conducted in the British Virgin Islands in association with the Department of Natural Resources and funded by the Department for International Development (DFID) of the United Kingdom Both projects are managed by Dr John Munro

Governance

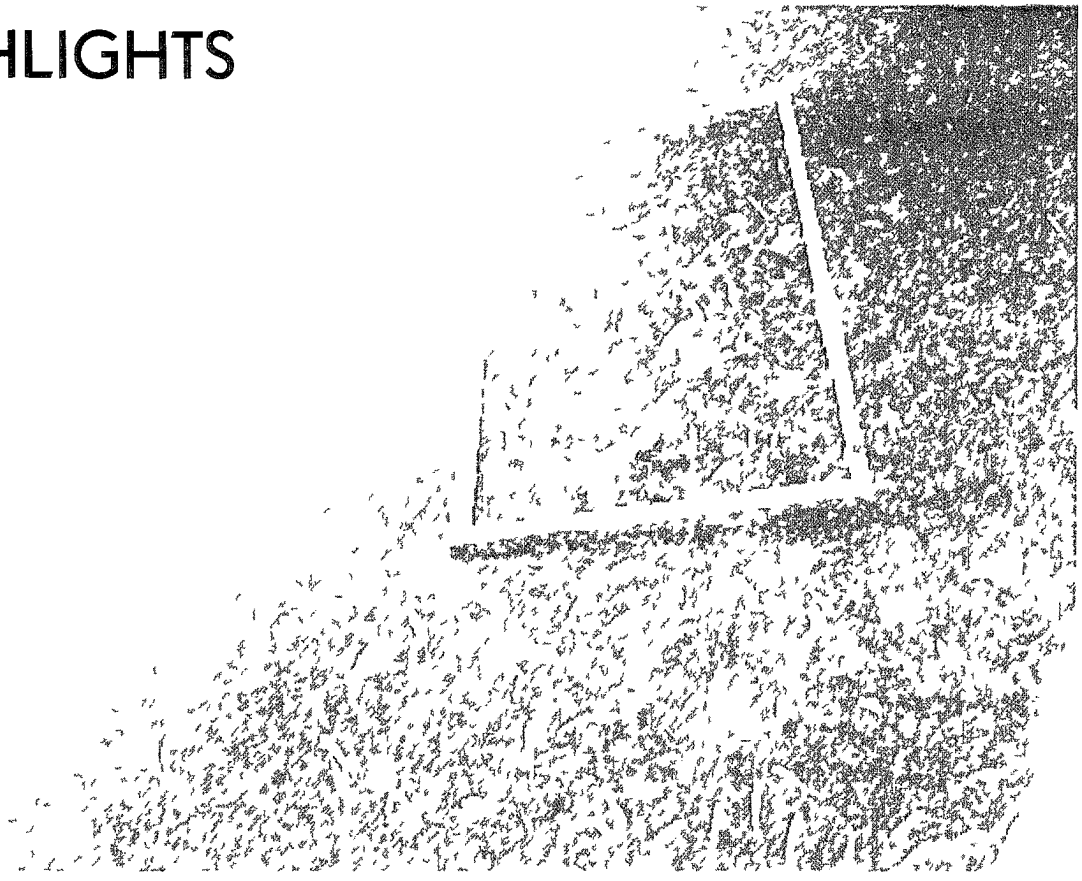
The Board of Trustees conducted two successful Board meetings and oversaw a full set of accompanying committee meetings The Board continued to monitor closely the growth of ICLARM and to maintain close linkages with CGIAR developments It sought to evaluate its own progress and procedures New members were inducted into Board and CGIAR procedures Efforts were made at each meeting to provide opportunities for Board members to get acquainted with ICLARM staff

Finally we would like to draw your attention to the media coverage and to ICLARM s research highlights featured in this report These have been selected to give a flavor of the milieu within which ICLARM operates and to impart something of the urgent need for the products of ICLARM s work

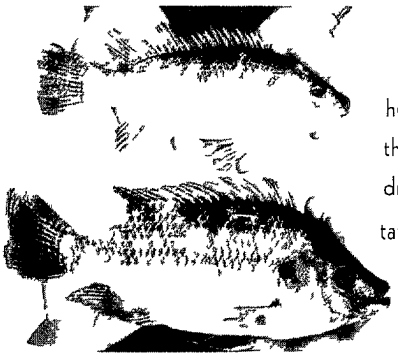
John L Dillon
Board Chair

Meryl J Williams
Director General

RESEARCH HIGHLIGHTS



Saving Biodiversity Characterizing Tilapia Genetic Resources

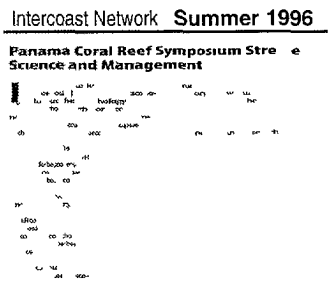


The importance of conserving the biological diversity and genetic resources of plants and animals on which humans depend for food and other needs is clear Although it is natural for new species to evolve and others to die out, overexploitation and widespread destruction of habitats as a result of the burgeoning human population and its consumption habits have quickened the pace of species loss even as the consequences of it become more dire

In this context aquatic resources have been relatively neglected Fish and fish products have made significant contributions to food and employment all over the world yet most efforts to preserve biodiversity have focused on terrestrial species and ecosystems Currently over 5 000 species of finfish are used by humans Several hundred other types of aquatic organisms are exploited and many more perhaps thousands have as yet undiscovered uses Unfortunately many fish species are vulnerable to extinction especially freshwater species Seeing in this situation both a problem and an opportunity the World Conservation Union (IUCN) invited ICLARM to become a major partner in the global assessment of the status of all freshwater fish species in order to promote their conservation and sustainable use

Aquaculture is gaining attention for its potential to meet some of the world s increasing food requirements The genetic resources available for aquaculture and fisheries are mostly to be found in the wild or near wild populations Domestication for aquaculture is centuries behind crop and livestock breeding **There remains a wide array of aquatic species to be characterized for evaluation of their potential for aquaculture** Among finfish, the tilapias (African fish of the family Cichlidae) are of great interest for aquaculture around the world Tilapias have an enormous potential for increasing the supply of fish from inland fisheries and fish farming In five Asian countries the production of tilapias from aquaculture was over half a million tonnes in 1994 It is therefore vital to characterize tilapia genetic resources on farms and in the wild for their future conservation and use

Fisheries and aquaculture can pose a threat to fish genetic resources and aquatic habitats through overexploitation destructive fishing methods spreading disease destruction of habitats and genetic changes by inbreeding Maintaining aquatic genetic diversity is crucial for ensuring the sustainability of the natural and manmade systems that supply human needs for food fish **The Ghanaian Institute of Aquatic Biology (recently renamed the Water Resources Research Institute) and the Zoologisches Institut und Zoologisches Museum (ZIM) of Hamburg University joined ICLARM in launching a collaborative project in 1991 to characterize the genetic resources of tilapia in Ghana** Natural tilapia genetic resources are restricted to Africa, but the main aquaculture industries are on other continents mainly Asia and the Americas The aim of this project was not only to assist Ghana but also to devise and test methods for tilapia characterization in general It was recognized that the methods for such characterization must be affordable and usable both in the field and in the laboratories of the tropical and subtropical developing countries The study used 10 different species of tilapia from wild populations in Ghanaian rivers and lakes To broaden comparisons species not indigenous to Ghana were also taken from other locations



This exercise culminated in 1996 with the publication of a manual entitled A Biochemical Laboratory Manual for Species Characterization of Some Tilapiine Fishes The manual describes detailed procedures for wide application in biochemical systematics, with approaches borrowed from protein chemists The manual describes detailed serological and electrophoretic methods developed through the project These methods emphasize non lethal sampling protocols so that fish can be characterized for conservation and for use in breeding programs The diagnostic test results presented in the manual provide reference data for tilapias but it is expected that these methods can be successfully applied to other fish groups as well

Irreversible biodiversity loss will continue unless there is wider public awareness of its consequences and more support for action to stop it The efforts of scientists and other committed individuals is not enough It is human nature either to fear or ignore things that are not understood, and part of the problem raising support for biodiversity conservation is the lack of knowledge about the diversity of living organisms, their importance for humankind, their ecological functions, and how endangered they are **Much of the planet s biodiversity may disappear before we even recognize its importance ICLARM is helping to close this knowledge gap and to raise awareness on a broader scale of how valuable natural aquatic resources really are**

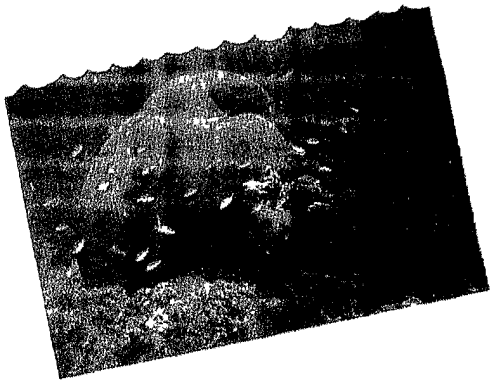
ReefBase Harnessing Information Technology to Preserve Our Coral Reefs

A great part of the coral reef resources in the world are in danger of destruction due to over exploitation, degradation of the habitat and, possibly, changes in global climate conditions A survey by the International Union for the Conservation of Nature concluded that coral reefs in 93 countries have been damaged or destroyed In the Philippines alone fisheries loss due to reef degradation amounts to millions of dollars a year directly affecting thousands of jobs and indirectly affecting family members dependent on them On a global scale the loss in fisheries income may reach billions of dollars a year and affect millions of people

Few figures are available to indicate the sustainable yields that might be extracted for different reef types, current and potential yields of different reef species how yields are affected by declining reef health and loss of productive capacity and the value of non extractive uses of reefs such as tourism Sophisticated methods to quantify the deterioration of coral reefs have been initiated in some areas, while hardly any assessment or monitoring activities exist in other areas Information from these activities is usually published in primary scientific literature and may not be readily understood by a non technical reader A larger body of information has been compiled in technical reports which are generally for limited distribution This makes it extremely difficult for the people tasked with managing coral reefs to obtain the information needed for good management even when comprehensive information exists

Several initiatives are underway to monitor the status of and threats to reefs at the global regional and national levels but little progress has been made in database systems that will ensure broad transferability of data and interpretation of results The need for such a tool is becoming increasingly urgent if appropriate management is to be introduced on a worldwide scale before the health and productivity of reef systems decline to irreversible levels

ReefBase is an effort to gather the available knowledge about coral reefs into one information repository This database was created for resource managers in government and private institutions students scientists academicians divers and other coral reef enthusiasts The information in ReefBase is intended to arrive at assessments and summaries about coral reefs worldwide and to facilitate informed decisions regarding coral reef use and management After two and a half years of development with support from the European Commission, the Government of the Netherlands and the US Agency for International Development ReefBase was officially released in June 1996 It has subsequently been presented at a number of international forums throughout the world ReefBase is the official database of the Global Coral Reef Monitoring Network and directly addresses priority actions of the International Coral Reef Initiative now endorsed by 75 governments



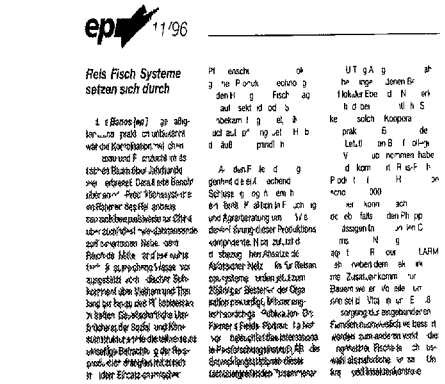
The information in ReefBase is gathered from published literature as well as conference proceedings, technical reports news articles theses and manuscripts contributed by institutions and research groups involved in the study of coral reefs Visual features such as aerial, underwater and land based photographs and satellite images help create a more comprehensive and user friendly database Two mapping systems, WinMap and ReefMap, are also included in ReefBase ReefMap displays standard format maps of major reef systems prepared by the World Conservation Monitoring Centre, while WinMap provides geographic displays of data in ReefBase

In August 1996, ReefBase went on line with its own web page containing information on both the ReefBase project as well as its CD ROM package The web page includes a bibliography of over 6 000 references and a register of 6 500 coral reefs around the world Within a few months, some 50 other web sites had either made reference or established direct links to ReefBase Thanks to ReefBase thousands of people will have access to a lot of user friendly data and information about our endangered coral reefs ICLARM continues to build up the information base and refine its components ReefBase is a remarkable contribution to the management of marine resources and made its inaugural appearance to wide acclaim in anticipation of the International Year of the Reef 1997

Making an Old Idea New Integrated Farming Systems

It is becoming clear that monoculture and high input farming have some harmful side effects Not only have there been undesirable ecological consequences but many serious socioeconomic problems have emerged for people dependent on farming especially small scale and marginal farmers These failures point to the need to design farming systems to fit the local environments, rather than systems that try to make the environment suit technology that has been developed somewhere else

One approach suited to a range of complex and resource poor farming systems is to develop integrated farming systems that are adapted to local conditions, have input from the local district or farm minimize the use of expensive purchased inputs and maximize the farm s input output relationship by recycling natural resources Not only does it look as though such systems may prove to be quite productive (in total) and environmentally friendly, but also that they may help small scale farms become economically viable and more low risk This would help alleviate the social stresses associated with increasing rural poverty and pressure on urban areas in developing countries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Reis Fisch Systeme setzen sich durch

Compared to standard monocrop farming, integrated systems promise long term sustainability and efficiency for small farmers **ICLARM is taking steps to describe fully and to quantify farming systems to understand the interrelationships, how they work and how they can be improved** Integrated farming has been practiced for centuries in many countries but has not had sufficient impetus to evolve and spread Even though organized research in this field is fairly recent the underlying ideas are already being disseminated through NARS NGOs and national extension services For example CARE has a project that has taken the knowledge and practice of integrated farming to over 1 000 farmers in Bangladesh

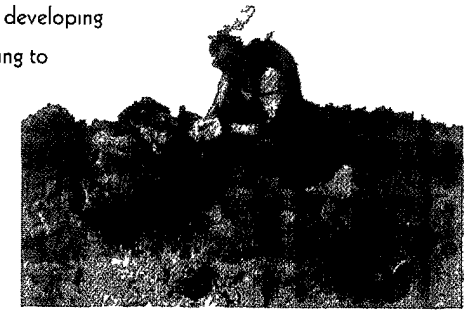
IAASP studied four Philippine small holder rice farms from 1994 to 1995 to develop a detailed model for monitoring and evaluating the performance of a small farm **The study compares the ecological sustainability of four rice based farming systems, including monoculture systems and highly diversified and integrated aquaculture agriculture farms** Resource flows in an integrated fish rice, plant and animal system are identified with the help of the farmers themselves This is then tied up with a quantitative system based on ECOPATH a software designed at ICLARM for modeling and evaluating ecosystems The aim is to develop a quantitative approach to developing an ecologically sound and sustainable aquaculture agriculture system

The ICLARM study is based on regular visits to each farm, checking the farmer s records and sub sampling biomaterials for nitrogen analysis The data on inputs, outputs and recycled farm by products form the basis for steady state nitrogen flow models of each farm These data are analyzed through the ECOPATH software to compare diversity nutrient cycling, and throughput This is done in conjunction with conventional assessment indicators like productivity efficiency net income and returns to labor In addition, the ecological performance is evaluated through goal functions like ascendancy, overhead exergy and structural exergy for ecosystem development **Thus, the project draws on tools and techniques developed within disciplines as disparate as farmer participatory research, agroecological analysis and aquatic ecosystems modeling, and relies on a coherent framework for a quantitative evaluation of the productive and ecological performance of an integrated farming system**

Admittedly this is only a preliminary list of quantitative performance indicators and an analytical framework to assist in the design and operationalization of a healthy and sustainable aquaculture agriculture endeavor at the rural community level But it has a strong potential as an assessment tool and as a basis for developing systems that optimize the management of natural resources while improving the lives of millions of farmers in developing countries where a large percentage of the population still live in rural areas and depend heavily on the farm economy

Beautiful, Delicious, Sustainable Cultivating Giant Clams in the South Pacific

The coral reefs of the warm tropical waters of the South Pacific are home to the giant clams the world s largest bivalve molluscs Giant clams have been used throughout the Pacific region since ancient times and remain a valuable product Their meat is popular for sashimi and other Asian delicacies They can be stocked live in restaurants for freshness and customer appeal Their shells can be used for utensils ornaments and even jewelry The iridescent coloring and intricate shell patterns make giant clams an interesting aquarium item Unfortunately overfishing, poaching and habitat destruction have threatened the stocks of giant clams in the Pacific This is bad news for coastal dwellers around the Pacific region because it deprives them of food and potential income



In keeping with ICLARM s mission to enhance the well being of poor people in developing countries, the Coastal Aquaculture Centre (CAC) in the Solomon Islands has been working to improve the productivity of coral reef fisheries, focusing on giant clams, pearl oysters and sea cucumber **The CAC s research on giant clams centers around developing simple, profitable methods for farming that can be practiced by coastal villag ers, and on devising responsible and practical ways of re establishing wild stocks** Unlike many research centers, the CAC extends its work beyond the biotechnical aspects of farming systems into the commercial sphere

The priorities in 1996 were to reproduce brightly colored specimens of the smaller giant clam species Mantle color is one of the principal determinants of price within the aquarium trade and it appears to be an inherited trait Three types of seed giant clams were harvested from the CAC s land based nursery nurtured through the larval stage at a local aquaculture farm then sold to village farmers

Meanwhile, ICLARM carried out experiments on growth rates and on the effects of adding nitrogen to the production tanks Research also examined the viability of village based farming of giant clams in the Solomon Islands With support from the European Union s STABEX program the number of giant clam farmers doubled from 26 to 52 The new farms will provide sufficient clams to pilot test export markets on a more commercial scale Early results indicate that these farms could supply 500 kg of clams per week even in this early stage of their development The weekly supply is being monitored and is expected to double over the next year

The increasing number of clam farmers in the Solomon Islands and the commercial scale of their activities have provided an opportunity to study variations in growth and survival of giant clams across a broad range of sites **Five species of giant clams are being put through large scale grow out experiments with the active participation of the farmers and support from the Austra lian Centre for International Agricultural Research**

The time needed for clams to reach optimum size for the aquarium market was between seven and 22 months, depending on the species The slower growing species tend to fetch considerably higher prices because of their spectacular colors **At this stage, however, the data indicate that it is possible to grow three species profitably at village sites**

On behalf of village farmers the CAC sold 20 000 giant clams to the aquarium market in 1996 In preparation for marketing increasing quantities of clams in Asia, ICLARM experimented with methods for transporting the clams dry in order to reduce freight costs Early tests revealed that one species packed in oxygen at 24°C for 16 hours had a 100% survival rate one week after unpack ing

To sustain the benefits of giant clam farming and to counteract the effects of past overexploitation, the CAC is developing methods for restocking clams in the wild The local farmers help in this effort by setting aside a certain number of clams from each cultivated group These are protected in their cages for two or three years and then placed onto coral reefs

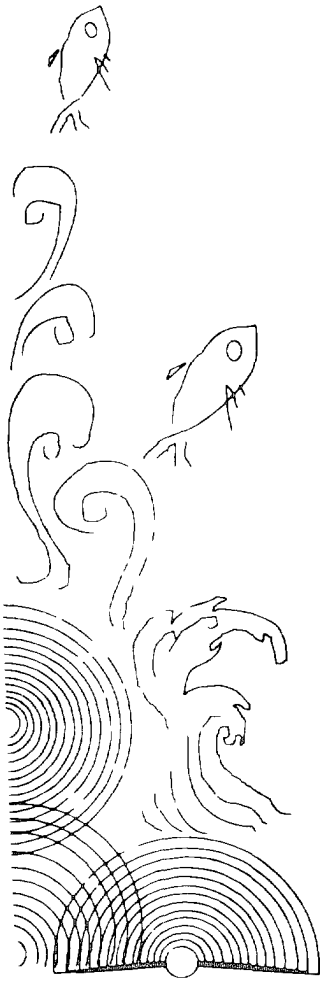
The CAC continues to generate promising results from its experiments on giant clam cultivation and marketing and the growing numbers of giant clam farmers in the region indicate that word of the potential for sustainable livelihood has spread

How to Make Community-Based Resource Management Work Drawing Lessons from the Past

People who live near and depend on a natural resource for their livelihood are most intimately concerned with the ability of that resource to continue providing them with a means of survival

This may frustrate or alienate small or remote communities who feel that the government does not take a serious enough interest in their needs and concerns Even when the government would like to get involved, financial constraints or other priorities often get in the way So why not let the local residents themselves take over some of the management responsibility? With adequate training and support, they can be effective partners for local and national governments in looking after the natural resource base with an eye to long term sustainability

By the early 1980s, for both practical and psychological reasons, the need to decentralize and devolve responsibility for natural resources management to local governments and communities began to gain recognition among development practitioners and policy makers in the Philippines They also saw the value of intensifying the participation of resource users in decisionmaking and project implementation Consequently, between 1984 and 1994, over 100 projects were designed by government and non government organizations, relying on local as well as foreign funds to introduce community based coastal resource management (CBCRM) These projects targeted a range of resources from fisheries to mangroves to coral reefs



Because CBCRM was a relatively new approach, many project planners had to feel their way through uncharted territory Even though community based management is no longer so new, how can policy makers and project planners make sure they do not simply fumble through the same unknown landscape? By looking at what these projects have accomplished or failed to accomplish and learning from their experiences about the variables and conditions conducive to successful planning and implementation of CBCRM Projects often conclude with an evaluation of their impact, and there is documentation of conclusions concerning methods of participation, decision making or resource management Yet each project will generate lessons of only limited applicability elsewhere, because each site and each situation has unique characteristics Clearly, the way to derive the greatest benefit from their experiences is to compare them to each other to look for mutually reinforcing findings, or to contrast differing outcomes to understand why certain approaches work in some places better than others Unfortunately, such comparative impact evaluations have never been performed

In 1996 an ICLARM research team concluded its study of nine CBCRM projects and their impact Using a standardized methodology, the team reviewed and assessed the performance of completed CBCRM projects in order to help improve planning and implementation processes for future projects The research team selected a number of sites located in the Central Visayas and Palawan as these were part of a major upcoming CBCRM effort, funded by USAID, which might benefit from the results of the study In each region, projects that had been more successful were chosen along with less successful ones in order to identify the factors and conditions that may contribute to varying levels of success as well as to the long term sustainability of each project s impacts An important feature of the study is that it applied a rigorously developed quantitative methodology to the comparisons

Although the study was by no means an exhaustive evaluation of CBCRM projects in the Philippines having examined only a fraction of the projects implemented over the last 10 years it did yield a number of important lessons that can be of use to development practitioners as they prepare and execute new projects in the future One finding of the study is that early and continuous participation of project beneficiaries (e g fisherfolk) in project planning and implementation tends to result in more positive evaluation of impacts Similarly pre existing cultural attitudes that favor collective action most often yielded perceptions of positive change as a consequence of the project Projects with limited time or resources may try to take short cuts in the arduous process of mobilizing people for collective action, **but this study shows that committed capacity building efforts pay off in that they enhance the people s sense of empowerment and confidence in their ability to affect their own future**

The study also found that government assistance through supportive legislation, funding and reliable enforcement is critical The people cannot do it alone! One especially interesting finding indicates that most fishers enjoy their occupation and would prefer not to change to another job even when pressure on resources leads to diminishing household income Considering that one of the most common thrusts of development assistance in recent years has been to find alternative employment for fishers in stressed areas this study suggests that a more effective and locally acceptable approach may be to seek *supplementary* income generating activities instead

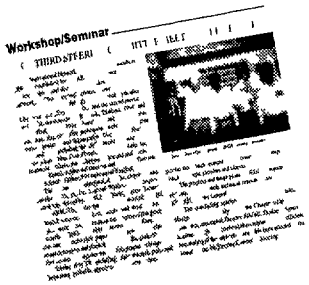
The results of this impact evaluation study can be of use to donors, development practitioners, and local as well as national policy makers Since they all share the goal of promoting an improved quality of life for coastal communities while protecting natural resources for future generations, learning lessons from each other s experience can be a valuable step toward preparing more effective initiatives in the future

Pooling Our Resources Networking for People, the Environment and Scientific Progress

Aquatic resources provide a very substantial proportion of the food requirements of the world population Fish the world s fifth most important agricultural commodity, accounts for 7 5% of world food production Unfortunately, current rates of exploitation may be outpacing the ability of natural resources to regenerate themselves, to the detriment of future generations of humans who depend on them And pressures will only increase with our expanding population

What aquatic resources require is a careful husbanding of the current stocks and scientific farming to expand them Of course this is not as simple as it sounds It requires a great deal of conscious planning and research Necessary steps include accounting of current stocks, studies on their genetic composition development of methods for efficient breeding and reproduction, creation of productive farming systems, maintenance of biodiversity protection of their deteriorating environments, and further efforts to boost awareness among policy makers on what they can do to help These efforts demand not only financial resources but also trained manpower both of which are in short supply in developing countries

ICLARM is involved in the whole range of these activities In many cases it is not the primary doer **As well as performing primary research, ICLARM also acts as a catalyst in initiating, promoting and bringing together the results of work being done in this field around the globe,** all toward its vision of improving the well being and livelihood of present and future generations of poor people in developing countries



ICLARM s program on International Partnerships and Networks is a major instrument of this work ICLARM believes that to be successful its work must be undertaken in partnership with national government and non government institutions calling upon the best scientific resources available and with the participation of resource users and beneficiaries All projects undertaken by ICLARM are in collaboration with national systems, advanced scientific institutions individual scientists and farmers/ fishers To make its projects relevant on a larger scale ICLARM is formalizing, strengthening and widening the system of partnerships for all its projects One such partnership is the International Network on Genetics in Aquaculture (INGA) which has 13 member countries Bangladesh, China Cote d Ivoire Egypt Fiji Ghana India Indonesia Malawi Malaysia Philippines Thailand and Vietnam

Though aquaculture is being widely practiced in the developing world, there has been little concerted effort towards the application of scientific principles of genetics and husbandry Recent studies on salmon, trout and Nile tilapia have clearly demonstrated the potential for achieving sub stantial gains in aquaculture production through the application of quantitative genetics International scientific collaboration can enable developing countries to enhance the productivity and profitability of aquaculture

In 1996 INGA focused on exchange of methods and materials, on the formulation of collaborative research projects, on training of personnel, and on dissemination of information In all these areas, ICLARM coordinates and assists in the activities of INGA and its members For example, germplasm developed in the Philippines under the GIFT project has been made available to Bangladesh, China Indonesia, Thailand and Vietnam ICLARM is helping to formulate protocols and quarantine procedures for the transfer of germplasm and to assist member countries in getting resources for training in breeding and farming of fish Several institutions have received help in preparing projects and proposals for research and extension services ICLARM encourages organizations to participate and share information

The importance of networking lies in the old adage two heads are better than one! It promotes collaborative solutions rather than isolated successes Networking makes research cheaper and more efficient by eliminating duplication It also makes results more accessible to those who need it and can make use of it Networking gives a wider focus to specific research and experimentation by looking at its relevance under different conditions It is not enough, for example, to be able to farm tilapia which grow faster and bigger Can this be done without expensive inputs so that it is feasible for poor farmers to adopt and will it provide fish which is affordable for a large number of consumers in the developing countries? What are the ecological consequences? Will it have a negative impact on biodiversity? Can the surrounding habitats be protected from damage? For example shrimp aquacul ture in many parts of Asia is being practiced in a slash and burn manner and is seriously damaging the surrounding areas (A quick profit is always attractive when the long term costs are borne by someone else!) Exchange of information can ensure that at least the same mistake is not repeated **Thus, networking is expected to promote an awareness of the overall picture and improve planning and governance at the local, national and regional levels** As a cornerstone of ICLARM s operating philosophy networking and partnerships have a bright future in natural re sources management

Partnerships in Research

Research partners from Asia and Africa on a visit to tilapia culture site in the Philippines

Since its inception ICLARM has undertaken research, conducted workshops and provided training and advisory services with some 300 partners from 77 countries worldwide National aquatic and agricultural research systems (NARS), government and non government organizations, advanced scientific institutes and other international research centers have all been among ICLARM s collaborators

Deputy Prime Minister and Minister of Agriculture and Land Reclamation of the Government of Egypt opening the Third INGA Steering Committee in Cairo Egypt

In its research, ICLARM draws on the human and physical resources of collaborating institutions In this way, ICLARM contributes directly to the improvement of research capabilities of partner institutions and simultaneously trains national scientists in developing countries In 1996, ICLARM conducted over 40 research activities in partnership with 115 institutions from developing countries

In early 1996, ICLARM created an International Relations arm to help forge linkages with NARS from developing countries and to coordinate the international information and research networks in which ICLARM is involved In addition, its Board of Trustees has approved ICLARM s Partnership Policy in Research and Related Activities to specify the principles and strategies for partnerships

One of ICLARM s networking activities involves coordinating the International Network on Genetics in Aquaculture (INGA) INGA—which seeks to improve aquaculture production through genetics research—currently has 13 member countries from Asia Pacific and Africa The network has been actively assisting its members through activities including training national scientists in genetics, developing national breeding programs, coordinating fish germplasm transfer among member countries for research, promoting the exchange of information, particularly through the publication of an INGA newsletter in Naga the ICLARM Quarterly and, formulation of regional research programs such as the genetic improvement of carps in Asia and the characterization of tilapia genetic resources in Africa

Furthermore ICLARM continues to facilitate the exchange of information among members of the Network of Tropical Aquaculture Scientists (NTAS) and the Network of Tropical Fisheries Scientists (NTFS) by publishing in Naga the two networks newsletters Aquabyte and Fishbyte, respectively Currently, NTAS has 645 members from 95 countries, and NTFS has 1 383 members from 129 countries

PROGRAM/DIVISION SUMMARIES

Program/Division Summaries

Recently ICLARM expanded and restructured its internal organization As a result, this chapter has been added to the report to give an overview of the research programs and support divisions that became operational under the new system in 1996 (one program on fish health, is still under development) More details on specific projects and outputs can be found in the chapter entitled Work in 1996

Biodiversity and Genetic Resources Program (BGRP) The Biodiversity and Genetic Resources Program pursues strategic research on fish biodiversity and genetic resources and the development of genetic resources research methods in partnership with international, regional and national agencies and institutions NGOs, scientists, farmers and fishers

Accomplishments in 1996

The FishBase 96 CD ROM was released at the 8th International Coral Reef Symposium in Panama City in June 1996 together with the 179 page book *FishBase 96 Concepts design and data sources* By the end of the year FishBase had been expanded to cover over 16 500 species with information extracted from over 10 000 references, and had been distributed to more than 700 users in 90 countries Its collaborators had grown in number to over 200 in more than 50 countries In 1996, a number of scientific papers that drew exclusively on FishBase data and software were submitted for publication

The project Research on Tilapia Genetic Resources of Ghana for their Future Conservation and Management in Fisheries and Aquaculture was successfully completed in June Its main output was a manual on species characterization, co published in 1996 by ICLARM and the German Agency for Technical Cooperation (GTZ) This manual was presented for critical review and improvement at an international workshop in Accra, the proceedings of which will also be co published by ICLARM and GTZ

In 1996, BGRP took the lead in developing for ICLARM a draft policy document on Intellectual Property Rights over aquatic genetic resources

In addition ICLARM s FishBase team hosted the first Species 2000 international workshop Species 2000 will produce a valid checklist of all named organisms on earth about 1 75 million species ICLARM has been tasked with developing a prototype for the CD ROM version of the checklist

A European Union funded project to strengthen fisheries and biodiversity management in African, Caribbean and Pacific countries commenced its four year work program in December This is the largest project implemented by ICLARM It will use FishBase to demonstrate the power of databases for research and management purposes, with training activities in 50 developing countries organized through five regional training nodes one each in the Caribbean and the Pacific and three in Africa

Germplasm Enhancement and Breeding Program (GEBP) This program develops techniques for improving breeds of fish, disseminates these techniques, and trains staff in their application

Accomplishments in 1996

The Genetically Improved Farmed Tilapia (GIFT) project, which began in 1988, is a major strategic research initiative in the applied genetics breeding and germplasm improvement of Nile tilapia (*Oreochromis niloticus*) The GIFT project is closely allied with the Dissemination of Genetically Improved Tilapia in Asia (DEGITA) project, which is designed to examine the performance of the GIFT strain and its socioeconomic impact on fish farming households in selected countries in Asia The Project has proved that the farming of early maturing and more efficient strains of tilapia can result in lower prices for these species, which will benefit poor people

The GIFT Project s first generation selection experiment for two traits (growth and frequency of spawning females) and the associated experiments to estimate the magnitude of genotype (families) x season interaction and the response to selection for late and early spawning females were conducted The Project also continued to provide technical assistance to the genetic evaluation component of on farm trials The first phase of on farm trials conducted by DEGITA was completed Results of on farm trials conducted under the auspices of GIFT during 1991 1994 were analyzed Draft manuscripts from the project s four complementary experiments (growth performance testing methodology, genetics of carcass composition sex ratios in diallel cross experiment, and response to selection for frequency of early maturing females) were completed and reviewed

As a means of ensuring the continued and increased availability of genetically improved strains, the national tilapia breeding program in the Philippines has evolved into a non profit foundation known as the GIFT Foundation International Inc Steps were initiated to make the Foundation operational so that it can continue the GIFT activities after 1997

The Project also provided substantial contributions to the International Network on Genetics in Aquaculture It gave significant technical and logistical support to the organization of the Third INGA Steering Committee meeting in Cairo

At the request of national programs, tilapia genetic materials were transferred to the Governments of Bangladesh and Vietnam to initiate formal breeding programs in these countries Breeding plans for GIFT tilapia, mrigal and silver barb were established in close consultation with scientists from Vietnam s Research Institute for Aquaculture

Aquatic Environments Program (AEP) This program was created in early 1996 to consolidate and advance ICLARM s goals of improving the conservation of aquatic habitats, especially coral reefs and the management of coastal zones

Accomplishments in 1996

The most significant of AEP s 1996 activities was the first release of ReefBase, a compilation of available knowledge about coral reefs into one information repository for the benefit of resource managers scientists, students, divers and others The ReefBase 1 0

CD ROM and manual were released in Panama in June at the International Coral Reef Symposium, which was attended by more than 1 500 people Information about the database went out through publications, presentations and an extensive webpage on the Internet By the end of the year, more than 300 copies of ReefBase had been disseminated ReefBase was designated as the official database of the Global Coral Reef Monitoring Network part of the International Coral Reef Initiative (ICRI) Both the Network and ReefBase are a direct response to priority actions identified in the ICRI Framework for Action now endorsed by over 80 countries

In 1996 AEP completed the Lagonoy Gulf Project, leading to specific recommendations for future management of the area This project will contribute to an anticipated ICLARM initiative to consolidate information from studies on 12 bays in the Philippines This will bring together a large amount of information on coastal management and will be extremely helpful to national coastal zone planners throughout the tropics

This year AEP further developed and tested a training package on coastal zone management The package will support training courses for local government officials throughout the Philippines, concurrently, it will be modified for use in other developing countries

Fisheries Resources Assessment and Management Program (FRAMP) This program seeks better tools and approaches to assess and manage tropical fish stocks, including developing methods for acquiring data for aquatic resources management Included in this program is a scientific assessment of the role of marine reserves in fisheries management and the conservation of biodiversity

Accomplishments in 1996

In 1996 a Windows based version of ECOPATH (ECOPATH 3 0), an ecosystem assessment software designed for fisheries was released Individual modules of this software were also improved and, in collaboration with scientists at the University of British Columbia in Canada and DIFRES in Denmark a new package for dynamic systems modeling, termed EcoSim, has been developed Other advances include the development of a multispecies analysis program and the development of a routine to determine yield per recruit for incorporation into ICLARM s FishBase CD ROM The stock assessment package, FAO/ICLARM Stock Assessment Tools (FiSAT), was completed and tested extensively FAO then replicated and distributed the package

The Jamaica based component of a new Caribbean marine protected areas (MPA) project was launched in June in collaboration with the Centre for Marine Sciences of the University of the West Indies A 10 year Host Country Agreement signed a few months later with the Government of the British Virgin Islands gave ICLARM a formal office location in the Caribbean, allowing the second project component to proceed Work consists of monitoring recruitment rates of commercially important coral reef fish using light traps and fish traps and tagging and recapturing indicator fish species in order to determine the optimal placement and extent of marine protected areas

As a result of an Asian Development Bank funded planning workshop for Asian coastal fisheries, a proposal has been developed for creating a prototype software for the effective analysis and interpretation of existing trawl data from various countries in Asia This software will enable researchers to better analyze trends in fisheries catches in the region and to provide data for improved fisheries management

Two publications by the program in 1996 drew together the work of ICLARM and its collaborators spanning more than a decade of research The first, a CD ROM entitled The San Miguel Bay Story presents the compiled research and management reports on the aquatic resources of San Miguel Bay in the Philippines The second is a major book synthesizing an immense amount of information on the fish resources of Western Indonesia It was published jointly by ICLARM and the German Agency for Technical Cooperation (GTZ)

Integrated Aquaculture Agriculture Systems Program (IAASP) This program aims to improve the productivity of smallholder farms through integration of fish farming and development of methods to assess the sustainability of integrated aquaculture agriculture (IAA) systems

Accomplishments in 1996

A field guide and a software users guide for RESTORE (consisting of farmer participatory field procedures and software) were finalized for distribution along with the software to 72 beta test collaborators RESTORE was used by the Center of Development Studies at Stockholm University in national and international training courses A start was made in looking for a way to incorporate gender perspectives to enhance RESTORE s analytical capabilities

A five year study of the ecology and sustainability of Philippine rice based farms (including rice fish culture) was completed applying ECOPATH, a steady state nutrient flow modeling software, for the first time in a terrestrial environment In collaboration with the University of Kassel, a dynamic simulation model of the rice fish farming systems in the Philippines was completed

A new initiative was the commencement of a research activity on the potential for IAA in the context of rainforest bufferzone management in collaboration with a bilateral development aid project in the uplands of Quirino province in Luzon, Philippines

Under the framework of ICLARM s collaboration with the Community Forestry Project Quirino (CFPQ) on sustainability indicators for integrated aquaculture systems, four training workshops on low external input IAA technology were held with 37 farmers participating

- ***Malawi Research Site*** An MOU with the Government of Malawi was renewed for an additional two years under a new cooperative relationship with the Malawi Fisheries Department One of the activities of the Malawi office in 1996 was the documentation of periodicity of phytoplankton and zooplankton population cycles in small ponds over a 10 month period Small scale integrated fish ponds are producing significant positive impacts in Zomba District on a trial group of small farms which are being intensively monitored to better document the farmer designed inputs and farming system Recognizing the importance of knowledge on suitable local species for domestication eight native species of fish were collected and observed under small scale fish farming conditions Testing different densities of fish per tank were tested with inputs generated exclusively from local household wastes Two 10 month studies of the interaction between stocking

size and partial harvesting methods were completed Preliminary trials in the use of tempo rary rainpools for fish production through stocking and nutrient input were conducted in several villages

Bangladesh Research Site Work continued on developing sustainable technology for small holder aquaculture through studies of the socioeconomics of rice fish farms and through provision of training particularly on hatchery and broodstock management to avoid in breeding, to national research and extension institutions and to NGOs Three eco region specific centers were established to test carp polyculture and rice fish farming technologies Programs on on farm low cost, low input systems with grass and indigenous exotic carps progressed satisfactorily In all 16 training programs were organized and 142 Government and NGO extension workers along with 220 farmers were trained on hatchery and nursery management of carp and catfishes Study tours for scientists and policy makers were orga nized in Malaysia, the Philippines and Thailand

Coastal Aquaculture and Stock Enhancement Program (CASEP) This program aims to improve the productivity of coral reef fisheries through the development of biotechnical systems for the culture of high value species by village farmers and cost effective methods for propagating and releasing juveniles to restore and enhance inshore fisheries Once they have been demonstrated to be economi cally viable and environmentally sustainable, these methods will be introduced to NARS in the Asia Pacific region through reports, manuals and workshops The program operates from ICLARM s Coastal Aquaculture Centre (CAC) in the Solomon Islands

Accomplishments in 1996

Research on giant clams centers around developing simple and profitable methods for farm ing that can be practiced by coastal villagers, and devising responsible and practical ways of re establishing wild stocks The CAC continued to accumulate broodstock, improve methods for producing seed clams increase the number of village farms, monitor large scale grow out experiments and coordinate sales of giant clams to export markets The CAC developed and tested the viability of village based farming of giant clams in the Solomon Islands by scaling up the production of cultured giant clams at village farms producing sufficient cul tured clams to develop and test new markets and assessing whether village giant clam farmers can grow giant clams at a profit

Systems for farming blacklip oysters in the open lagoon systems of the central western Pacific were refined by identifying the types of sites where spat were most abundant, removing spat from collectors after three months and rearing them in panel nets, and by modifying the design of the spat collectors

Two batches of sandfish commercially the most important sea cucumber, were produced in the CAC hatchery The juveniles rapid growth and simple food requirements indicate suitability for mass rearing in hatcheries Because the culture of sea cucumbers depends on good quality microalgae, an algal culture unit was constructed in May By the end of the year CAC had established 12 algal strains in stock cultures and routinely produced 20 liter carboys of five species

ICLARM together with several collaborating institutions further tested the idea that the number and body size of commercially valuable tropical invertebrates increase inside a marine protected area In 1996 the CAC surveyed the abundance of invertebrates in a year old reserve in the Arnavon Islands and found little indication of increasing numbers of commercially exploited species in the reserve relative to control areas

Policy Research and Impact Assessment Program (PRIAP) This program became operational in 1996, incorporating past and ongoing research activities on fisheries co management, evaluation and assessment of aquaculture technologies, bioeconomic analysis and valuation of coastal resources PRIAP examines a range of policy issues and measures by which governments might strive to increase the supply of fish for human consumption and the economic benefits from the fisheries sector

Accomplishments in 1996

The fisheries co management project a five year effort toward the goal of sustainable and equitable management of fisheries in developing countries made considerable progress in 1996 Work included initiation of collaborative pilot site activities in Honda Bay Philippines conclusion of a report on enforcement and compliance with fisheries regulations in Southeast Asia completion of a global literature review and comparative analysis of fisheries co management and analysis of co management arrangements in Zambian and Zimbabwean inshore fisheries Fisheries co management case studies got underway in the Philippines and Bangladesh The project also produced an impact evaluation of community based coastal resource management projects in the Philippines

A report was prepared on the concepts experiences and lessons learned described at a workshop on management systems of marine fisheries and other coastal resources focussing on Palawan Philippines

Policy research on user based management of inland openwater fisheries in Bangladesh became operational with 16 waterbodies during 1996 Socioeconomic surveys were completed in all participating communities The baseline surveys are being followed up by periodic surveys of fishing activity in the same households in addition to annual impact evaluation Routine monitoring of fishing effort catches and fish markets was started for 12 waterbodies The Project also helped train local government and non government staff in surveying and monitoring and conducted public awareness campaigns through newsletters and Fish Fair displays on community based fisheries management

A study of the contribution of fisheries to food security in Vietnam involved a socioeconomic baseline survey of 365 farm households in the central Mekong Delta region Data gathering for economic and production function analyses began in July The Bangus (Milkfish) Fry Resource Assessment Project generated a baseline survey of 190 fry gatherers from five regions in the Philippines set up monthly monitoring of fry gathering activities and volume of trade, and collection of time series information on milkfish fry To help the Mekong River Commission conduct policy analysis of freshwater capture fisheries in Cambodia ICLARM assisted in the creation of a database of household survey information and trained government staff in data analysis

Information and Training Program (ITP) The ITP comprises three units Library and Information Services, Publications and Translations In 1996 all units broadened their services At the same time an in depth analysis was undertaken of the role and operations of the whole Program, and a new and progressive future focus was designed for implementation in 1997

Accomplishments in 1996

- *Library and Information Services Unit (LISU)* Under the Selective Fisheries Information Service (SFIS), LISU responded to 345 queries from 66 countries Of these queries 245 were answered free of charge, 40 were answered for a fee, 22 on exchange, and 18 were referred elsewhere Sixty seven percent of inquiries came from developing countries

  The library provided information and reference services to 1 739 users ranging from university students to government workers consultants, administrators and policy makers LISU facilitated the acquisition of books and other reference materials for ICLARM s outreach offices contributed citations to the Aquatic Sciences and Fisheries Information System (ASFIS) and the Aquatic Sciences and Fisheries Abstracts (ASFA) databases and provided training for ICLARM staff and visitors in the use of various literature in dexes

  The library also strengthened its cooperative ties with libraries and institutions world wide In order to publicize the library and its services to a wide audience a Guide to ICLARM Information Resources and Services brochure and a flyer were produced A general information article about the library was submitted to six different newsletters

  As of December 1996 the library s collection contained 14 927 volumes of books and monographs 6 994 titles of reprints 397 items of nonbook materials, 3 307 slides 4 332 photos and 1 297 serial titles Five bibliographic databases serve as catalogs and indexes to the collections

- *Publications Unit* The Unit produced five publications in the Center s Technical Series, four issues of *Naga the ICLARM Quarterly* a publishing guide, a bulletin on San Miguel Bay an annual report an operational plan and nine brochures The Unit also undertook the production of the *Asian Fisheries Science* journal In addition to providing copyediting service for ICLARM staff the Unit also prepared posters, slides and other presentation materials for 10 international exhibits in 1996 It was responsible for sales and marketing of ICLARM publications, which generated about US$ 11 000 The Unit participated in two Philippine and five international bookfairs by sending relevant publications Several press releases were submitted to and featured in national, regional and international media

- *Translation Unit* In 1996 ICLARM s Translation Unit translated a conference proceed ings portions of articles for *Naga*, and an atlas on freshwater fish in Africa under the Technical Series The Unit expanded its specialized terminology database and began using the Internet to locate and work with freelance translators

International Partnerships and Networks Program (IPNP) For better management of living aquatic resources worldwide, this program was created to strengthen existing research partnerships and to forge new partnerships with national and international institutions and NGOs, through research and information networks as well as collaborative research programs with and among developing countries

Accomplishments in 1996

Through the International Network on Genetics in Aquaculture (INGA) national breeding programs have been developed for genetically improved Nile tilapia (GIFT) and other aquaculture species in Indonesia and Vietnam, training programs in quantitative genetics and selective breeding have been conducted, and national chapters of INGA have been formed The IPNP compiled a proceedings of the Third INGA Steering Committee Meeting held in Cairo

The Asian Fisheries Social Science Research Network (AFSSRN) which has been working to enhance domestic social science research capabilities since 1983, currently comprises more than 80 researchers at universities research institutions and government fisheries agencies throughout Southeast Asia In March the AFSSRN became subsumed as a section under the Asian Fisheries Society ICLARM continued to offer technical guidance and service as an executive committee member Both the AFSSRN newsletter and the INGA newsletter have been incorporated into *Naga the ICLARM Quarterly*

The Network of Tropical Aquaculture Scientists (NTAS) and Network of Tropical Fisheries Scientists (NTFS) continued to attract new members and articles for publication in the Aquabyte and Fishbyte sections of *Naga*

The ICLARM Partnership Policy for Research and Related Activities was approved by the Board of Trustees paving the way for ICLARM to continue building partnerships with NARS, NGOs, government offices, private sector bodies, research institutes and development assistance agencies In 1996 ICLARM organized a workshop to identify areas of possible collaboration with Philippine NARS and participated in a priority setting exercise of the Asia Pacific Association of Research Institutions (APAARI)

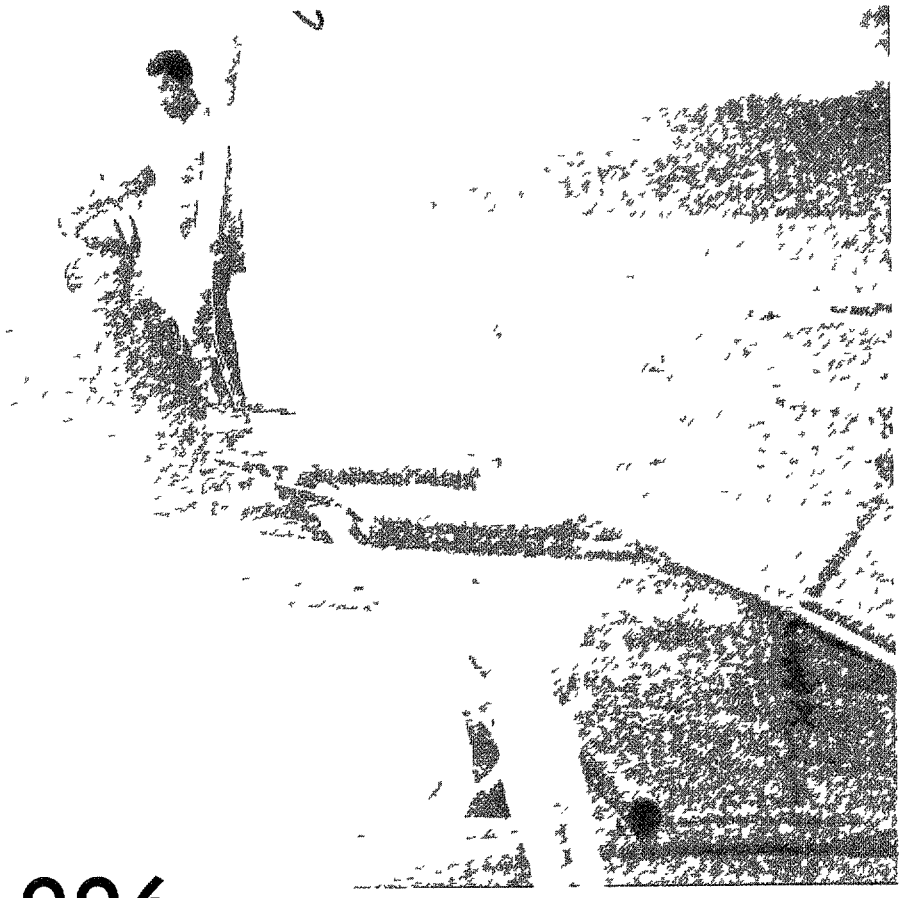
External Relations Office (ERO) This office was created in 1996 to help management and staff with fund raising, CGIAR and donor relations Its plans include improved and more timely compliance with the CGIAR program planning documents, development of a donor strategy to guide the Center in maintaining and where possible increasing its quantum of unrestricted funds assistance to staff with project development and donor negotiations to increase the flow of project related funding to the Center and the supply of better information on donors and agencies supporting fisheries and agricultural research in Africa and West Asia The ERO is expected to improve ICLARM s participation in the CGIAR system and its relations with donors

Corporate Services Division (CSD) The Corporate Services Division provides most of the operational support to the Center s research activities It is organized into the following functional units Finance and Management Information, Human Resources, Program and Administrative Ser vices and Computer Services Unit

Corporate Services intends to focus its efforts on continued development and implementation of management systems that would have a significant impact on the Center s efficiency effectiveness and accountability Priorities include the finalization of a new accounting system (Platinum) the continued development of human resources policies and procedures, improved center wide systems and tele communications support and administrative operations Support to the outreach sites will be in creased with particular focus on assisting the new regional facility in Egypt

Office of the Deputy Director General (Programs) This office was established in mid 1996 to oversee the planning implementation, impact assessment and reporting of ICLARM s scientific pro grams In 1996 the office helped coordinate the development of ICLARM s Medium term Plan for the period 1998 2000 and will continue to assist in the formulation of scientific reviews new project development (especially with respect to the new initiative in Egypt in conjunction with the new Deputy Director General Africa and West Asia and colleagues) and in the long term develop ment of ICLARM s strategic plan

Office of the Director General This office carries out the central executive management functions of ICLARM and is responsible for implementing Board policies and advising the Board on manage ment and policy matters A new structure was introduced in 1996 and new positions were filled, including a Deputy Director General (Programs) The Associate Director General (Corporate Ser vices) and Director of International Relations also form part of the executive team A Deputy Director General (Africa and West Asia) was hired to start in 1997



WORK IN 1996

Research Projects

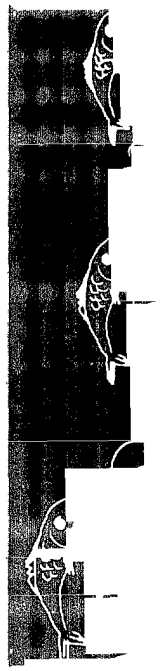
BIODIVERSITY AND GENETIC RESOURCES PROGRAM

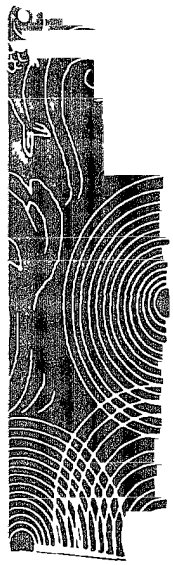
Title	Duration	Donor*	Collaborating Institutions*
A1 DEVELOPMENT OF A BIOLOGICAL DATABASE ON FISH (FISHBASE)	A1 October 1988 November 1996	EU ICLARM core funds	FAO AFS EPOMEX International Game Fish Association MRAG WCMC Musee Royal de l Afrique Centrale Museum National d Histoire
A2 STRENGTHENING OF FISHERIES AND BIODIVERSITY MANAGEMENT IN AFRICA CARIBBEAN AND PACIFIC (ACP) COUNTRIES	A2 December 1996 December 2000	EU ICLARM core funds	Naturelle ZIM Universidad Autonoma de Campeche Mexico UBC other institutions and individual researchers
B RESEARCH ON THE TILAPIA GENETIC RESOURCES OF GHANA FOR THEIR FUTURE CONSERVATION AND MANAGEMENT IN FISHERIES AND AQUACULTURE	1991 June 1996	BMZ/GTZ	IAB Ghana ZIM
C CONSERVATION OF FISH GENETIC RESOURCES AND AQUATIC BIO DIVERSITY THROUGH SUSTAINABLE USE	To be determined	CGIAR/SGRI start up funds provided for 1996	To be determined linkages sought with international institutions such as IPGRI and IUCN and with various fish genetics and biodiversity research programs worldwide

GERMPLASM ENHANCEMENT AND BREEDING PROGRAM

A GENETIC IMPROVEMENT OF FARMED TILAPIAS (GIFT) PHASE II	1993 1997	UNDP/ Sustainable Energy and Environment Division	NFFTRC Philippines BFAR FAC/CLSU AKVAFORSK through NORAGRIC/NORAD
B DISSEMINATION AND EVALUATION OF GENETICALLY IMPROVED TILAPIA SPECIES IN ASIA (DEGITA)	June 1994 December 1996	ADB	**Bangladesh** Fisheries Research Institute **China** Shanghai Fisheries University **Philippines** BFAR **Thailand** National Aquaculture Genetics Research Institute **Vietnam** Research Institute for Aquaculture Nos 1 & 2

See list of acronyms on p 77





C COMPARISON OF THE NUTRITIONAL ENERGETICS OF TWO NILE TILAPIA STRAINS AN EXPERIMENTAL GIFT STRAIN AND THE WIDELY FARMED THAI CHITLADA STRAIN	April 1995 April 1997	DfID	AIT

AQUATIC ENVIRONMENTS PROGRAM

A REEFBASE A GLOBAL DATABASE OF CORAL REEF SYSTEMS AND THEIR RESOURCES	October 1993 September 2001	EU Netherlands Minister for Development Cooperation ICLARM core funds	WCMC Numerous agencies providing checking and using data
B RESOURCE AND ECOLOGICAL ASSESSMENT TRAINING FOR THE FISHERIES SECTOR PROGRAM OF THE PHILIPPINES	April 1995 August 1996	Philippine Department of Agriculture FSP	FSP BFAR
C VALUATION OF CORAL REEF SYSTEMS	January 1996 March 1997	ICLARM core funds	UP MSI Silliman University Palawan National Agricultural College
D NATIONAL COURSE ON INTEGRATED COASTAL ZONE MANAGEMENT	January 1995 December 1996	Rockefeller Brothers Fund	**Philippines** Haribon Foundation PCAMRD DENR BFAR IIRR **USA** University of Rhode Island Coastal Coastal Resources Center
E COMPARATIVE ANALYSIS OF COASTAL TRANSECTS	January 1994 November 1995	European Commission	University of Warwick UK PCAMRD DOF Brunei National University of Singapore DOF Malaysia DOF Thailand Human Geography Research Center Hanoi Environmental Research Center Bogor Agricultural University Indonesia

FISHERIES RESOURCES ASSESSMENT AND MANAGEMENT PROGRAM

A TROPICAL FISH STOCK ASSESSMENT	Ongoing from July 1979	ICLARM core funds	FAO with informal linkages with other research institutions
B MODELING OF MULTISPECIES FISHERIES	February 1990 January 1998	DANIDA ICLARM core funds	Fisheries Centre UBC DIFRES Russian Federal Research Institute of Fisheries and Oceanography Greenland Fisheries Research Institute Lake Tanganyika Research Project Finland

Title	Duration	Donor*	Collaborating Institutions*
C SUSTAINABLE EXPLOITATION OF COASTAL FISH STOCKS IN ASIA	January December 1996	ADB ICLARM core funds	Various developing country members of ADB
D TESTING THE USE OF MARINE PROTECTED AREAS TO MANAGE FISHERIES FOR TROPICAL CORAL REEF INVERTEBRATES ARNAVON ISLANDS	October 1994 February 1999	ACIAR	GBRMPA Solomon Islands Ministry of Agriculture and Fisheries Solomon Islands Ministry of Forests Environment and Conservation The Nature Conservancy
E THE ROLE OF MARINE PROTECTED AREAS IN FISHERIES MANAGEMENT AND BIODIVERSITY CONSERVATION IN CORAL REEF ECOSYSTEMS	January 1996 December 1999	IADB (Jamaica component) DfID (BVI component)	Centre for Marine Sciences University of the West Indies Jamaica Department of Conservation and Fisheries BVI

INTEGRATED AQUACULTURE-AGRICULTURE SYSTEMS PROGRAM

A INTEGRATED RESOURCES MANAGEMENT (IRM) GROUP AND DEVELOPMENT OF RESTORE SOFTWARE	Ongoing from 1991	ICLARM core funds	IIRR ICLARM outreach teams and national collaborators in Bangladesh Malawi Vietnam and other countries
B DEVELOPMENT OF SUSTAINABILITY INDICATORS FOR INTEGRATED AGRICULTURE AQUACULTURE FARMING SYSTEMS	October 1994 September 1996	BMZ/GTZ	University of Kassel Germany national institutions in the Philippines and Vietnam ICLARM outreach teams and national collaborators
C A MODELING APPROACH TO THE DETERMINATION OF ECOLOGICAL SUSTAINABILITY IN INTEGRATED AGRICULTURE AQUACULTURE FARMING SYSTEMS	1994 May 1996	DANIDA	RVAU national institutions in the Philippines
D RESEARCH FOR DEVELOPMENT OF SUSTAINABLE AQUACULTURE PRACTICES	1993 1998	USAID	Fisheries Research Institute Bangladesh arious NGOs

See list of acronyms on p 77

COASTAL AQUACULTURE AND STOCK ENHANCEMENT PROGRAM

A BIOTECHNICAL SYSTEMS FOR CULTIVATION OF GIANT CLAMS	Operational since 1987 This phase mid 1995 to December 1999	ACIAR EU	Solomon Islands Ministry of Agriculture and Fisheries James Cook University FAO ESCAP
B DEVELOPMENT OF SMALL SCALE VILLAGE FARMS FOR BLACKLIP PEARL OYSTERS IN SOLOMON ISLANDS USING WILD SPAT	November 1995 November 1997	ACIAR	Solomon Islands Ministry of Agriculture and Fisheries James Cook University Cook Islands Ministry of Marine Resources
C DEVELOPMENT OF METHODS FOR THE MASS REARING OF TROPICAL SEA CUCUMBERS FOR THE PURPOSE OF ENHANCING WILD STOCKS	Operational since 1993 This phase January 1995 to December 1999	ACIAR	Solomon Islands Ministry of Agriculture and Fisheries Advisory Panel from Advanced Scientific Institutions in Australia coordinated by ACIAR

POLICY RESEARCH AND IMPACT ASSESSMENT PROGRAM

A FISHERIES CO MANAGEMENT PPOJECT	April 1994 April 1999	DANIDA	Organizations from Denmark Vietnam Thailand Malaysia Indonesia Philippines Mozambique Zimbabwe Malawi West Africa Zambia South Africa and the Caribbean[1]
B SOCIOECONOMIC COMPONENT OF THE PROJECT SUPPORT STRENGTHENING THE INSTITUTIONAL CAPACITY FOR SUSTAINABLE AQUACULTURE DEVELOPMENT IN THE SOUTHERN PART OF VIETNAM	September 1996 December 1997	FCRI/HAKI	CTU Vietnam SEAFDEC AFSSRN
C A REVIEW AND EVALUATION OF COMMUNITY BASED COASTAL RESOURCE MANAGEMENT PROJECTS IN THE PHILIPPINES 1984 1994	August 1995 April 1996	USAID	

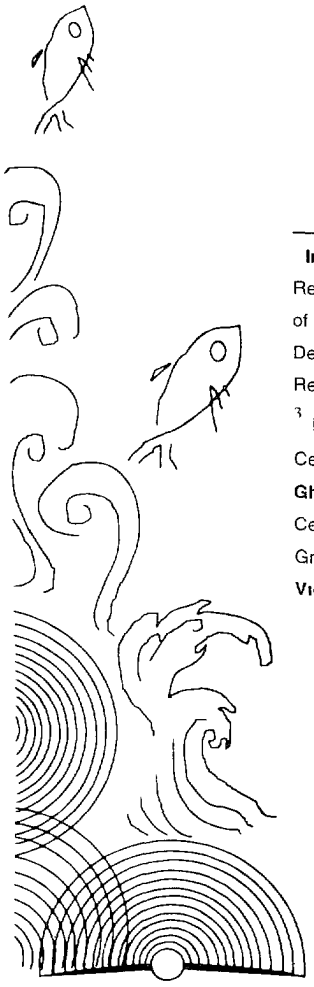
[1] **Denmark** NSC **Vietnam** Ministry of Fisheries National Center **Thailand** DOF Kasetsart University Prince of Songkla University **Malaysia** UPM **Indonesia** RIMF Directorate General of Fisheries Indonesian Fisheries Socioeconomic Research Network **Philippines** SEAFDEC AQD University of the Philippines College of Public Administration DENR SEARCA Tambuyog Development Foundation UPV **Mozambique** Institute for Development of Small Scale Fisheries **Zimbabwe** Center for Applied Social Sciences University of Zimbabwe Lake Kariba Fisheries Research Institute **Malawi** Fisheries Department Chancellor College **West Africa** Programme for Integrated Development of Artisanal Fisheries **Zambia** DOF **South Africa** University of Cape Town Sea Fisheries Research Institute **Caribbean** CARICOM Fisheries Resource Assessment and Management Program

Title	Duration	Donor*	Collaborating Institutions*
D POLICY RESEARCH ON USER BASED MANAGEMENT THE CASE OF INLAND OPENWATER FISHERIES OF BANGLADESH	April 1996 June 1998	The Ford Foundation	**Bangladesh** DOF BRAC Caritas Proshika Banchte Shekha Banchao Ziban CRED
E SOCIOECONOMIC IMPACT STUDIES OF FISH CULTURE EXTENSION ON THE FARMING SYSTEMS OF BANGLADESH PHASE II	July 1996 June 1998	MRC	Bangladesh DOF MRC
F BANGUS FRY RESOURCE ASSESSMENT PROJECT	March 1996 June 1997	BFAR PCAMRD	BFAR SEAFDEC PCAMRD
G SOCIOECONOMIC AND POLICY ANALYSIS OF FRESHWATER CAPTURE FISHERIES OF CAMBODIA	October 1996 March 1997	MRC	Cambodia DOF MRC
H INTERNATIONAL CONSULTATION ON FISHERY POLICY RESEARCH IN DEVELOPING COUNTRIES	1996 1997	DANIDA	IFPRI IFM NSC RVAU
I LEGAL AND INSTITUTIONAL ANALYSIS OF COASTAL RESOURCES CO MANAGEMENT	October 1996 September 1998	SIDA	
J EVALUATION OF PERFORMANCE OF FISHERIES CO MANAGEMENT INSTITUTIONS	November 1996 October 1998	Netherlands Minister for Development Cooperation	

See list of acronyms on p 77

INTERNATIONAL PARTNERSHIPS AND NETWORKS PROGRAM

A NETWORK OF TROPICAL FISHERIES SCIENTISTS (NTFS)	Ongoing from April 1982	FAO ICLARM core funds	FAO/DANIDA Training Course in Tropical Fish Stock Assessment
B NETWORK OF TROPICAL AQUACULTURE SCIENTISTS (NTAS)	Ongoing from July 1987	ICLARM core funds	
C ASIAN FISHERIES SOCIAL SCIENCE RESEARCH NETWORK (PHASE IV)	April 1994 to March 1996	IDRC	Organizations from Indonesia Malaysia Philippines Thailand and Vietnam[2]
D INTERNATIONAL NETWORK ON GENETICS IN AQUACULTURE (INGA)	Ongoing from August 1993	UNDP Norwegian Ministry of Foreign Affairs ICLARM core funds	Organizations from Bangladesh China Cote d Ivoire Egypt Fiji Ghana India Indonesia Malawi Malaysia Philippines Thailand and Vietnam[3]



Indonesia Faculty of Economics Universitas Diponegoro CRIFI RIMF **Malaysia** Faculty of Economics and Administration UM Natural Resource Economics Department UPM **Philippines** BFAR FAC/CLSU SEAFDEC AQD Department of Agricultural Economics College of Economics and Management UPLB Faculty of Arts and Sciences UPV **Thailand** Fisheries Economics Research Subdivision DOF Department of Agricultural and Resource Economics Faculty of Economics and Business Administration Kasetsart University Coastal Resources Institute Prince of Songkla University **Vietnam** Ministry of Fisheries CTU

[3] **Bangladesh** Fisheries Research Institute Mymensingh **China** Department of Aquaculture Shanghai **Cote d Ivoire** Fish Research Center Bouake **Egypt** Central Laboratory for Aquaculture Research Abbassa **Fiji** Ministry of Agriculture Fisheries and Forestry Suva **Ghana** Fishery Division Achimota **India** Central Institute of Freshwater Aquaculture Central Institute of Fisheries Education **Indonesia** Central Research Institute for Freshwater Fisheries **Malawi** University of Malawi Zomba Fisheries Department **Malaysia** Institute of Post Graduate Studies and Research UM **Philippines** BFAR FAC/CLSU **Thailand** National Aquaculture Genetics Research Institute **Vietnam** Research Institute for Aquaculture Ha Bac

Work in 1996

Published Works

This section lists the variety of journal articles book chapters, conference proceedings and other works by ICLARM staff that were published in 1996 Also included are publications by visiting scientists collaborators or others who received substantial support assistance or supervision from ICLARM

Biodiversity and Genetic Resources Program

Bimbao, M P and R S V Pullin The network of tropical aquaculture scientists (NTAS) 1987 1996 Naga ICLARM Q 19(3) 27 31

Falk, T M , E K Abban, S Oberst W Villwock R S V Pullin and L Renwrantz A biochemical laboratory manual for species characterization of some tilapiine fishes ICLARM Educ Ser 17 93 p

FishBase 1996 FishBase 96 CD ROM ICLARM Manila

Froese, R A computerized procedure for identifying misspellings and synonyms in checklists of fishes p 219 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Froese R A data rich approach to assess biodiversity, p 127 136 *In* J A McNeely and S Somchevita (eds) Biodiversity in Asia challenges and opportunities for the scientific community Office of Environmental Policy and Planning, Ministry of Science, Technology and Environment Bangkok, Thailand

Froese R Fish genetic resources databases present and future p 16 *In* R S V Pullin and C M V Casal (eds) Consultation on fish genetic resources ICLARM Conf Proc 51

Froese, R Nomencla¹ ıral changes in Trawled Fishes of Southern Indonesia and Northwestern Austra lia, p 217 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Froese, R and D Pauly Announcing the release of FishBase 96 Naga, ICLARM Q 19(2) 23

Froese R and D Pauly Editors FishBase 96 concepts, design and data sources ICLARM Manila, 179 p

Froese R S Luna and E Capuli Checklist of marine fishes of Indonesia compiled from published literature, p 217 275 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Palomares M L and D Pauly Models for estimating the food consumption of tilapias p 211 222 *In* R S V Pullin J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Pullin, R S V Biodiversity and aquaculture p 40º 423 *In* F di Castri and T Younes (eds) Biodiversity, science and development towards a new partnership CAB International Wallingford, UK

Pullin R S V World tilapia culture and its future prospects p 1 16 *In* R S V Pullin, J Lazard M Legendre J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Pullin R S V, J Lazard, M Legendre J B Amon Kothias and D Pauly Editors The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41, 575 p

Pullin R S V and C V Casal, Editors Consultation on fish genetic resources ICLARM Conf Proc 51, 61 p

Pullin, R S V ICLARM s fish genetic resources activities, p 15 *In* R S V Pullin and C M V Casal (eds) Consultation on fish genetic resources ICLARM Conf Proc 51

Pullin, R S V Fish genetic resources, the International Network on Genetics in Aquaculture (INGA) and breeding programs p 18 *In* R S V Pullin and C M V Casal (eds) Consultation on fish genetic resources ICLARM Conf Proc 51

Pullin R S V and D M Bartley Biosafety and fish genetic resources, p 33 *In* R S V Pullin and C M V Casal (eds) Consultation on fish genetic resources ICLARM Conf Proc 51

Villwock W U Sienknecht, R Froese and L Agustin The development of a tilapia strain registry as part of FishBase, p 553 *In* R S V Pullin J Lazard M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Germplasm Enhancement and Breeding Program

Acosta B O E E Dionisio and A E Eknath Growth and food conversion of five strains of Nile tilapia (*Oreochromis niloticus*) fry, p 537 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41 (Poster)

Eknath, A E , J B Capili , J C Danting, M S Palada de Vera, E E Dionisio, H L Bolivar, R A Reyes and M M Tayamen A practical quantitative method to estimate relative reproduc tive activity in *Oreochromis niloticus*, p 290 298 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Velasco, R R , M J R Pante, J M Macaranas, C C Janagap and A E Eknath Truss morphomet ric characterization of eight strains of Nile tilapia (*Oreochromis niloticus*), p 415 425 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Aquatic Environments Program

ICLARM 1996 Artificial reefs in the Philippines are they the best solution? (Brochure)

Kesner, K P N ReefBase 1 0 A global coral reef database on CD Naga, ICLARM Q 19(2) 22

Maragos, J E M P Crosby and J W McManus Coral reefs and biodiversity a critical and threatened relationship Oceanography 9(1) 83 99

McManus J W and M C A Ablan, Editors 1996 ReefBase a global database on coral reefs and their resources ICLARM Manila 144 p

McManus J W Social and economic aspects of reef fisheries and their management p 249 281 *In* N V C Polunin and C M Roberts (eds) Reef fisheries Chapman and Hall London

McManus J W Marine bottomfish communities from the Indian Ocean coast of Bali to mid Sumatra p 91 101 *In* D Pauly and P Martosubroto (eds) Baseline studies on biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

ReefBase ReefBase a global database on coral reefs and their resources Ver 1 0 CD ROM ICLARM Manila

Saila S J McKenna S Formacion G Silvestre and J McManus Empirical methods and models for multispecies stock assessment, p 403 472 *In* V Galucci S Saila D Gustafson and B Rothschild (eds) Stock assessment quantitative methods and applications for small scale fisheries CRC Press Boca Raton USA

Silvestre, G T Integrated management of coastal fisheries lessons from initiatives in San Miguel Bay Philippines ICLARM, Manila, 13 p

Ziegler P Incorporating ECOPATH 3 0 into ReefBase Naga, ICLARM Q 19(2) 25

Fisheries Resources Assessment and Management Program

Aquisap, A C M A Carigma, PB Carino V M J Castrillo, F C Gayanilo, Jr , M E S Guzman C C Janagap J L Maclean D Pauly, E T Tech and R M Temprosa Asian fisheries science a profile p 457 488 *In* S S De Silva (ed) Perspectives in Asian fisheries Asian Fisheries Society, Manila

Arreguin Sanchez F J L Munro M C Balgos and D Pauly Editors Biology of tropical groupers and snappers ICLARM Conf Proc 48, 418 p

Christensen V Managing fisheries involving predator and prey species Rev Fish Biol Fisheries 6 126

Christensen, V Points of view virtual population reality Rev Fish Biol Fisheries 6 243 247

Christensen V and D Pauly Ecological modeling for all Naga, ICLARM Q 19(2) 27 28

Gayanilo Jr F C P Sparre and D Pauly The FAO ICLARM Stock Assessment Tools user s guide FAO Computerized Information Series (Fisheries), No 7 Rome

Martosubroto P T Sujastani and D Pauly The mid 1970s demersal resources in the Indonesian side of the Malacca Strait p 40 46 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Munro J L Fish genetic resources and the Coastal Aquaculture Centre p 17 *In* R S V Pullin and C V Casal (eds) Consultation on fish genetic resources ICLARM Conf Proc 51

Munro J L The scope of tropical reef fisheries and their management p 1 14 *In* N Polunin and C Roberts (eds) Reef fisheries Chapman and Hall London

Pauly D Biodiversity and the retrospective analysis of demersal trawl surveys a programmatic ap proach p 1 6 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Pauly D A case study of *Nemipterus thosaporni* a k a *N marginatus*, p 199 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indo nesia ICLARM Stud Rev 23

Pauly D Fleet operational economic and cultural determinants of bycatch uses in southeast Asia, p 285 288 *In* Solving bycatch considerations for today and tomorrow Alaska Sea Grant College Program Report No 96 03 University of Alaska Fairbanks

Pauly D Fisheries biology a new tool kit for dealing with new problems p 449 455 *In* S S De Silva (ed) Perspectives in Asian fisheries Asian Fisheries Society, Manila

Pauly D ITQs the assumptions behind the meme Rev Fish Biol Fisheries 6(1) 109 112

Pauly D One hundred million tonnes of fish and fisheries research Fisheries Research 25(1) 25 38

Pauly D On editing a newsletter (such as *Fishbyte*) Naga, ICLARM Q 19(3) 34 36

Pauly D Reasons for studying the Leiognathidae, p 177 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Pauly D Some reflections on Professor Ray Beverton FRS 1922 1995 ICES/CIEM Information (27) March 1996 16

Pauly D F Arreguin Sanchez J L Munro and M Balgos Biology, fisheries and culture of snappers and groupers workshop conclusions and updates to 1996 p 1 10 *In* F Arreguin Sanchez J L Munro M C Balgos and D Pauly (eds) Biology of tropical groupers and snappers ICLARM Conf Proc 48

Pauly D and C Binohlan FishBase and AUXIMS tools for comparing life history patterns, growth and natural mortality of fish applications to snapper and groupers, p 218 243 *In* F Arreguin Sanchez, J L Munro M C Balgos and D Pauly (eds) Biology of tropical groupers and snappers ICLARM Conf Proc 48

Pauly D A Cabanban and F S B Torres, Jr Fisheries biology of 40 trawl caught teleosts of Western Indonesia p 135 216 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Pauly, D and V Christensen Chapter 22 ECOPATH models of coral reef ecosystems, p 137 144 *In* J W McManus and M C Ablan (eds) ReefBase a global database on coral reefs and their resources ICLARM, Manila

Pauly D and V Christensen Mass balance models of northeastern Pacific ecosystems Fisheries Centre Research Reports, vol 4(1) University of British Columbia

Pauly, D and V Christensen Rehabilitating fished ecosystems insights from the past Naga ICLARM Q 19(3) 13 14

Pauly D and P Martosubroto, Editors Baseline studies of biodiversity the fish resources of West ern Indonesia ICLARM Stud Rev 23, 312 p

Pauly, D , P Martosubroto and J Saeger The *Mutiara 4* surveys in the Java and southern South China Seas November 1974 to July 1976 p 47 54 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Pauly D , J Moreau and F C Gayanilo Jr A new method for comparing the growth performance of fishes, applied to wild and farmed tilapias p 433 441 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Sympo sium on Tilapia and Aquaculture ICLARM Conf Proc 41

Polunin N V C , C M Roberts and D Pauly Developments in tropical reef fisheries science and management p 361 377 *In* N V C Polunin and C M Roberts (eds) Reef fisheries Chapman and Hall London

Torres Jr F , A Cabanban, S Bienvenida, J McManus, M Prein and D Pauly Using the NAN SIS and FiSAT software to create a trawl survey database for Western Indonesia p 276 283 *In* D Pauly and P Martosubroto (eds) Baseline studies of biodiversity the fish resources of Western Indonesia ICLARM Stud Rev 23

Integrated Aquaculture Agriculture Systems Program

Ahmed M , M P Bimbao and M V Gupta Economics of tilapia aquaculture in small waterbodies in Bangladesh p 471 475 *In* R S V Pullin J Lazard M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquacul ture ICLARM Conf Proc 41

Bimbao M P and M Ahmed Regional trends in tilapia production and prices in the Philippines p 476 487 *In* R S V Pullin J Lazard M Legendre J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Brummett R E The context of smallholding integrated aquaculture in Malaŵi a case study for subSaharan Africa Naga ICLARM Q 18(4) 8 10

Brummett R E and B A Haight Research development linkages, p 145 169 *In* M Martinez Espinosa (comp) Report of the expert consultation on small scale rural aquaculture FAO Fish Rep No 548, Rome

Brummett, R E and K Katambalika Protocols for the development of indigenous species polyculture of indigenous species under Malawian smallholder conditions Aquaculture Research 27 225 233

Brummett, R E and N Mattson Zooplankton population periodicity in a tropical pond Naga, ICLARM Q 19(1) 27 28

Brummett, R E Species selection for smallholder aquaculture in subSaharan Africa Naga, ICLARM Q 19(4) 19 22

Brummett, R E , R Noble and F Chikafumbwa Farmer scientist research partnerships for integrated agriculture aquaculture *In* H van der Mheen Report of the Technical Consultation on Extension Methods for Smallholder Fish Farming in Southern Africa ALCOM Report 21 FAO, Rome

Chikafumbwa, F J K Fish ponds and the environment CURE (Coordination Unit for the Rehabilitation of the Environment) Newsletter 2(3) 8

Chikafumbwa, F J K The use of napier (*Pennisetum purpureum*) and maize (*Zea mays*) bran as low cost tilapia aquaculture inputs Aquaculture 146 101 107

Chikafumbwa, F J K Use of terrestrial plants in aquaculture in Malawi, p 175 182 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Chimatiro, S K and B A Costa Pierce Waste vegetable leaves as feeds for juvenile *Oreochromis shiranus* and *Tilapia rendalli,* grown together or separately, p 183 192 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Costa Pierce, B A Effects of substrate and water quality on seasonal fry production by *Tilapia rendalli* in tanks, p 280 289 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Crouch, B and M Prein External review SCALE Project, Southeast Asian Outreach, Phnom Penh

Dalsgaard, J P T An ecological modeling approach towards the determination of sustainability in farming systems Royal Veterinary and Agricultural University, Copenhagen Ph D dissertation

Jamu, D M and O V Msiska Liming of fishponds in Malawi a comparative study of limed and unlimed ponds, p 54 61 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Kaunda E K Stock manipulation in farmed tilapias in Malawi, p 62 69 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

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Lightfoot C M Prein and J K Ofori Potential impact of integrated agriculture aquaculture systems on sustainable farming p 51 56 *In* M Prein J K Ofori and C Lightfoot (eds) Research for the future development of aquaculture in Ghana ICLARM Conf Proc 42

Mair G C and A A van Dam The effect of sex ratio at stocking on growth and recruitment in Nile tilapia *(Oreochromis niloticus* L) ponds p 100 187 *In* R S V Pullin J Lazard, M Legendre and J B Amon Kothias (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Maluwa A O and M W Dickson Comparison of the growth of *Oreochromis karongae* and *O shiranus* in fishponds in Malawi, p 108 111 *In* R S V Pullin, J Lazard, M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

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Ofori J K A Asamoah and M Prein Experiments for integrated agriculture aquaculture system design, p 37 41 *In* M Prein J K Ofori and C Lightfoot (eds) Research for the future development of aquaculture in Ghana ICLARM Conf Proc 42

Prein, M Partnership between National Aquatic Research Systems and ICLARM in Africa p 65 68 *In* J H Annala (ed) Fisheries and aquaculture research planning with emphasis on African needs ICLARM Conf Proc 50

Prein, M Wastewater fed aquaculture in Germany a summary, p 155 160 *In* J Staudenmann, A Schonborn and C Etnier (eds) Recycling the resource ecological engineering for wastewater treatment Environmental Research Forum Vols 5 6 Transtec Publications Zurich

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Prein, M , C Lightfoot and R S V Pullin Farmer participatory research approaches towards agriculture aquaculture integration for sustainable management of natural resources p 173 184 *In* H J A Preuss (ed) Agricultural research and sustainable management of natural resources Schriften des Zentrums fur regionale Entwicklungsforschung der Justus Liebig Universitat Giessen Volume 66 Lit Verlag Munster Germany

Prein M C Lightfoot and J K Ofori Partizipative Methoden in der Einfuhrung von semi intensiven Aquakultursystemen in die traditionelle Ressourcenbewirtschaftung neue Ansatze p 54 77 *In* H Franzen and H Rosenthal (eds) Integrierte Aquakultur Perspektiven fur die entwicklungspolitische Zusammenarbeit ATSAF/GTZ/BMZ Bonn

Prein M J K Ofori and C Lightfoot Editors Research for the future development of aquaculture in Ghana ICLARM Conf Proc 42 94 p

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Coastal Aquaculture and Stock Assessment Program

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Policy Research and Impact Assessment Program

Ahmed M and T S Tana Management of freshwater capture fisheries of Cambodia issues and approaches Naga, ICLARM Q 19 (1) 16 19

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Pido, M D , R S Pomeroy, M B Carlos and L R Garces A handbook for rapid appraisal of fisheries management systems (version 1) ICLARM Educ Ser 16, 85 p

Pomeroy, R S , Editor Fisheries co management news Issues 3 & 4, February/July 1996 ICLARM Manila

Pomeroy, R S and A Cruz Trinidad Socioeconomic aspects of artisanal fisheries in Asia, p 239 258 *In* S S De Silva (ed) Perspectives in Asian fisheries Asian Fisheries Society, Ma nila

Pomeroy, R S and A L Garces Socioeconomic component of the project Support to Strengthening the Institutional Capacity for Sustainable Aquaculture Development in the Southern Part of Vietnam WES Newsletter No 1 2, CanTho University

Information and Training Program

Temprosa, R M Guide to ICLARM information resources and services ICLARM, Manila, 12 p

Temprosa, R M Ian R Smith Memorial Library and Documentation Center ALAP Notes April/ June 4

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International Partnerships and Networks Program

Bentsen H B T Gjedrem T M Thien and N Cong Dan Breeding plan for Nile tilapia (*Oreochromis niloticus*) in Vietnam Combined multi trait selection INGA Report No 1 Manila 10 p

Bentsen H B T Gjedrem, T M Thien and N Cong Dan Breeding plan for mrigal (*Cirrhinus mrigala*) in Vietnam Combined multi trait selection INGA Report No 2 Manila 12 p

Bentsen, H B , T Gjedrem and N Van Hao Breeding plan for silver barb (*Puntius gonionotus*) in Vietnam Individual (mass) selection to improve growth rate INGA Report No 3, Manila, 12 p

Dey M M , M N I Miah, B A A Mustafi and M Hossain Rice production constraints in Bangladesh implications for future research priorities, p 179 192 (ch 11) *In* R E Evenson, R W Herdt and M Hossain (eds), Rice research in Asia CAB International, Wallingford, UK

Dey, M M and H K Upadhyaya Yield loss due to drought, cold and submergence in Asia, p 291 304 (ch 18) *In* R E Evenson, R W Herdt and M Hossain (eds) Rice research in Asia CAB International, Wallingford, UK

Evenson R E , M M Dey and M Hossain Rice research priorities an application, p 347 392 (ch 22) *In* R E Evenson, R W Herdt and M Hossain (eds) Rice research in Asia CAB International, Wallingford UK

Gupta, M V , M Akhteruzzaman, A H M Kohinoor and M S Shah 1996 Nile tilapia (*Oreochromis niloticus*) culture in small waterbodies under different feeding and fertilization regimes p 500 504 *In* R S V Pullin, J Lazard M Legendre, J B Amon Kothias and D Pauly (eds) The Third International Symposium on Tilapia in Aquaculture ICLARM Conf Proc 41

Gupta M V , M A Rahman, M A Mazid and J D Sollows Integrated agriculture aquaculture a way for food security for small farmers and better resource management and environment, p 165 176 *In* International Symposium on Food Security and Innovations Successes and Lesson Learned University of Hohenheim, Germany

Gupta M V A method for assessment of adoption and impact of aquaculture technologies on rural households in Bangladesh, p 19 21 *In* International Symposium on Food Security and Innovations Successes and Lesson Learned University of Hohenheim Germany

Kohinoor A H M D A Jahan, M G Hussain and M V Gupta Involvement of women in aquaculture, p 47 52 *In* Success stories of women in agriculture, proceedings of a National Workshop on Case Studies Bangladesh Agricultural Research Council Dhaka

Office of the Director General

Williams, M J Issues in international aquatic research towards food security Agricultural Science, March April 1996 32 34

Williams M J Conference report Fourth Asian Fisheries Forum Reviews in Fish Biology and Fisheries 6 248 250

Williams M J The transition in the contribution of living aquatic resources to food security IFPRI Food Agriculture and the Environment Discussion Paper No 13 41 p (An edited version also p 1 58 *In* S S De Silva (ed) Perspectives in Asian Fisheries Asian Fisheries Society, Manila)

Papers Presented

ICLARM staff delivered a number of papers and addresses at conferences or workshops during 1996 Listed below are the titles of the papers, the responsible author(s) and the names locations and dates of the forums in which they were presented

Biodiversity and Genetic Resources Program

Biodiversity databases (Written by R Froese presented by J McManus) Workshop on Multime dia Database Systems and Biodiversity Taipei, Taiwan, 22 27 February

Conservation of genetic resources for aquaculture (R S V Pullin) Second World Fisheries Congress Brisbane, Australia 28 July 2 August

A data rich approach to assess biodiversity (R Froese) Danish Cooperation on Environment and Development (DANCED) International Meeting on Biodiversity Chiang Rai, Thailand, 14 19 January

Documenting fish genetic resources in FishBase (C V Casal) Fourth National Genetics Symposium IRRI Los Baños, Philippines, 19 21 September

Domestication of crustaceans (R S V Pullin and M J Williams) Symposium on the Biology of Crustacea University of Plymouth, UK 1 3 April

FishBase a database with key information on coral reef fishes (R Froese) Eighth International Coral Reef Symposium Panama City Panama, 23 27 June

International concerns on fish biodiversity and genetic resources management (R S V Pullin) Work shop on the Characterization of Ghanaian Tilapia Genetic Resources for Use in Fisheries and Aquaculture Accra, Ghana 4 7 June

Marine biodiversity data and information management an overview (M L D Palomares) Workshop on Marine and Coastal Biodiversity under the Convention on Biological Diversity Subic Bay Philippines, 24 25 October

A proposal fishes for the future towards the conservation and sustainable use of the world s freshwater fishes (R Froese) IUCN Species Survival Commission Meeting Montreal, Canada 11 14 October

Germplasm Enhancement and Breeding Program

Current trends in the Asian tilapia industry and the significance of genetically improved tilapia breeds (M M Dey and A E Eknath) Third INFOFISH AQUATECH International Confer ence on Aquaculture Kuala Lumpur Malaysia 25 27 September

Progress of Genetic Improvement of Farmed Tilapia (GIFT) Project (A E Eknath and B O Acosta) Third Steering Committee Meeting of the International Network on Genetics in Aquacul ture (INGA) Cairo Egypt 8 11 July

Keynote address (A E Eknath) Final Workshop of the India Norway Project on Selective Breeding of Rohu Bhubaneswar India 12 24 March

Aquatic Environments Program

Artificial reefs in the Philippines a policy analysis (M Balgos) Eighth International Coral Reef Symposium, Panama City, Panama, 26 30 June

Assessing the coral reefs of the world a multifaceted strategy (Keynote address by J W McManus) NOAA / NOS Coral Reef Remote Sensing Workshop Florida USA, 17 18 September

Assessing the health of coral reefs (J W McManus) Ecological Summit 96 Copenhagen, Denmark, 9 23 August

The biological significance of the Spratly Islands (J W McManus) John D and Catherine T MacArthur Foundation World Environment and Resources Program Grantees Meeting Los Banos Philippines, 18 19 April

Clonal variation within and between patches of the branching coral Anacropora puertogalerae evidence for both sexual and asexual reproduction (M C A Ablan) Eighth International Coral Reef Symposium Balboa, Panama 26 30 June

Coastal fisheries and their management in developing Asian countries an overview of key challenges and opportunities (G T Silvestre and D Pauly) Workshop on Sustainable Exploitation of Coastal Fish Stocks in Asia Manila, Philippines 2 5 July

Coastal management training program in the Philippines (M C Balgos) UNEP/NETTLAP (Network for Environmental Training at Tertiary Level in Asia and the Pacific) Conference on Professional Development of Environmental Managers Pattaya, Thailand 10 13 December

Coral reef health and ReefBase (J W McManus) Seminar, Lamont Doherty Institute Columbia University New York, USA, 31 July

Coral reef information system on CD ROM (M Ablan) Floating Center for Aquatic Science Education Manila Philippines 8 12 July

Coral reef status around the world where are we and where do we go from here? (C M Eakin, J W McManus, M D Spalding and S C Jameson) Eighth International Coral Reef Symposium Balboa, Panama, 26 30 June

Determining the effects of global changes on coral reefs a strategy for international research data exchange and meta analysis (J W McManus) Workshop on Response of Coral Reefs to Global Changes Tsukuba, Japan 4 6 March

Ecological community structure analysis applications in fisheries management (J W McManus) Workshop on Sustainable Exploitation of Coastal Fish Stocks in Asia Manila, Philippines 2 5 July

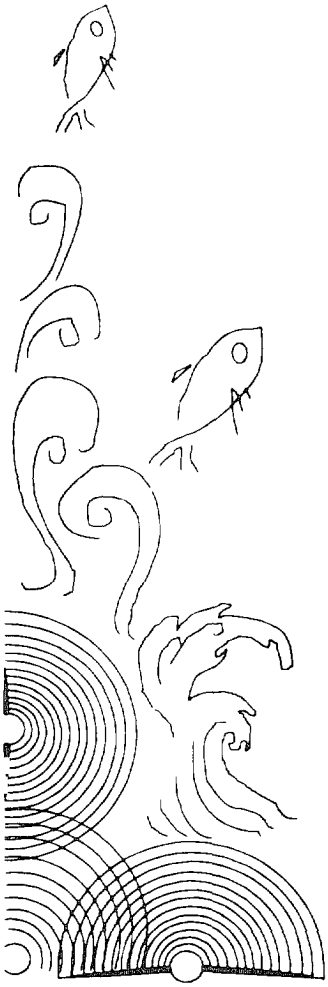
EPOMEX ICLARM International Workshop on Tropical Groupers and Snappers a summary of workshop findings (D Pauly F Arreguin Sanchez J L Munro and M C Balgos) Workshop on Sustainable Aquaculture and Coral Reef Fishes Sabah Malaysia 4 7 December

Fisheries resources management challenges and opportunities in the BIMP EAGA (G T Silvestre) First Meeting of the Task Force on Resource Assessment Brunei Darussalam Indonesia Malaysia the Philippines (BIMP) East ASEAN Growth Area (EAGA) Working Group on Fisheries Cooperation Quezon City Philippines 7 8 March

ICLARM s aquatic environments program and coral reef health a briefing (J W McManus) John T and Catherine D MacArthur Foundation Headquarters Chicago, USA 6 August

ICLARM s aquatic environments program coral reef health and ReefBase (J W McManus) Seminar, NOAA Headquarters Virginia, USA 29 July

ICLARM s aquatic environments program and ReefBase (J W McManus) USAID Virginia USA



29 July World Bank Headquarters, Washington DC, USA, 5 August Ministry of Foreign Affairs The Hague, Netherlands 26 August

Impacts of fishing on coral reef communities (J W McManus) SCOR Working Group 105 The Impact of World Fisheries Harvests on the Stability and Diversity of Marine Ecosystems Initial Workshop Halifax Canada, 5 7 November

Integrated management of coastal fisheries lessons from initiatives in San Miguel Bay Philippines (G T Silvestre) 25th Session of the Asia Pacific Fishery Commission (APFIC) Seoul Korea 15 24 October

The International Year of the Reef, global monitoring and ReefBase (J W McManus M Ablan and S Vergara) International Year of the Reef 1997 Organizational Meeting 12 September

Introduction to ReefBase a global database on coral reefs and their resources (Keynote address by J W McManus) Workshop on Multimedia Database Systems and Biodiversity Taipei Taiwan, 22 27 February

Living aquatic resources and irrigation some considerations (J W McManus) Workshop on Multiple Uses of Water Washington DC, USA, 25 27 July, also SWIM Steering Committee Meeting Washington DC, USA, 25 27 July

Mapper a mapping tool for database systems with coral reef applications (G U Coronado and J W McManus) Eighth International Coral Reef Symposium Balboa Panama 26 30 June

The Philippine marine aquarium fish industry biodiversity assessment and prospects for sustainability (B Vallejo) Eighth International Coral Reef Symposium Balboa, Panama, 26 30 June

The proposed International Spratly Island Marine Park ecological considerations (J W McManus and L A B Meñez) Eighth International Coral Reef Symposium Balboa Panama 26 30 June

Rapid appraisal of the fisheries and coastal habitats of Ulugan Bay Puerto Princesa Palawan, Philippines (L Garces) Strategic Planning Workshop for Stakeholders of Ulugan Bay Area Puerto Princesa City Philippines, 27 November

ReefBase (Demonstration by B Vallejo) Consultative Meeting on a Proposed ASEAN Aquarium Society Jakarta Indonesia, 13 20 October

ReefBase background and demonstration (J W McManus) International Coral Reef Initiative Western Pacific / Eastern Africa Regional Workshop Mahe, Seychelles, 25 29 March

ReefBase and the global analysis of coral reef health (J W McManus) International Coral Reef Initiative East Asia Seas Regional Workshop Bali Indonesia, 18 22 March

ReefBase a global database of coral reefs and their resources (J W McManus and M C A Ablan) Eighth International Coral Reef Symposium Balboa, Panama 26 30 June

Tropical marine fisheries and the future of coral reefs (J W McManus) Eighth International Coral Reef Symposium Balboa Panama, 26 30 June

Uses of coral reefs issues and prospects (M C Balgos and S G Vergara) Workshop on Sustainable Aquaculture and Coral Reef Fishes Sabah Malaysia 4 7 December

Fisheries Resources Assessment and Management Program

A decade of progress in coral reef fisheries research 1986 1995 (J L Munro and N V C Polunin) Eighth International Coral Reef Symposium Panama City, Panama, 23 29 June

Marine ecosystem management an ode to Odum (V Christensen and D Pauly) International Conference on Ecosystem Management for Sustainable Fisheries US National Research Council, Ocean Studies Board Monterey, California USA, 19 23 February

Towards a generic trawl survey database management system (N Gayanilo and D Pauly) Workshop on Sustainable Exploitation of Tropical Coastal Fish Stocks in Asia Manila, Philippines, 2 5 July

Integrated Aquaculture Agriculture Systems Program

Aquaculture and sustainable farming an integrated approach to incorporating fish into small scale farming systems (M Prein) Workshop on Aquaculture Research and Sustainable Development in Inland and Coastal Regions in South East Asia Organized by the International Foundation for Science (IFS), Stockholm CanTho University, Vietnam 18 22 March

Coral reef food webs of the Maldives (R E Brummett) Seminar presented to the Faculty of Biology Chancellor College University of Malawi, 14 March

Demonstration of RESTORE program a research tool for natural resource management, monitoring and evaluation (M Prein) IBSRAM PACIFICLAND Annual Meeting Traditional and Introduced Sloping Land Technologies for the South Pacific Suva, Fiji 14 18 October

Environment and sustainable aquaculture in Africa (R E Brummett) World Aquaculture Society Meeting, Bangkok, Thailand 29 January

Farmer participatory research approaches towards agriculture aquaculture integration for sustainable management of natural resources (M Prein C Lightfoot and R S V Pullin) GTZ/CIAT Workshop on Agricultural Research and Sustainable Management of Natural Resources Cali Colombia, 5 9 February

Farmer scientist research partnerships for aquaculture development in subSaharan Africa (R E Brummett) Seminar presented to the Faculty of the Asian Institute of Technology Bangkok Thailand 8 February

Fishes and crops the case for an integrated approach (M Prein) IBSRAM PACIFICLAND Annual Meeting Traditional and Introduced Sloping Land Technologies for the South Pacific Suva, Fiji 14 18 October

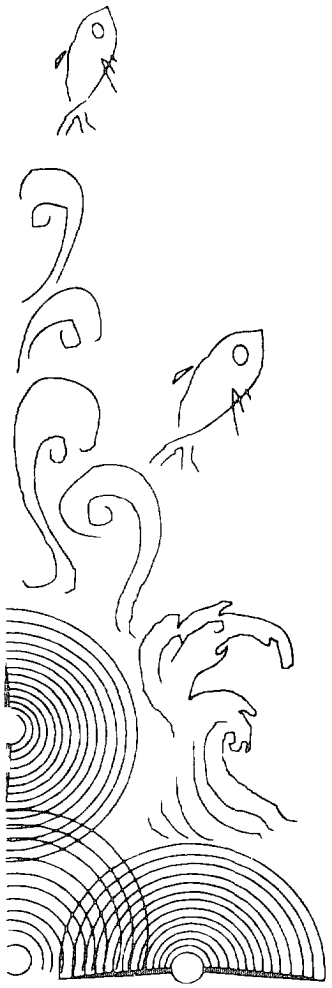
ICLARM s research approach to technology transfer and impact assessment (M Prein) IBSRAM PACIFICLAND Annual Meeting Traditional and Introduced Sloping Land Technologies for the South Pacific Suva, Fiji, 14 18 October

Indicators of sustainable farming systems a synthesis of issues and approaches (H McArthur and J PT Dalsgaard) Fourteenth International Symposium on Sustainable Farming Systems BMICH sponsored by ASFRE/AFSA Colombo Sri Lanka 11 16 November

Integrated agriculture aquaculture a way for food security for small farmers and better resource management and environment (M V Gupta M A Rahman M A Mazid and J D Sollows) International Symposium on Food Security and Innovations Successes and Lessons Learned University of Hohenheim Germany 11 13 March

Integrated aquaculture agriculture farming systems research into their sustainability and biodiversity in the context of developing countries (M Prein) Biodiversity and Sustainable Agriculture Organized the Swedish Scientific Council on Biological Diversity Ekenas Sweden, 14 17 August

A method for assessment of adoption and impact of aquaculture technologies on rural household in Bangladesh (M V Gupta) International Symposium on Food Security and Innovations



Successes and Lessons Learned University of Hohenheim, Germany 11 13 March

Monitoring and modeling agroecological sustainability indicators at the farm level (J PT Dalsgaard) Fourteenth International Symposium on Sustainable Farming Systems, BMICH, sponsored by ASFRE/AFSA Colombo, Sri Lanka, 11 16 November

On farm seed production of *Cirrhinus reba* for sustainable biodiversity conservation (S D Tripathi M A Mazid and D Mazumder) National seminar on small indigenous species (SIS) culture in Bangladesh Organized by Rajshahi University, Bangladesh, 12 December

Participatory methods in farming systems a synthesis of concepts and issues (H McArthur) Four teenth International Symposium on Sustainable Farming Systems, BMICH, sponsored by ASFRE/AFSA Colombo, Sri Lanka, 11 16 November

Research development linkages (R E Brummett and B A Haight) Expert consultation on small scale rural aquaculture FAO Rome, Italy, 28 31 May

The role of a fish pond in integrated resource management (F J K Chikafumbwa, R E Brummett and R P Noble) CURE (Conservation Unit for the Rehabilitation of the Environment) Coor dination Meeting Blantyre Malawi, 18 March

Tracking nutrient flows in a multi enterprise farming system with a mass balance model (ECOPATH) (J PT Dalsgaard) Conference on Managing Soil Fertility for Intensive Vegetable Produc tion Systems in Asia Asian Vegetable Research and Development Center (AVRDC) Tainan Taiwan 4 10 November

Using ECOPATH II to model analyze and compare the states of agroecological systems (J PT Dalsgaard and V Christensen) Ecological Summit 96 The Royal Danish School of Phar macy, Copenhagen, Denmark, 19 23 August

Coastal Aquaculture and Stock Assessment Program

Can aquaculture help restore and sustain production of giant clams? (J D Bell A M Hart, T P Foyle, M Gervis and I Lane) Second World Fisheries Congress Brisbane, Australia 28 July 1 August

Development of giant clam farming in the Indo Pacific marketing and transport considerations (J D Bell I Lane and A M Hart) Marketing and Shipping Live Aquatic Products 96 an industry conference and exhibition October 13 15

The status of marine fish larval rearing technology in Australia (S Battaglene and S Fielder) Interna tional Symposium on Live Food Organisms and Environmental Control of Marine Animals Nagasaki, Japan 1 4 September

Testing the use of a marine protected area to restore and manage invertebrate fisheries at the Arnavon Islands Solomon Islands choice of methods and preliminary results (M P Lincoln Smith J D Bell and B D Mapstone) Eighth International Coral Reef Symposium Panama City Panama 24 29 June

Transfer of technology on marine ranching to small island states (J D Bell) International Symposium on Marine Ranching in Ishikawa Kanazawa Japan, 13 16 September

Policy Research and Impact Assessment Program

Ecological input costs in agricultural production process issues in the agricultural development of Northwest Cambodia (M Ahmed and N Shams) Designing Sustainability Building Partnerships among Society Business and the Environment The Fourth Biennial Conference of International Society for Ecological Economics Boston USA 3 8 August

ICLARM s activities in coastal management and valuation of natural resources (A C Trinidad) Workshop on Coastal Management and Exploitation of Resources, Jakarta, 16 20 Sep tember

Impact evaluation of community based coastal resource management projects in the Philippines (R S Pomeroy, R B Pollnac, C D Predo and B M Katon) IUCN World Conservation Con gress Montreal, Canada, 13 23 October

Preliminary report on the socioeconomic and eco technological baseline surveys (L X Sinh and A L Garces) Fourth Advisory Board Meeting of the WES Aquaculture Project Vungtau City, Vietnam, 30 November

A review and evaluation of community based coastal resources management projects in the Philip pines, 1984 1994 (M B Carlos and R S Pomeroy 1995) Regional Workshop on Coastal Fisheries Management Based on Southeast Asian Experiences Some Important Issues of Sustainable Management and Development Chiang Mai, Thailand, 19 22 November

Technical and socio economic aspects of integrated aquaculture systems in CanTho and Vinhlong provinces (L X Sinh and A L Garces) Freshwater Aquaculture Research in the Mekong River Delta to 2000 CanTho University, Vietnam, 10 11 July

International Partnerships and Networks Program

Objectives and methodology followed for DEGITA (M M Dey) The Third Committee Meeting of the International Network on Genetics in Aquaculture (INGA) Cairo, Egypt, 8 11 July

Synthesis of experimental data conducted in the DEGITA Project (M M Dey) The Third Commit tee Meeting of the International Network on Genetics in Aquaculture (INGA) Cairo Egypt, 8 11 July

Office of the Director General

African aquaculture a myriad of possibilities (M J Williams) World Aquaculture 96 World Aquaculture Society Bangkok Thailand, 29 January 2 February

Application of genetics to aquaculture challenges, strategies and principles (The paper given by M J Williams was prepared largely by A E Eknath) Address to the Asian Fisheries Society Indian Branch Cochin India 24 November

Education for aquatic resource management in developing countries (Keynote address by M J Williams) International Conference on Re inventing Fisheries Management University of British Columbia, Canada 1 23 February

Fisheries and conservation a roadmap for the future (Keynote address by M J Williams) IUCN Marine and Coastal Workshop Montreal Canada 17 19 October

Women in fisheries (Keynote address by M J Williams) Seminar on Women in Fisheries in Indo China Countries Phnom Penh Cambodia 6 8 March

Many of ICLARM s programs involve training seminars or courses to exchange or impart knowledge or skills of new experimental, or more appropriate technologies and practices ICLARM staff members are occasionally called upon to provide students, partners, collaborators or specialized groups with technical expertise in a supervisory advisory or consultative role Both types of activities are included in this section

Biodiversity and Genetic Resources Program

Advisory Services

Dr R Pullin served in 1996 as chairperson for the Systemwide Genetic Resources Program (SGRP) s InterCenter Working Group on Genetic Resources, and made visits in March and October to help coordinate SGRP plans and activities The Program provided a fact sheet for the SGRP information folder prepared for the Fourth International Technical Conference on Plant Genetic Resources, held in Leipzig in June

BGRP provided ICLARM s contributions to the Systemwide Information Network on Genetic Resources (SINGER)

Dr Pullin participated in the Second Meeting of the Convention on Biological Diversity s Subsidiary Body on Scientific, Technical and Technological Advice, 2 6 September in Montreal, Canada

Germplasm Enhancement and Breeding Program

Training

Ms R Velasco worked with representatives from the Philippine Bureau of Fisheries and Aquatic Resources (BFAR) to provide on site training on GIFT (Genetic Improvement of Farmed Tilapia) technologies and practices from 22 29 May in selected areas of Mindanao, Philippines The participants were local fish farmers and Department of Agriculture officials

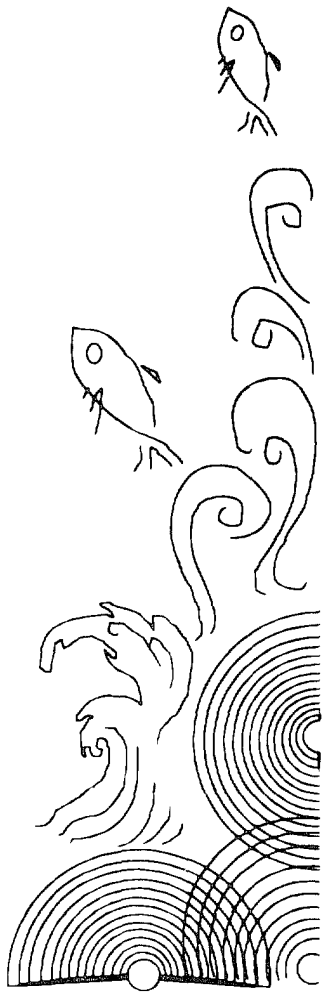
Advisory Services

Dr A Eknath provided guidance to a FAC/CLSU graduate student, Ms F Longalong on her thesis entitled Response to selection for low and high occurrence of sexual maturation at a fixed age in Nile tilapia (*O niloticus*)

Aquatic Environments Program

Training

As part of AEP s project to develop a broad based coastal management training program for the Philippines a pilot course with 15 participants took place in Bolinao, Pangasinan at the University of the Philippines Marine Science Institute laboratory The course was given five times involving a total of 102 participants mostly from the Visayas and Mindanao The participants were mid level staff working in the coastal management programs of the Department of Agriculture (12%) DENR (24%) local government units (21%) academic institutions (22%), NGOs (13%) and others The five sessions were financially supported by the Rockefeller Brothers Fund The Visayas State College of Agriculture GTZ Tropical Ecology Program and the USAID Coastal Resources Management Program co sponsored the last two sessions



Fisheries Resources Assessment and Management Program

Training

Mr Gayanilo trained eight representatives from the National Aquatic Resources Agency (NARA) Sri Lanka in the use of FiSAT software a fisheries stock assessment package developed jointly by ICLARM and FAO Manila Philippines 4 15 March

Mr Gayanilo gave a short course on the use of FiSAT to eight fisheries scientists from various countries at the University Catolica del Valparaiso in Chile (9 13 September) and to over 30 researchers from the Instituto del Mar de Peruano in Callao Peru (16 20 September)

A representative from NARA spent a month at ICLARM in Manila with program staff learning how to develop a low level geographic information system (GIS) which will be an important component of TrawlBase, slated for development in 1997

Drs V Christensen and D Pauly served as trainers for 40 participants at the international course entitled ECOPATH Modeling and Management of Aquatic Ecosystems CICIMAR, La Paz, Baja California Sur, Mexico 21 26 October

Integrated Aquaculture Agriculture Systems Program

Training

Under the framework of a collaborative research activity with the Community Forestry Project Quirino (CFPQ/GTZ/DENR) and ICLARM s project on sustainability indicators for integrated aquaculture systems (BMZ/GTZ), four 1 day training workshops were held with 37 Philippine farmers on low external input IAA (integrated aquaculture agriculture) technology This activity is a component of the RESTORE farmer participatory process to study the impact of IAA on smallholder farms

A 10 day study tour for four Bangladeshi scientists and policy makers was organized in Malaysia Philippines and Thailand An 18 day tour was also organized for a senior administrator to visit India to study the latest developments in the fisheries sector

The following training programs were organized during 1996 under the Research for Development of Sustainable Aquaculture Technologies in Bangladesh project (USAID)

1. Aquaculture and integrated farming systems management For NGOs and extension officers Three sessions Total of 44 participants
2. Hatchery and nursery management of carps and catfishes For NGOs and extension workers Two sessions Total of 36 participants
3. Low co t aquaculture practices For farmer research partner One course with 28 participants
4. Integrated aquaculture agriculture practices For farmer research partners Two courses Total of 59 participants
5. No feed no fertilizers low cost aquaculture technologies For farmer research partners Two courses Total of 61 participants
6. Improved fish culture management practices One course involving 20 farmers and one involving 25 NGOs/extension workers
7. Aquaculture research and development activities in Malaysia Philippines and Thailand One course Four senior government administrators and scientists participated
8. Quality fish seed production Two courses each attended by 42 hatchery and nursery operators
9. Aquaculture research and development activities in India One senior government official participated

Advisory Services

Dr M Prein served as Guest Editor for the July issue of the ILEIA Newsletter (v 12)

Malawi Research Site Four students from the University of Malawi (Bunda and Chancellor campuses) were hosted at the Domasi National Aquaculture Center for their thesis work which was supported and supervised ICLARM supported azolla tilapia systems at research at Domasi by two Department of Fisheries research staff The library has been restaffed and can now provide improved services to researchers such as computerized literature databases of all holdings in Domasi and at ICLARM Headquarters in Manila FishBase is available to users on CD ROM

Dr Prein served as external reviewer of the SCALE (SAO Cambodia Integrated Aquaculture on Low Expenditure) Project of Southeast Asian Outreach, Phnom Penh, Cambodia, 4 16 March

Policy Research and Impact Assessment Program

Training

A one month training for a staff member of the Department of Fisheries Cambodia was conducted under the supervision of Dr M Ahmed She was trained on database management and data analysis for Cambodia s freshwater capture fisheries

Advisory Services

Dr M Ahmed assisted the Department of Fisheries in Thailand and the Department of Livestock and Fisheries in Laos in survey planning for socioeconomic studies under the Mekong River Commission supported Project for Management of Reservoir Fisheries in the Mekong Basin 3 11 October 1996

Dr Ahmed assisted the Department of Fisheries in Cambodia in the pre appraisal and finalization of the project document for Phase II of the Management of Freshwater Capture Fisheries Project to be supported by DANIDA and Mekong River Commission 2 17 December 1996

Dr R Pomeroy assisted in the preparation of a constitution for the Asian Fisheries Social Science Research Network (AFSSRN) under the Asian Fisheries Society Preparation was also under taken for developing a web page

Workshops/Conferences/Seminars Conducted

Events in which ICLARM played a central role in organizing, hosting or sponsoring are listed here

Germplasm Enhancement and Breeding Program

DEGITA (Dissemination and Evaluation of Genetically Improved Tilapia in Asia) Training Workshop (A Eknath, C Janagap) Los Baños Philippines, 12 30 March

Inauguration Meeting of the research facilities for the Center for Applied Fish Breeding and Genetics Research and Launching of GIFT Foundation International (A Eknath, B Acosta, M P de Vera, R Velasco H Bolivar, F Rius, P Virly, C Federigan, F Lopez, N Cabrera) Nueva Ecija, Philippines, 9 October

Strategic Planning Workshop for the GIFT Foundation (A Eknath, M P de Vera, R Velasco, H Bolivar) Nueva Ecija, Philippines, 16 December

Workshop on Finalization of the Philippine National Tilapia Breeding Program (A Eknath, R Velasco) Manila, Philippines, 26 28 February

Aquatic Environments Program

International Year of the Reef 1997 Organizational Meeting Manila Philippines 12 September

Workshop on Sustainable Exploitation of Tropical Coastal Fish Stocks in Asia Manila, Philippines, 2 5 July

Integrated Aquaculture Agriculture Systems Program

IIRR/AIT/ICLARM IAASP workshop to plan for future collaboration (M Prein, M V Gupta and R S V Pullin) 30 October

Policy Research and Impact Assessment Program

Milkfish Broodstock Development Program Project meeting with ICLARM, BFAR, SEAFDEC staff (A C Trinidad, F Torres, Jr) Manila, Philippines, 23 February

International Partnerships and Networks Program

The Third Steering Committee Meeting, International Network on Genetics in Aquaculture INGA (M V Gupta, M M Dey A Eknath B Acosta) Cairo Egypt 8 11 July

Workshop on ICLARM Philippine Institutional Research Collaboration (M V Gupta M Dey N D Macawaris) Manila, Philippines 8 November

Selected Media Coverage

In 1996 ICLARM made news around the world This section provides a sampling of the wide variety of media sources that called attention to the Center s objectives and achievements over the past year

PRINT MEDIA

Ahram CLAR selected to be a branch for ICLARM (In Arabic) 13 July 1996
Ahram Developing fish production (In Arabic) 9 July 1996
Akhbar New kinds of Nile tilapia (In Arabic) 9 July 1996
Aquaculture Europe New compact discs on aquatic literature 20(3) 22 1996
Aquaculture News Research, grants, success (22) 9 1996
Aquanews International Centers Week offers opportunity for collaboration B Goetze 11(1) 8 1996
Asian Diver Tridacna S C Chua 5(3) 54 1996
ASTINFO Newsletter Coral reef, fish database now in CD 11(3) 3 1996
ATSAF Circular Zusammenarbeit der CGIAR mit Osteuropa/Zentralasien (46) 13 14 1996
ATSAF Circular ICLARM, Neuer Forschungsstandort in Agypten (46) 13 1996
ATSAF Circular ATSAF Bericht uber die Besuche der General direktoren von CIMMYT, CIAT, ICARDA und ICLARM in Deutschland (47) 2 3 1996
Australian Marine Science Bulletin Species 2000, indexing the world's known species (134) 13 1996
Australian Marine Science Bulletin 1997 International Year of the Reef (136) 22 1996
Beche de mer Information Bulletin Correspondence from Beche de mer special interest group members J Bell (8) 45 1996
Business World Expert offers solutions to fish supply problems 5 August 1996 2
Business World Frankenstein s GIFT K C Yao 15 October 1996 5
Catch and Culture Socio economist Dr Mahfuzuddin Ahmed 1(3) 9 1996
Catch and Culture Women in fisheries 1(4) 1 5 1996
CGIAR News Danida the exemplary donor E B Gonzalez and C I Guevara 3(2) 7 1996
Daily Informer Future fish to be found in farms, managed fisheries A Maguilas 1 October 1996 4
EC Fisheries Cooperation Bulletin Indexing the world's known species, Species 2000 9(1) 28 1996
EC Fisheries Cooperation Bulletin Information services available from ICLARM 9(1) 29 1996
EC Fisheries Cooperation Bulletin International Year of the Reef 1997 9(3) 23 24 1996
Entwicklungpolitische Informationen Reis Fisch Systeme setzen sich durch (11) 24 1996
FAO Aquaculture Newsletter International Expert Meetings on the Use of Chemicals in Aqua culture (12) 19 1996
FFA News Digest Indexing the world s known species, Species 2000 (2) 5 1996
FFA News Digest ICLARM farmers export 25,000 live giant clams (3) 12 1996
Fishing Chimes CIFA poised to revolutionise rohu quality in fish culture 16(2) 6 1996
Fishing Chimes ICAR and ICLARM, scientific and technical co operation V D Singh 16(5) 20 1996
Fishing Chimes 1997 is International Year of the Reef 16(8) 41 1996
Fisheries Economics Newsletter FishBase 96 (42) ix 1996

Fisheries Newsletter DEGITA training workshop in Los Baños Bangladesh Fisheries Research Institute 4(2/3) 4 1996

Fisheries Newsletter Visitors Board of Trustees of ICLARM Bangladesh Fisheries Research Institute 4(1) 8 1996

Fisheries How possible non dues revenues can forward the AFS mission P Brouha 21(11) 4 5 1996

Globe & Mail Canada working to keep cod, other fish off endangered list K Unland 19 October 1996 A1 4

Gomhoria Using engineering genetics in developing fishes (In Arabic) 9 July 1996

IAMSLIC Newsletter FishBase (58) 12 1996

IAMSLIC Newsletter Ian R Smith Memorial Library and Documentation Center (58) 14 15 1996

ICES/CIEM Information Bookends Daniel Pauly s wide ranging mind and work in his book On the sex of fish and the gender of scientists J Rice (28) 15 1996

ILEIA Newsletter Organizations ICLARM 12(2) 29 1996

INFOFISH International Indexing the world s known species Species 2000 (3) 7 1996

INFOFISH International Asia s double aquaculture event, INFOFISH AQUATECH 96 & Aquaculture Asia 96 (3) 11 1996

INFOFISH International Electronic fish encyclopaedia update (4) 43 44 1996

INFOFISH International Women in fisheries in Indo China countries M C Nandeesha (6) 15 21 1996

Intercoast Network Panama Coral Reef Symposium stresses science and management (27) 20 21 1996

Isyu Year of the Reef E B Patanñe 6 November 1996 13

Malaya Record of crisis A Alcala 1 November 1996 12

Malaya Food security and fisheries A Alcala 27 September 1996 16

Manila Bulletin Tilapia is our best bet for sufficiency in fish Z B Sarian 2 August 1996 44

Manila Bulletin Foundation to assure super tilapia availability Z B Sarian 4 October 1996 C2

Manila Bulletin Supertilapia growth in forum C Chavez 21 November 1996 12

Manila Bulletin International Year of the Reef 8 December 1996 48

Manila Chronicle Lahar devastated ponds eyed for massive tilapia culture 30 July 1996 13

Manila Times Foundation for super fish soon to be launched 5 October 1996 14

Manila Times Aquaculture to save Pinoys from hunger A Galang 14 October 1996 3

Morgenavisen Jyllands Posten We can learn from rice farmers (In Danish) J PT Dalsgaard 26 May 1996

NACA Newsletter Indo China seminar on women in fisheries noted for new researches 13(1) 4 5 1996

NACA Newsletter Fourth Indian Fisheries Forum focuses on food security and sustaining aquaculture growth D Kumar 13(4) 4 1996

NACA Newsletter Policy and planning, marine fish health, environment and rice fish system mark year end training and study tour programmes X W Zhou 13(4) 7 1996

New Scientist Blue revolutionaries B Holmes 152(2059) 32 36 1996

Outlook on Agriculture Genetic techniques may help tackle dwindling fish stocks 25(3) 202 203 1996

PCAMRD Waves CD reef databases available on internet and CD 9(2) 5 6 1996

Philippine Daily Inquirer Filipino fishpond farmers urged to breed super tilapia 12 September 1996 C7

Philippine Daily Inquirer Tilapia foundation to be launched 3 October 1996 B6

Philippine Daily Inquirer BFAR, helping meet food security by the third millennium R L Quiason and V Aquino Quiason 15 October 1996 D1, D6

Philippine Daily Inquirer Super tilapia, a gift to the world 15 October 1996 D5 6

Philippine Journal Three options to end row between small, commercial fishers—BFAR 11 November 1996 7

Philippine Journal BFAR holds hearings on commercial fishing ban in Lingayen Gulf T Lapuz Lardizabal (ed) 20 December 1996 7

Philippine Journal Coral reefs still RP s most valuable marine resource 24 March 1996 7

Philippine Journal Novel Cebu program to serve as model for coastal resources management 24 October 1996 7

Philippine Recorder Tilapia Foundation to be launched 21 27 October 1996

Philippine Star Tilapia to emerge as super fish 28 May 1996 6

Philippine Star Foundation for super tilapia R A Fernandez 29 September 1996 28

Philippine Star Escudero cites need to sustain growth in agriculture sector M Galvez 14 October 1996 6

Philippine Star Dr Ambekar Eknath inspects a tilapia breeder at BFAR FAC research station 20 October 1996 26

Pie Is it rice? is it fish? no its superfarming D Tribe 4 15 1996

Quarterly Bulletin of the International Association of Agricultural Librarians and Documentalists Libraries from around the world, International Center for Living Aquatic Resources Management (ICLARM) 41(3/4) 253 254 1996

Quarterly Bulletin of the International Association of Agricultural Librarians and Documentalists CGIAR centers now on the internet 41(3/4) 270 1996

SEAFDEC Newsletter TD library personnel meet their counterparts at ICLARM, Philippines 19(1) 11 1996

SEARCA Diary Coastal resource management project update 25(4) 15 1996

SPC Fisheries Newsletter Fisheries management and marine conservation start to find common ground, a report on the World Conservation Congress (79) 2 4 1996

Spore FishBase 96 (66) 7 1996

Tambuli A National Course on Integrated Coastal Management, Philippines (1) 29 1996

Times Picayune Overfished waters running on empty J McQuaid 24 March 1996 5 8 9

Today Saving RP fisheries from doom H D Tacio 21 May 1996 12, 15

Today New home for super tilapia set up 1 October 1996 15

Wallaceana FishBase 96 (W78) 36 37 1996

WES Newsletter Institutional strengthening for sustainable aquaculture development in the Mekong Delta L Varadi (1/2) 1 1996

World Aquaculture FishBase 96 27(3) 62 1996

NON-PRINT MEDIA COVERAGE

Modern Times Spezial, Austrian Broadcasting Corporation Reiche Ernte Leere Teller H Leger and G Meyer Videocassette

New York Times Interview with John McManus for a television show Makati City

NHK Radio Japan Interview with John McManus Conducted by Leny Hart and Clark Wainboden 23 January 1996

Pressburo Seegrund Interviews with ICLARM program leaders on ICLARM, coral reefs, biodiversity and genetics research Conducted by Martin Arnold and Urs Fitze Makati City 25 October 1996

FINANCIAL STATEMENTS

Financial Statements

FINANCIAL STATEMENTS
DECEMBER 31 1996 AND 1995

Report of Independent Accountants

To the Board of Trustees
International Center for Living Aquatic Resources Management Inc (ICLARM)
(A nonstock nonprofit organization)

We have audited the accompanying statement of financial position of the International Center for Living Aquatic Resources Management Inc (a nonstock nonprofit organization) as at December 31 1996 and 1995 and the related statement of activities and of cash flows for the years then ended These financial statements are the responsibility of the Center's management Our responsibility is to express an opinion on these financial statements based on our audit

We conducted our audits in accordance with generally accepted auditing standards in conformity with international audit guidelines as issued by the International Federation of Accountants Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement An audit includes examining on a test basis evidence supporting the amounts and disclosures in the financial statements An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall financial statements presentation We believe that our audits provide a reasonable basis for our opinion

As explained more fully in Note 2 the Center's financial statements are prepared on the basis of accounting practices prescribed for international agricultural research centers seeking assistance from the Consultative Group on International Agricultural Research Such practices conform with generally accepted accounting principles

In our opinion the financial statements referred to above present fairly the financial position of the International Center for Living Aquatic Resources Management Inc as at December 31 1996 and 1995 and its activities and its cash flows for the years then ended in conformity with generally accepted accounting principles

Our audits were made for the purpose of forming an opinion on the basic financial statements taken as a whole The supplementary schedules of grant revenue restricted core and complementary funding fixed assets capital expenditures capital fund movement funds in trust and details of operating expenses for the years ended December 31 1996 and 1995 are presented for purposes of additional analysis and are not a required part of the basic financial statements The information in the supplementary schedules has been subjected to the auditing procedures applied in the audit of the basic financial statements and in our opinion is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole

Makati City Philippines
February 28 1997

STATEMENT OF FINANCIAL POSITION

	Note	December 31 1996	1995
A S S E T S (U S Dollar 000)			
CURRENT ASSETS			
Cash and cash equivalents including the 1995 grant of			
$2 826 from Japan for Abassa Egypt site refurbishment	2 3	3 332	4 368
Accounts receivable			
Donors (Exhibit 1)	4	1 413	905
Employees		178	84
Others	5	436	313
Supplies inventory	2	30	23
Prepaid expenses		191	47
Other current assets		743	44
Total current assets		6 123	5 784
FIXED ASSETS (Exhibits 3 3A and 3B)			
Center owned			
Property and equipment	2 6	1 684	1 187
Accumulated depreciation		(825)	(581)
		859	606
In custody			
Property and equipment		1 149	826
Total fixed assets net		2 008	1 432
Total assets		8 331	7 216
LIABILITIES AND FUND BALANCES			
CURRENT LIABILITIES			
Accounts payable			
Donors (Exhibit 1)	7	4 034	4 829
Employees	8	453	336
Others	9	205	87
Funds in trust (Attachment II)	10	5	58
Accrued expenses	11	205	100
Reserve for contingencies		200	
Total current liabilities		4 902	5 410
NET ASSETS			
Capital invested in fixed assets (Exhibit 3 3A and 3B)		2 008	1 432
Capital fund (Attachment 1)		765	188
Operating fund		425	191
Total net assets		3 198	1 811
CUMULATIVE TRANSLATION ADJUSTMENT	2	31	(5)
Total liabilities and net assets		8 331	7 216

(See accompanying notes to financial statements)

STATEMENT OF ACTIVITIES

	Note	For the year ended December 31 CORE Unrestricted	Restricted	Total	Complementary	TOTAL 1996	1995
REVENUES							
Total grants	2	5 762	3 781	9 543	31	9 574	7 776
Other revenues		361		361		361	141
Total revenues		6 123	3 781	9 904	31	9 935	7 917

STATEMENT OF ACTIVITIES (continued)

STATEMENT OF ACTIVITIES (continuation)

		For the year ended December 31					
		CORE				TOTAL	
	Note	Unrestricted	Restricted	Total	Complementary	1996	1995
OPERATING EXPENSES							
Research programs		1 805	3 233	5 038	31	5 069	5 035
Conferences and trainings		83	391	474		474	105
Information services		791	157	948		948	488
General administration		2 115		2 115		2 115	1 131
General operations	2	625		625		625	830
Total operating expenses		5 419	3 781	9 200	31	9 231	7 589
Recovery of indirect costs		(493)		(493)		(493)	(434)
Total expenses		4 926	3 781	8 707	31	8 738	7 155
EXCESS OF REVENUES OVER EXPENSES		1 197		1 197		1 197	762
ALLOCATED AS FOLLOWS							
Operating fund		167		167		167	62
Reserves		200		200		200	700
Capital fund		830		830		830	
		1 197		1 197		1 197	762
MEMO ITEM							
Operating expenses By natural classification							
Personnel		2 680	1 943	4 623		4 623	3 675
Operating costs		1 558	1 160	2 718	31	2 749	2 336
Travel		444	678	1 122		1 122	1 025
Depreciation of fixed assets		244		244		244	119
Total operating expenses		4 926	3 781	8 707	31	8 738	7 155

(See accompanying notes to financial statements)

STATEMENT OF CASH FLOWS

	December 31	
	1996	1995
CASH FLOWS FROM OPERATING ACTIVITIES		
Excess of revenues over expenses	1 197	762
Adjustments to reconcile excess of revenue over expenses to net cash provided by operating activities		
Depreciation	244	119
Disposals and write off of property and equipment		37
Changes in		
Accounts receivable		
Donors	(508)	1 247
Employees	(94)	109
Others	(123)	(21)
Supplies inventory	(7)	(4)
Prepaid expenses	(144)	42
Other current assets	(699)	44
Accounts payable		
Donors	(795)	4 122
Employees	117	15
Others	318	(722)
Funds in trust	(53)	58
Accrued expenses	105	(22)
Reserve for transportation services		37
Net cash provided by (used in) operating activities	(442)	5 823

STATEMENT OF CASH FLOWS (continuation)

	December 31	
	1996	1995
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisition of property and equipment		
Center owned	(497)	(543)
In custody	(323)	(201)
Funds invested in property and equipment	576	588
Increase (decrease) in capital fund	577	(304)
Decrease in operating fund due to transfer of funds reserve for transportation services and prior period adjustment	(963)	(737)
Cumulative translation adjustment	36	105
Net cash used in investing activities	(594)	(1 092)
CASH FLOWS FROM FINANCING ACTIVITIES		
Proceeds of note payable		(500)
NET INCREASE IN CASH AND CASH EQUIVALENTS	(1 036)	4 231
CASH AND CASH EQUIVALENTS		
Beginning	4 368	137
End	3 332	4 368

(See accompanying notes to financial statements)

NOTES TO FINANCIAL STATEMENTS
DECEMBER 31 1996 AND 1995

Note 1 General

The International Center for Living Aquatic Resources Management Inc (ICLARM) was established in 1976 by the Rockefeller Foundation and formally incorporated under the laws of the Republic of the Philippines on January 20 1977 as a nonstock philantrophic and nonprofit corporation The Center is also an autonomous international scientific and technical research center with a broad mandate to conduct and catalyze strategic research on all aspects of aquatic resources management which aims to improve productivity of culture and capture fisheries and small scale rural subsistence and market fisheries It also publishes findings and recommendations and holds conferences to discuss current problems related to aquatic resources

ICLARM is a member of the Consultative Group on International Agricultural Research (CGIAR) an informal but highly successful association of public and private sector donors supporting international agricultural research centers

On November 28 1995 an international agreement that recognizes the Center as an international organizational was signed The agreement grants the Center juridical status to enable it to more effectively continue its international efforts and activities in living aquatic resources management

On October 7 1996 Resolution No 62 was adopted by the Philippine Senate and grants the Center certain privileges and immunities which include the following exemptions

a exemption from payment of all taxes which extend to goods imported by the Center intended for its official use

b exemption from payment of gift tax all gifts bequests contributions and donations to the Center are considered allowable deductions for determining the income tax of the donor

c exemption from payment of all customs duties and related levies of any kind

d exemption from payment of income tax of non Filipino citizens serving on the technical and scientific staff on salaries and stipends in foreign currency received solely from and by reason of service rendered to the Center

e exemption from prohibitions and restrictions on the import or export of articles intended for its official use

Note 2 Basis of financial statement presentation and significant accounting policies

The accompanying financial statements expressed in US dollars are prepared on the basis of accounting practices prescribed for international agricultural research centers by CGIAR The CGIAR prescribed accounting practices conform with generally accepted accounting principles
A summary of the Center s significant accounting policies is set forth to facilitate the understanding of data presented in the financial statements

Cash equivalents Cash equivalents are short term highly liquid investments that are readily convertible to known amount of cash with original maturities of three months or less

Foreign currency transactions Philippine peso and other foreign currency denominated transactions are translated to US dollars for reporting purposes at standard bookkeeping rates which approximate the exchange rates prevailing on the dates of the transaction Exchange differences resulting from a) the collection of foreign currency denominated receivables b) the settlement of foreign currency obligations and c) translation of balances of foreign currency denominated accounts at rates different from which they were originally booked are credited/charged to operations Exchange differences resulting from the translation of balances of foreign currency denominated accounts are carried in the Cumulative Translation Adjustment accounts

Revenue Revenue from unrestricted core grants are pledged on an annual basis and are recognized in the accounts when there is probability of collection in the year the grant is pledged If the pledge is later judged to be uncollectible it is written off against revenue of the year in which it is determined to be uncollectible These grants are utilized to fund core programs and the regular operating requirements of the Center

Restricted core grants and grants for complementary projects are recognized as income when funds are committed or received from the donors to the extent of expenses actually incurred Disbursements from these sources are limited by conditions embodied in agreements with donor organizations Excess of grants received over expenses representing grants applicable to succeeding years is classified as Accounts Payable Donors in the Statement of Financial Position

Inventory of materials and supplies Inventory of materials and supplies is stated at cost using the moving average method

Property and equipment Land is stated at historical cost Property and equipment are carried at cost less accumulated depreciation Replacement and renovation of assets and property are financed through reserves funded primarily by depreciation Depreciation of assets owned by the Center is computed on the straight line method over the following estimated useful lives of the related assets

Category description	Estimated life in years
Infrastructure and leasehold improvements	5
Furnishing and equipment	5 10

Property and equipment acquired through restricted and complementary funding are assets in custody and remain the property of the respective donors until the expiration of the agreement/contract after which disposition is to be decided upon by the donors Such assets are separately accounted for in the books as prescribed by CGIAR

Note 3 Cash and cash equivalents

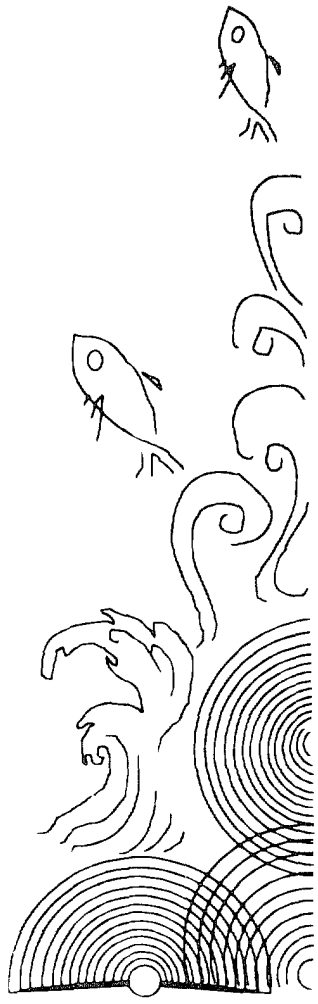
Cash and cash equivalents at December 31 consist of

	1996	1995
	(US$ 000)	
Unrestricted	(702)	1 542
Restricted	4 034	2 826
	3 332	4 368

Note 4 Accounts receivable donors

Accounts receivable from donors consist of unreleased balances of approved grants and expenses advanced at December 31 and are classified as follows

	Exhibit	1996	1995
		(US$ 000)	
Unrestricted core grants	1	1 268	441
Restricted core grants	1	145	417
Complementary project grants	1		47
		1 413	905



Note 5 Accounts receivable others

Other receivables at December 31 consist of

	1996	1995
	(US$ 000)	
Advances to projects	367	228
Others	69	85
	436	313

Note 6 Property and equipment, leases

Property and equipment at December 31 are classified under the following accounts

	1996	1995
	(US$ 000)	
Owned		
Cost		
Land	43	
Infrastructure and leasehold	180	75
Furnishing and equipment	1 461	1 112
	1 684	1 187
Accumulated depreciation		
Infrastructure and leasehold	51	38
Furnishing and equipment	774	543
	825	581
Net book value	859	606
In custody		
Infrastructure and leasehold	447	266
Furnishing and equipment	702	560
	1 149	826
	2 008	1 432

In the event of termination of the activities of ICLARM all of its physical assets shall become the property of the University of the Philippines System If such system is unable or unwilling to accept all or any part of the physical assets these shall be disposed of exclusively for charitable educational or religious purposes as may be determined by the Board of Trustees

The Center together with the Freshwater Aquaculture Center of the Central Luzon State University (CLSU FAC) and the National Freshwater Fisheries Training and Research Center and the Bureau of Fisheries and Aquatic Resources is constructing research and breeding facilities in Muñoz Nueva Ecija Estimated cost of the project is $325 000

The Center leases its administrative offices renewable on a yearly basis at the option of ICLARM It also leases several housing units for its Internationally Recruited Staff for a period of up to 2 years and renewable upon expiration under such terms and conditions acceptable to both parties Annual rentals on these leases aggregate to $403 thousand (US$ 346 thousand in 1995) and the advance deposits which the Center paid under the terms of the covering leases was shown as part of other current assets in the statement of financial position

Note 7 Accounts payable donors

Accounts payable to donors represent restricted grants received in advance and applicable to succeeding periods

Note 8 Accounts payable employees

Accounts payable to employees consist of borrowings from the provident fund of the Center and employees tax savings fund which bear interest at 12% per annum

Note 9 Accounts payable others

Accounts payable others consist of liabilities to various suppliers of goods and services

Note 10 Funds in trust

Funds in trust pertain to funds provided by donors and managed by the Center with an ultimate beneficiary other than CGIAR centers

Note 11 Accrued expenses

Accruals at December 31 1996 consist of various liabilities to suppliers and benefits due to certain employees

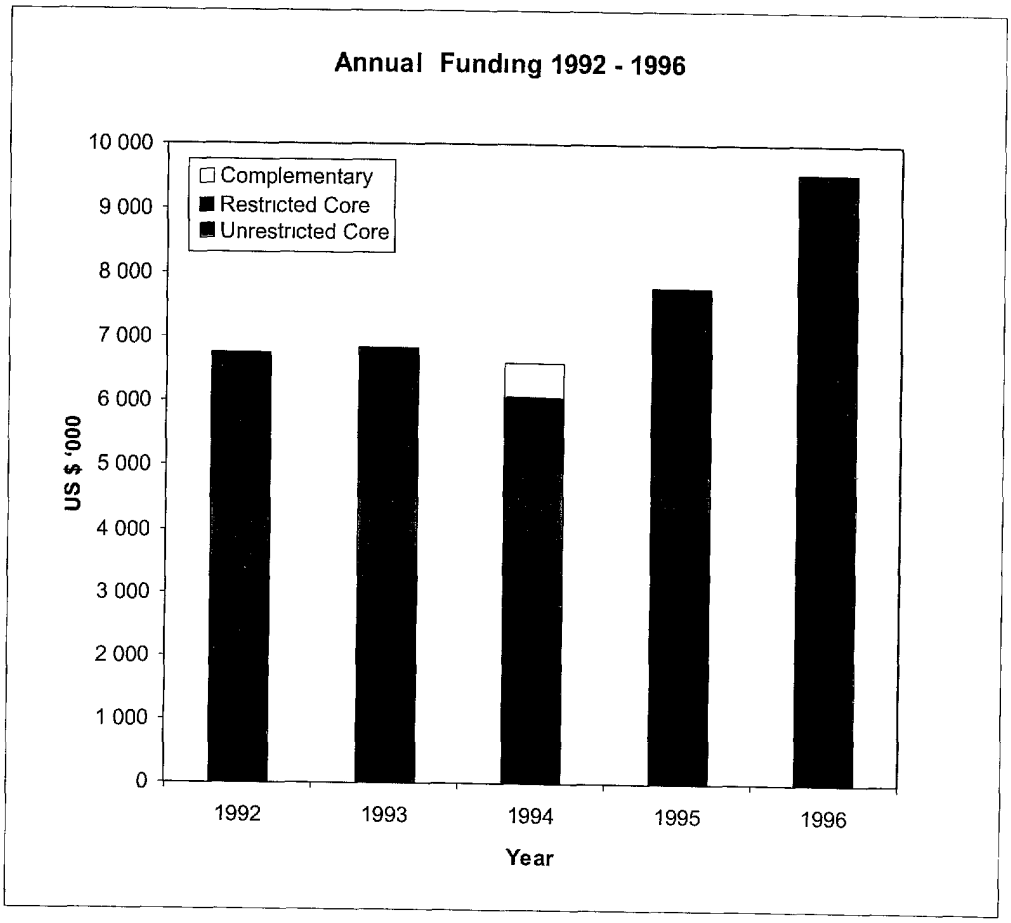
Note 12 Provident fund (Staff Benefit Plan)

The Center maintains a non contributory provident fund for the benefit of its Nationally Recruited Staff Monthly contribution to the fund is computed at 10% 15% of the employees basic salary The plan provides lump sum payment to qualified employees/members upon separation from the Center under certain conditions

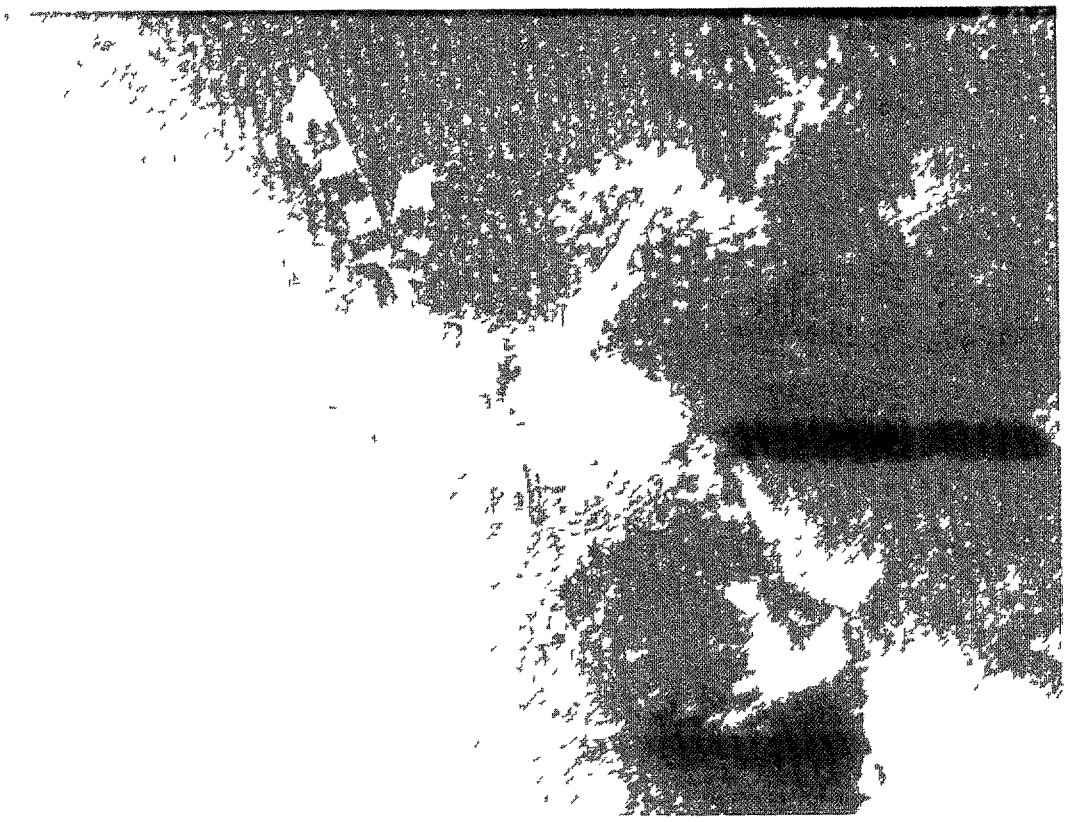
Contributions to the fund amounted to US$99 thousand (1995 US$75 thousand)

Note 13 Changes in fund balance

	Capital invested in fixed assets	Capital Fund	Operating Fund	Total
		(In US$ 000)		
Balance December 31 1995	1 432	188	191	1 811
Additions (deductions) net	576	(253)	67	390
Excess of revenue over expenses		830	167	997
Balance December 31 1996	2 008	765	425	3 198



Note Restricted core funding designated by contract with the donor to support specific project activities Unrestricted core funding may be allocated at the Center s discretion to support general operating costs programs or projects Complementary funding is designated by contract with the donor to support projects or activities that are outside ICLARM s main programs and functions



ICLARM
AT A GLANCE

ICLARM at a Glance

About the CGIAR

The Consultative Group on International Agricultural Research (CGIAR) established in 1971 is an informal association of more than 50 public and private sector donors supporting 16 research centers worldwide Through the research generated by its participating centers, the CGIAR aims to improve food security in developing countries Critical elements of this mission include the alleviation of poverty protection of the natural environment promotion of sustainable agriculture and development, and emphasis on people centered policies

Partners from national governmental agencies, non governmental organizations, community groups farmer associations academic research institutions, the private sector and others contribute to decisions on research policy and programs carried out by the CGIAR centers Members in the Consultative Group provide voluntary grants to support the research agenda, for which programs are proposed, evaluated and agreed annually The CGIAR s agenda is designed to evolve over time incorporating social ecological economic as well as technical factors in developing new and more effective agricultural technologies and policies The CGIAR in turn provides service to national agricultural research systems in developing countries on topics ranging from forestry and livestock to food crops irrigation and aquatic resources

ICLARM's Role in the CGIAR

ICLARM joined the CGIAR in 1992 It is the only CGIAR center with a mandate for living aquatic resources The importance of this unique responsibility is underscored by the fact that

Water covers over 70% of the earth s surface,

About one billion people rely on fish as their primary source of animal protein

Nearly 50 million people are involved in small scale fisheries through catching, processing and marketing, and

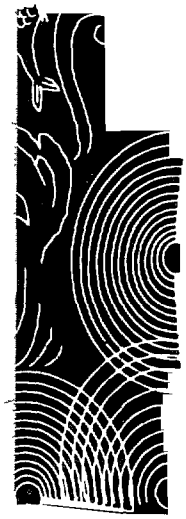
Fish production provides some 150 million people with employment

ICLARM brings issues and opportunities concerning aquatic resources onto the CGIAR agenda and into the broader international traditionally land based agricultural arena

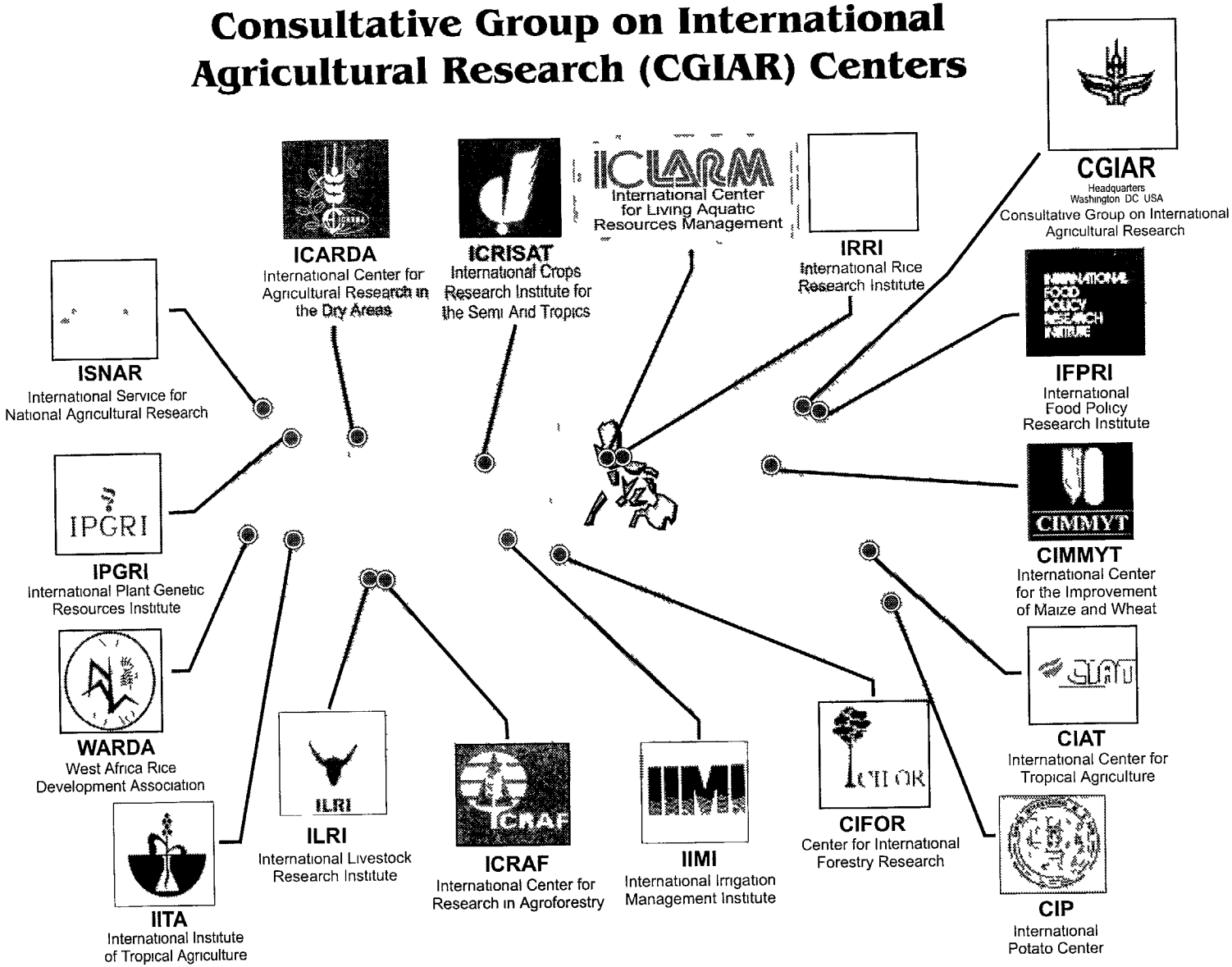
ICLARM initiates the integration of aquaculture with agriculture for improved productivity and hence increased food supply

Through its knowledge of aquatic environments ICLARM helps complement the information needed for agricultural research such as connections and interactions between aquatic and terrestrial ecosystems

ICLARM attends CGIAR meetings, participates in various system wide initiatives and interacts with the CGIAR s Technical Advisory Committee on technical reviews and other activities Specifically in 1996 Dr Roger Pullin was elected to chair the System wide Genetic Resources Programme (SGRP) s Intercenter Working Group on Genetic Resources (ICWG GR) ICLARM staff visited the SGRP convening center twice to coordinate activities such as publishing proceedings from the Consultation on Fish Genetic Resources co sponsored by ICLARM in 1995 ICLARM helped build up the database for the System wide Information Network on Genetic Resources (SINGER) A consultant at ICLARM headquarters using data derived from translation of the GIFT project s database on tilapia germplasm collections and from the Coastal Aquaculture Centre s database on giant clams, identified over 75 000 *ex situ* accession records to add to the SINGER database In addition, ICLARM devised a conceptual framework for a database of *in situ* genetic resources in aquatic protected areas ICLARM also contributed to the development of the System wide Initiative on Water Management (SWIM) intended to seek methods to support aquatic biota using irrigated water and to the system wide initiative on common property management



Consultative Group on International Agricultural Research (CGIAR) Centers



Our Headquarters

In October 1996, the Senate of the Republic of the Philippines passed Resolution No 02 This measure confirmed a 1995 agreement signed by the Secretary of Foreign Affairs and ICLARM s Director General that formally established ICLARM s full juridical personality in the Philippines and acknowledged the Manila office as its headquarters seat The resolution completes all legal require ments granting to ICLARM s staff trustees and consultants a range of immunities designed to facili tate their official functions It also ensures tax exemption and other privileges accorded to interna tional, philanthropic, non profit organizations

Our Board of Trustees

ICLARM s Board of Trustees is responsible for the corporate governance of the Center including setting the strategic direction establishing operational policies and monitoring the conduct of opera tions and achievement of objectives The Board delegates responsibility for executive management of the Center to the Director General

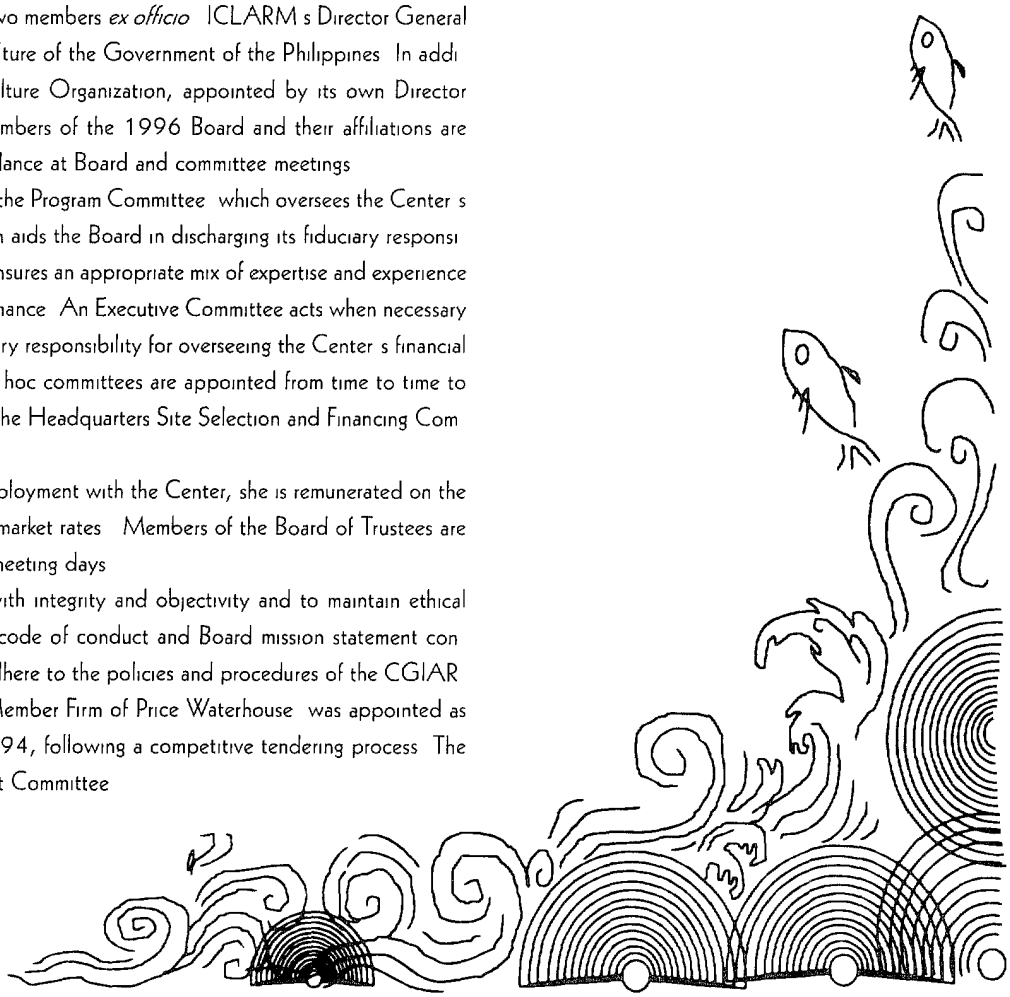
In accordance with the ICLARM Constitution, the Board currently comprises six members elected at large three members elected on the recommendation of the Consultative Group on Inter national Agricultural Research (CGIAR) and two members *ex officio* ICLARM s Director General and the Secretary of the Department of Agriculture of the Government of the Philippines In addi tion, a representative of the Food and Agriculture Organization, appointed by its own Director General serves as a non voting member Members of the 1996 Board and their affiliations are listed below along with a record of their attendance at Board and committee meetings

Standing committees of the Board include the Program Committee which oversees the Center s scientific program the Audit Committee, which aids the Board in discharging its fiduciary responsi bility and the Nominating Committee which ensures an appropriate mix of expertise and experience among trustees and for evaluating Board performance An Executive Committee acts when necessary in the absence of the full Board and holds primary responsibility for overseeing the Center s financial position and its human resources policies Ad hoc committees are appointed from time to time to undertake specific responsibilities, for example the Headquarters Site Selection and Financing Com mittee

The Director General has a contract of employment with the Center, she is remunerated on the basis of a salary and benefits competitive with market rates Members of the Board of Trustees are remunerated for Board service on the basis of meeting days

All Board member are expected to act with integrity and objectivity and to maintain ethical standards in accordance with the procedures code of conduct and Board mission statement con tained in the ICLARM Constitution, and to adhere to the policies and procedures of the CGIAR

The firm of Joaquin Cunanan & Co a Member Firm of Price Waterhouse was appointed as the Center s external auditor in November, 1994, following a competitive tendering process The auditor s performance is reviewed by the Audit Committee



Board Members

John L Dillon, Chair
Department of Agricultural Economics and Business Management
University of New England Australia

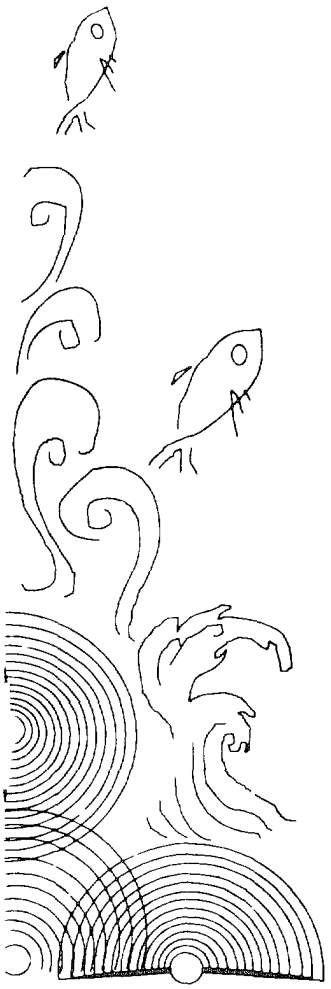
Nyle Brady
Arizona, USA

Salvador Escudero III *ex officio*
Secretary Department of Agriculture
Government of the Philippines

Barry K Filshie (until April 1996)
Australia

Masaru Fujiya
Towa Science Company
Tokyo Japan

Serge Garcia
Director Fishery Resources and Environment Division Fisheries Department
Food and Agriculture Organization of the United Nations (FAO)



Jacqueline McGlade
Professor Department of Biological Sciences
University of Warwick UK

Britha Mikkelsen
Sociologist and Human Resource Planner
COWI/Consult Denmark

Nyawira Muthiga (joined April 1996)
Regional Biodiversity Coordinator
Kenya Wildlife Service

Kurt Johannes Peters
Department of Animal Breeding in the Tropics
Humboldt University of Berlin Germany

Benedict Satia
Programme Coordinator
International Development of Artisanal Fisheries Benin
(now with Fisheries Department of FAO Rome)

Mohamed Shariff
Faculty of Veterinary Medicine and Animal Science
Universiti Putra Malaysia

Meryl J Williams *ex officio*
Director General ICLARM

ICLARM at a Glance

Board member and committee membership	Number of meetings attended					
	Board	Executive Committee (EC)	Program Committee (PC)	Audit Committee (AC)	Nomination Committee (NC)	Head quarters Committee ***
John Dillon EC PC AC, NC	2	2	2	1	2	
Nyle Brady EC, AC, NC	1	2		1		1
Salvador Escudero EC AC	2	1				
Barry Filshie* AC, NC	1			1	1	
Masaru Fujiya PC	2					
Serge Garcia PC	1		1			
Jacqueline McGlade PC	1		1			
Britha Mikkelsen NC	1				1	
Nyawira Muthiga** PC	2		1			
Kurt Peters PC AC	2		2	1		
Ben Satia PC	1	1	1			
Mohamed Shariff PC, NC	2		2		2	1
Meryl Williams EC, PC	2	2	2			1

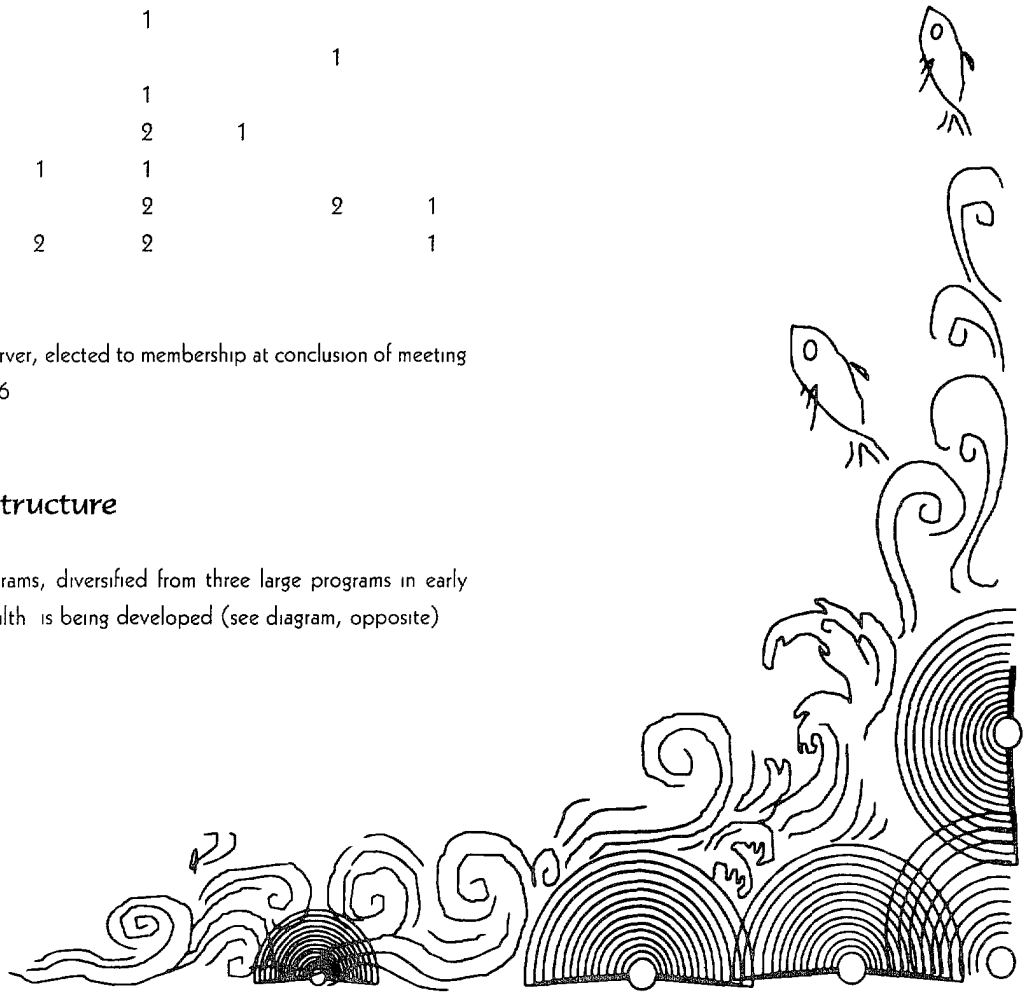
* Ended term after April 1996 meeting

** Attended April 1996 meeting as an observer, elected to membership at conclusion of meeting

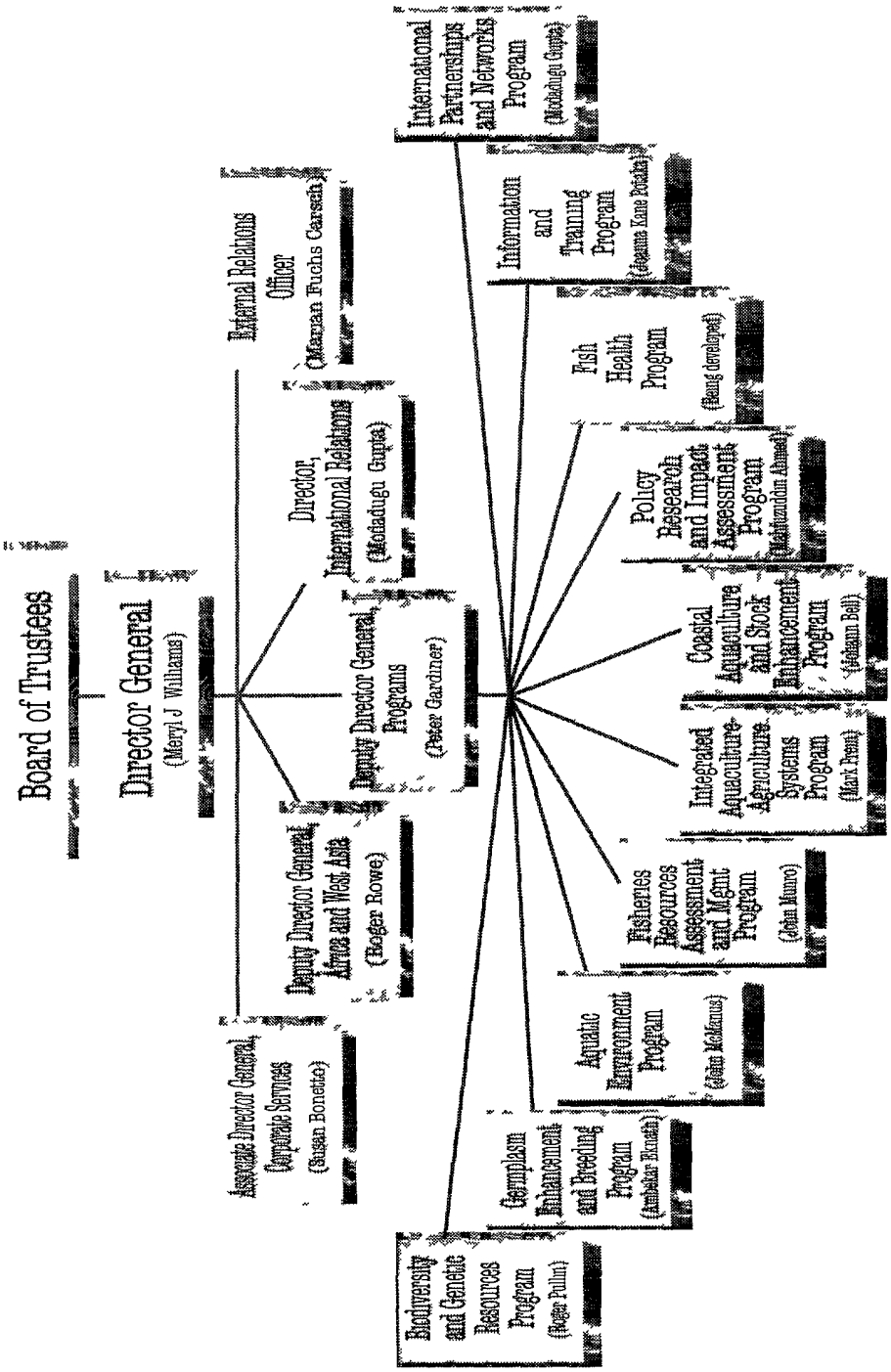
*** First meeting was held in September 1996

Our Structure

ICLARM's executive team oversees nine programs, diversified from three large programs in early 1996. A tenth program focussing on fish health is being developed (see diagram, opposite)



ICLARM Organization



Our Staff

As of December 1996, ICLARM employed 227 regular staff from 12 countries Regular staff are all individuals holding a full time budgeted position which is required by management to meet ICLARM s commitments and Board directives, and whose appointment is normally for more than one year

OFFICE OF THE DIRECTOR GENERAL

Meryl J Williams	Director General
Josephine Hernandez	Executive Assistant
Angela Annabelle Ramirez	Secretary
Daniel Pauly	Principal Science Adviser
Flordeliza Bravo	Clerk Typist

OFFICE OF THE DEPUTY DIRECTOR GENERAL

Peter Gardiner	Deputy Director General (Programs)
Geraldine Gilera	Secretary

INTERNATIONAL RELATIONS OFFICE

Modadugu Gupta	Director
Edna Tuico	Secretary

EXTERNAL RELATIONS OFFICE

Marian Fuchs Carsch	External Relations Officer
Edeena Pike	External Relations Assistant

CORPORATE SERVICES DIVISION

Susan Bonetto	Associate Director General
Rachel C Josue	Personal Assistant

Finance and Management Information Unit

Yolanda Songsong	Manager
Arlene Balane	Finance and General Acctg Supervisor
Ofelia Celestino	Project Accounting Supervisor
Liz Fernandez	Financial Services Staff
Maruja Ventura	Senior General Accountant

Grace Marie Batario	Project Accountant
Maricar Narvacan	Project Accountant
Edita Artates	General Accountant
Samuel Adalia	Programmer
Noel Villanueva	Programmer
Ronabeth Icabandi	Accounting Clerk

Projects Administration Unit

Paulino V Manese	Manager
Rizalina M Camanag	Management Associate
Lorna Lou T Arenas	Program Assistant
Rosenne Funk	Program Assistant
Nylofar Celia Gonzalez	Program Assistant
Jennifer Navarro	Program Assistant
Milagros Irene Robel	Program Assistant
Ma Clotilde G Alcantara	Secretary

Administrative Services Unit

Edgardo Nitorreda	Manager
Ma Gemma Calderon	Purchasing Assistant
Belen R Dagmil	Communications Clerk
Adielle Ma Corazon Teodoro	Receptionist
Remedios Ugalde	Receptionist/Admin Clerk
Dominador Gomez	Mechanic/Driver
Benjamin Bayron	Driver
Florentino Paulino	Driver
Pedrosino Catubig	Office Aide
Hermenegildo Magsino	Office Aide
Emmanuel San Juan	Office Aide

Human Resources Unit

Ana Isabel Llaneza	Manager
Theresa Anne Diaz	Compensation Specialist
Angelica Dayapan	Human Resources Clerk

Computer Services Unit

Wilfredo Fontano	Unit Manager/LAN Administrator
Allan Sesbreno	Assistant LAN Administrator
Romeo Oite	Computer Technician

BIODIVERSITY AND GENETIC RESOURCES PROGRAM

Roger S V Pullin	Program Leader/Principal Scientist
Rainer Froese	Senior Research Scientist
Jan Michael Vakily	Training Coordinator

Ma Lourdes D Palomares	Post Doctoral Fellow
Estelita Emily Capuli	Research Associate
Christine Marie Casal	Research Associate
Rodolfo Reyes Jr	Research Associate
Portia Bonilla	Programmer
Crispina Binohlan	Senior Research Assistant
Pascualita Sa a	Senior Research Assistant
Armi Torres	Senior Research Assistant
Ma Teresa Cruz	Secretary
Emma Del Rosario	Secretary
Rachel Atanacio	FishBase Artist
Cristina Garilao	Research Associate

GERMPLASM ENHANCEMENT AND BREEDING PROGRAM

Ambekar Eknath	Program Leader/Senior Scientist
Basilio Rodriguez Jr	Project Manager
Belen Acosta	Research Associate
Marietta de Vera	Research Associate
Hernando Bolivar	Senior Research Assistant
Ravelina Velasco	Senior Research Assistant
Josephine France Rius	Programmer
Cirilo Federigan Jr	Administrative Assistant
Edna Dionisio	Research Assistant
Marietta Hechanova	Research Assistant
Felicisima Longalong	Research Assistant
Antonio Taduan	Research Assistant
Perla Virly	Secretary
Mario Danting	Accounting Clerk
Florian Lopez	Clerk Typist
Teresita Gonzales	Data Encoder
Rogelio Estrada	Field Assistant
Danilo Beltran	Field Assistant
Camilo Celestino	Field Assistant
Joseph Cruz	Field Assistant
Everlito Dela Cruz	Field Assistant
Mario Dela Cruz	Field Assistant
Leonardo Dequinat	Field Assistant
Baldwin Reyes	Field Assistant
Rolando Villanueva	Field Assistant
Norberto Cabrera	Driver

AQUATIC ENVIRONMENTS PROGRAM

John W McManus	Program Leader/Senior Scientist
Geronimo T Silvestre	Research Scientist
Ma Carmen A Ablan	Research Associate
Zoraida Alojado	Research Associate

Miriam Balgos	Research Associate
Len R Garces	Research Associate
Sheila Vergara	Research Associate
Grace Coronado	Senior Programmer
Irene D Uy	Senior Database Programmer
Lambert Anthony Menez	Senior Research Assistant
Audrey Marie Banzon	Research Assistant
John Marie Gacutan	Research Assistant
Maharlina Gorospe	Research Assistant
Kathleen K Reyes	Research Assistant
Rowena Andrea Santos	Research Assistant
Cindy Cabote	Secretary
Benjamin Vallejo, Jr	Research Associate

FISHERIES RESOURCES ASSESSMENT AND MANAGEMENT PROGRAM

Felimon C Gayanilo Jr	Programming Specialist
Francisco Torres Jr	Senior Research Assistant
Ma Rosandra Gayosa	Research Assistant

Caribbean/France Office

John Munro	Program Leader

Denmark Office

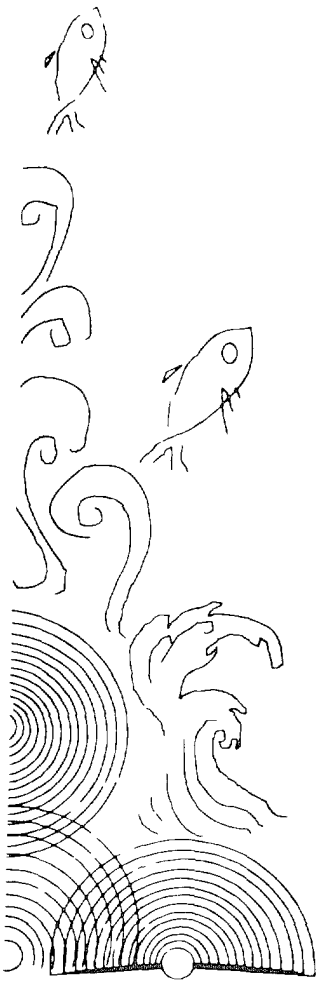
Villy Christensen	Senior Scientist

INTEGRATED AQUACULTURE AGRICULTURE SYSTEMS PROGRAM

Mark Prein	Program Leader/ Senior Scientist
Harold MacArthur Jr	Consultant
Mary Ann Bimbao	Research Associate
Teresita Lopez	Senior Research Assistant
Roberto Oficial	Research Assistant
Emma Luisa Orencia	Research Assistant
Farlyz Felix Villanueva	Research Assistant
Judith Foronda	Secretary

Bangladesh

Satyendra Datt Tripathi	Senior Aquaculture Specialist
Debashish Mazumder	Research Associate
Khan Golam Rasul	Accountant
Anwarul Islam	Computer Programmer



Bijoy Bhusan Debnath	Secretary
Abdur Razzak	Driver
Rowshon Ali	Messenger
Kazi Shafiqur Rahman	Messenger
Tapan Chandra Sarker	Messenger

Malaŵi

Randall Brummett	Project Director
Fredson Chikafumbwa	Research Associate
Patience Kananji	Project Assistant
Foster Makuwa	Station Manager
Yusef Fulaye	Technical Assistant
Issa Jaffari	Technical Assistant
Alim Montjeza	Technical Assistant
Silas N sonthi	Technical Assistant

COASTAL AQUACULTURE AND STOCK ENHANCEMENT PROGRAM

Solomon Islands

Johann Bell	Program Leader
Rayner Pitt	Manager
Stephen Battaglene	Aquaculture Scientist
Idris Lane	Assistant Manager
Cletus Oengpepa	Assistant Manager
Kim Friedman	Research Associate
Evizel Seymour	Research Associate
Kathy Launa	Finance & Administrative Officer
Alrick Sese	Asst Administrative Officer
Jane Battaglene	Marketing Officer
Charles Anita Fox	Marketing Officer
Stephanie Pallay	Information Officer
Timothy Foyle	Scientific Assistant
Angela Grice	Scientific Assistant
Ferral Lasi	Scientific Assistant
Vanessa Mattin	Scientific Assistant
Christian Ramofafia	Scientific Assistant
Hugo Tafea	Research Assistant
Patrick Tiimy	Research Assistant
Giedon Tiroba	Affiliate Research Assistant
Joseph Boraule	Purchasing Officer
Hendry Rota	Purchasing Officer/Technical Aide
Maxwell Saurongo	Senior Technical Aide
Dick Tavake	Senior Artisan
Moana Pelu	Secretary/Typist
Be erly Tapu	Receptionist/Typist
John Suli	Foreman
Benson Kalea	Foreman/Caretaker

Andrew Peli	Foreman
Jerome Boraule	Technical Aide
John Ta am Eke	Technical Aide
Alfred Lau	Technical Aide
Paul Mercy	Technical Aide
Joseph Olisia	Technical Aide
Mason Tauku	Technical Aide
Thomas Teltoi	Technical Aide
Tom Kavety	Trainee Technical Aide
Emery Kelan	Trainee Technical Aide
Ribeka Manisava	Visitor Service
Mary Naomi	Visitor Service
Timothy Lini	Labourer
George Lionel	Labourer
Texley Meve	Labourer
Solomon Saeti	Labourer
Victor Simi	Labourer
Jimson Te esanau	Labourer
Derek Kalea	Carpenter
Beth Pechi Bae	Cleaner/Gardener
Grace Dalei	Cleaner/Gardener
Anna Mansuhuna	Cleaner/Gardener
Medlyn Peli	Cleaner/Gardener

POLICY RESEARCH AND IMPACT ASSESSMENT PROGRAM

Mahfuzuddin Ahmed	Program Leader
Robert Pomeroy	Senior Research Scientist
Magnus Torell	Secondment from SIDA
Brenda Katon	Consultant
Arlene Garces	Research Associate
Emmanuel Genio Jr	Research Associate
Ingvild Harkes	Associate Expert
Ma Josella Mayordomo	Research Assistant
Maricel Gamo	Programmer
Anjanette Trinidad Juan	Secretary
Ma Lucia Tungala	Secretary

Bangladesh

Paul Thompson	Social Scientist
Gazi Nurul Islam	Research Associate
Manjur Kadir	Research Associate
Delwar Hossain	Secretary
Anwar Hossain	Driver

ICLARM at a Glance

INFORMATION AND TRAINING PROGRAM

Joanna Kane Potaka	Program Leader
Jay L Maclean	On Sabbatical
Mary Judy J Vizcarra	Secretary

Publications Services Unit

Leticia B Dizon	Manager
Marie Sol Sadorra	Assistant Editor
Alma Canuto	Publications Assistant
Ma Graciela Balleras	Typesetter
Ariel Aquisap	Typesetter
Roberto Cada	Artist
Albert Contemprate	Artist
Alan Siegfrid Esquillon	Artist
Rodel Resurreccion	Distribution Clerk

Library and Information Services Unit

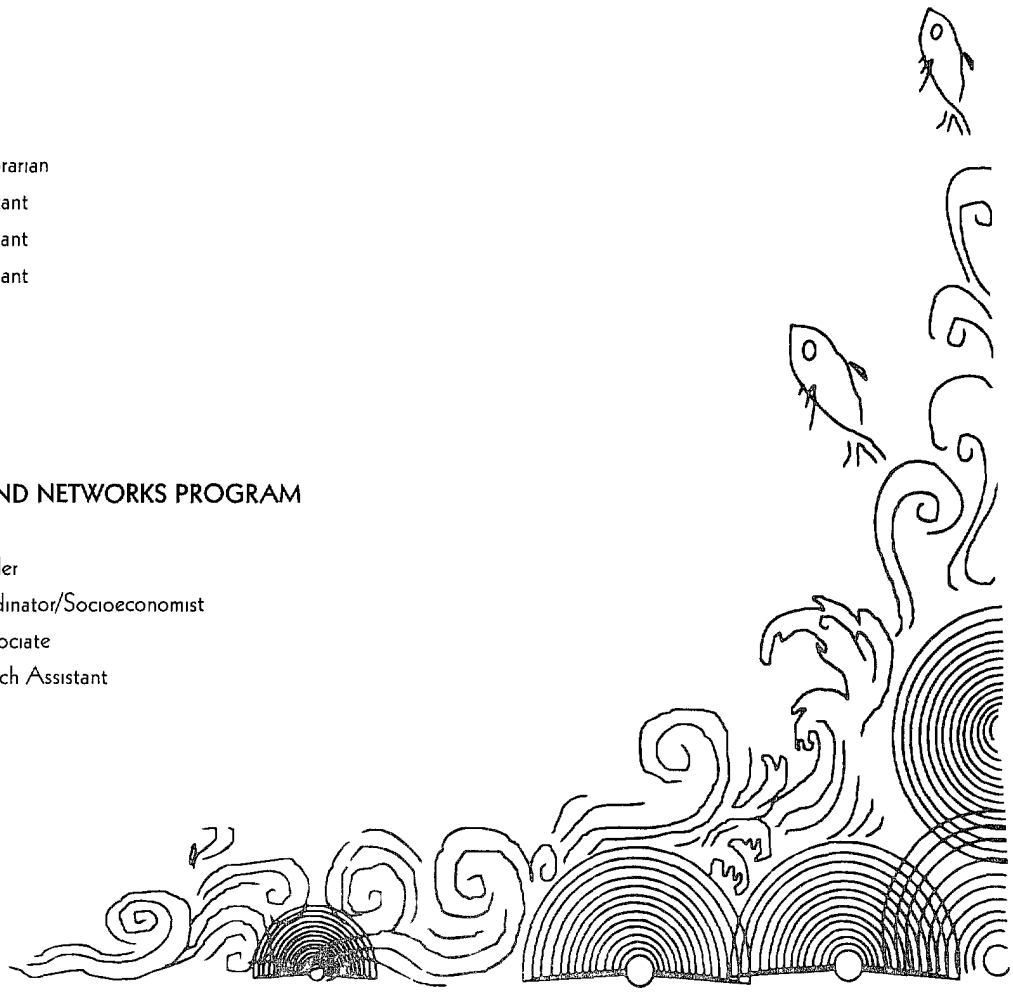
Rosalinda Temprosa	Manager
Norma Jhocson	Librarian
Erlinda Gonzalez	Associate Librarian
Adelina Mendoza	Library Assistant
Ma Isabelita Redulla	Library Assistant
Rosario Yabut	Library Assistant
Reynaldo Damalerio	Library Aide

Translations Services Unit

Catherine Lhomme Binudin	Translator

INTERNATIONAL PARTNERSHIPS AND NETWORKS PROGRAM

Modadugu Gupta	Program Leader
Madan M Dey	Project Coordinator/Socioeconomist
Gaspar Bimbao	Research Associate
Natalie Macawaris	Senior Research Assistant
Lourdes Velasco	Consultant
Maria Concesa Gayanilo	Secretary



Acronyms

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AEP	Aquatic Environments Program
AFS	American Fisheries Society
AFSSRN	Asian Fisheries Social Science Research Network
AIT	Asian Institute of Technology (Thailand)
AKVAFORSK	Institute of Aquaculture Research of Norway
ALCOM	Aquaculture for Local Community Development
APSF	Australia and Pacific Science Foundation
BCMELP	British Columbia Ministry of Environment Lands and Parks
BFAR	Bureau of Fisheries and Aquatic Resources (Philippines)
BGRP	Biodiversity and Genetic Resources Program
BMZ	Bundesministerium fur Wirstchaftliche Zusammenarbeit
BRAC	Bangladesh Rural Advancement Committee
BVI	British Virgin Islands
CAC	Coastal Aquaculture Centre (Solomon Islands)
CARICOM	Caribbean Community
CASEP	Coastal Aquaculture and Stock Enhancement Program
CEC	Commission of the European Communities
CFPQ	Community Forestry Project Quirino (Philippines)
CGIAR	Consultative Group on International Agricultural Research
CHC	Canadian High Commission
CRED	Centre for Resource and Environment Development (Bangladesh)
CRIFI	Central Research Institute for Fisheries Indonesia
CTA	Technical Centre for Agricultural and Rural Cooperation
CTU	CanTho University (Vietnam)
DANIDA	Danish International Development Assistance
DEGITA	Dissemination and Evaluation of Genetically Improved Tilapia in Asia
DENR	Department of Environment and Natural Resources (Philippines)
DfID	Department for International Development (formerly ODA) UK
DIFRES	Danish Institute of Fisheries Research
DOF	Department of Fisheries
EPOMEX	Program of Ecology Fisheries and Oceanography of the Gulf of Mexico
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
EU STABEX	European Union Program to Stabilize Export Earnings
FAC/CLSU	Freshwater Aquaculture Center of the Central Luzon State University (Philippines)
FAO	Food and Agriculture Organization
FCRI/HAKI	Fish Culture Research Institute (Hungary)
FRAMP	Fisheries Resources Assessment and Management Program
FSP	Fisheries Sector Program
GBRMPA	Great Barrier Reef Marine Park Authority
GEBP	Germplasm Enhancement and Breeding Program
GIFT	Genetic Improvement of Farmed Tilapias
GTZ	Deutsche Gesellschaft fur Technische Zusammenarbeit GmbH (German Agency for Technical Cooperation)
IAASP	Integrated Aquaculture Agriculture Systems Program
IAB	Institute of Aquatic Biology (recently renamed Water Resources Research Institute Ghana)

Acronyms

IADB	Inter American Development Bank
IDRC	International Development Research Centre (Canada)
IFAD	International Fund for Agricultural Development
IFM	Institute for Fisheries Management and Coastal Community Development
IFPRI	International Food Policy Research Institute
IIRR	International Institute for Rural Reconstruction
INGA	International Network on Genetics in Aquaculture
IPGRI	International Plant Genetic Resources Institute (Italy)
IPNP	International Partnerships and Networks Program
IRRI	International Rice Research Institute (Philippines)
ITP	Information and Training Program
IUCN	World Conservation Union
JICA	Japan International Cooperation Agency
MAGFAD	Malawi German Fisheries and Aquaculture Development Project
MINCOOP	French Ministry of Cooperation
MOU	Memorandum of Understanding
MRAG	Marine Resources Assessment Group (London)
MRC	Mekong River Commission
MTM	Mid term Meeting
MTP	Medium term Plan
NARS	National aquatic (or agriculture) research systems
NFFTRC	National Freshwater Fisheries Technology Research Center (Philippines)
NGO	Non government organization
NORAGRIC/NORAD	Norwegian Center for International Agricultural Development
NSC	North Sea Centre (Denmark)
NTAS	Network of Tropical Aquaculture Scientists
NTFS	Network of Tropical Fisheries Scientists
PCAMRD	Philippine Council for Aquatic and Marine Research and Development
PRIAP	Policy Research and Impact Assessment Program
RIMF	Research Institute for Marine Fisheries (Indonesia)
RVAU	Royal Veterinary and Agricultural University (Denmark)
SEAFDEC/AQD	Southeast Asian Fisheries Development Center Aquaculture Department
SGRP	System wide Genetic Resources Program
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
SIDA	Swedish International Development Cooperation Agency
SINGER	System wide Information Network on Genetic Resources
SLFSDP	Sri Lanka Fisheries Sector Development Project
UBC	University of British Columbia (Canada)
UM	Universiti Malaya (Malaysia)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPLB	University of the Philippines at Los Banos
UP MSI	University of the Philippines Marine Science Institute
UPV	University of the Philippines in the Visayas
USAID	United States Agency for International Development
USFRF	University of South Florida Research Foundation Inc
WCMC	World Conservation Monitoring Centre
ZIM	Zoological Institute and Zoological Museum (University of Hamburg)

Appendix A: Introduction in French

Nous sommes heureux de vous presenter cette introduction et le bilan de l annee 1996 Pour mieux apprehender et refleter les demandes croissantes a travers le monde d information et de technologie pour aider a la gestion et l utilisation judicieuse des ressources aquatiques vivantes, l ICLARM s est donnee une nouvelle structure d organisation et de programme au debut de l annee Croyant que le contenu de notre programme de travail n est qu une partie de l equation, nous avons donc aussi developpe une politique progressiste qui explique en detail comment nous voulons conduire notre travail en association avec beaucoup d autres qui partagent notre vision

Les Ressources Aquatiques Vivantes

Les questions se rapportant aux ressources aquatiques vivantes specialement celles concernant la peche et l aquaculture demeurent fermement sur l agenda public Toutefois, le theme de ce rapport annuel est l attention de la presse Les deux domaines principaux de l interêt public sont le noyau peche aquaculture environnement et comment rendre l aquaculture plus nourrissante plus productive et plus juste dans la distribution de ses bienfaits Dans ces preoccupations il y a la prise de conscience d une transition dans la contribution de la peche a la securite d une alimentation energetique LICLARM a ete un element actif dans l examen des implications de cette transition Le poisson autrefois source bon marche de proteines pour beaucoup de pauvres du monde a augmente en prix reel, les reserves mondiales de poissons font l objet de tres importantes pressions aux niveaux actuels d exploitation, et l aquaculture alors qu elle genere des gains importants de production, tend a produire des profits directs d abord pour des groupes aux revenus plus eleves a moins que des inventions technologiques specifiques ne puissent assurer une plus grande equite La pression grandissante sur l environnement, en ce compris l environnement aquatique limite de plus la capacite productive des ressources naturelles telles que l eau et la biodiversite

Le Congres Mondial de la Conservation de l Union pour la Conservation Mondiale (IUCN) a tenu un atelier sur la peche et la conservation attirant, pour la premiere fois beaucoup de participants des courants principaux de peche dans un dialogue sur les questions de la conservation, et coincidant avec l inscription controversee de certaines especes commerciales de poissons sur les Listes Rouges de l IUCN LIUCN a invite l ICLARM a tenir une session de travail sur la peche Cela annonce une nouvelle phase majeure dans la gestion de la peche et une utilisation plus grande d une approche prudente dans les decisions de gestion La politique et les reunions techniques de la Convention Internationale sur la Diversite Biologique comprenaient des ateliers sur les ressources naturelles et la biodiversite aquatique dont beaucoup ont ete suivis et co organises par le personnel de l ICLARM

Un aquaculture nourrissante a retenu l attention des experts comme du public LICLARM est concerne par la façon dont les gens pauvres peuvent partager les bienfaits promis soit comme producteurs soit comme consommateurs Nos interventions de recherche ont pour objectif des svstemes efficaces et ecologiquement viables bases sur des ressources efficaces donnant de veritables moyens et disponibles pour les producteurs a petite echelle (tels que aquaculture agriculture integree elevage de palourdes geantes) et des produits plus accessibles (tels que des races ameliorees de tilapias) pour le consommateur Dans tous les cas, le travail de l ICLARM se concentre sur des systemes respectueux de l environnement ces systemes qui tendent a ne pas causer de problemes graves d environnement ou qui ameliorent meme l environnement

Appendix A: Introduction in French

Les Meilleurs Intervenants

Dans la poursuite de la mission de l ICLARM d ameliorer le bien etre des populations pauvres dans les pays en voie de developpement nous sommes heureux de noter plusieurs realisations remarquables du personnel de l ICLARM personnel des equipes et partenaires de 1996 Ceux que nous voudrions plus specialement mettre en lumiere sont

Lequipe qui a produit FishBase 96, la seconde mise a jour sur CD ROM les Docteurs Rainer Froese Daniel Pauly et tous ceux qui ont travaille et contribue a FishBase au sein de l ICLARM et dans plus de 100 agences associees autour du monde Cette base de connaissances continue de croitre en contenu et en dessins et est en train de devenir le repertoire principal mondial de la connaissance existante sur les poissons Son utilite devrait se developper en 1997 alors qu elle devient l element principal d une initiative majeure de formation sur les ressources de la peche et la biodiversite aquatique, dans les Pays d Afrique, des Caraibes et du Pacifique qui est soutenue financierement par l Union Europeenne et mise en place a travers l ICLARM et ses partenaires regionaux

Une autre base de connaissance globale est notre seconde realisation remarquable Lequipe ReefBase dirigee par le Dr John McManus et rejointe par beaucoup de collaborateurs interesses par les recifs a produit et realise le CD ROM ReefBase au 8eme Symposium International Recifs de Corail a Panama en juin La base de donnees contient deja une information sur plus de 6000 recifs et son contenu va se developper dans les quelques prochaines annees a mesure qu une meilleure couverture de l information existante sur le recif sera achevee Il est en train de devenir une source d information critique pour les decideurs concernes par la gestion du recif dont des millions de personnes dependent

Les Docteurs Daniel Pauly et Purwito Martosubroto (maintenant de la FAO, auparavant du Directorat General des Peches Ministere de l Agriculture Indonesie) les editeurs et les auteurs des chapitres du livre Etudes de base en biodiversite les ressources en poisson de l Indonesie de l Ouest ont produit un travail scientifique significatif mettant en valeur les caracteristiques des ressources de peche de l Indonesie et en developpant de nouvelles perspectives sur la biodiversite issues des donnees d un sondage reunies avant et apres le developpement de ces pecheries

Les Docteurs Robert Pomeroy, Richard Pollnac (Universite de Rhode Island Etats Unis) et Ma dame Brenda Katon ont examine les projets de gestion de la ressource cotiere sur une base communautaire aux Philippines Cet examen donne des aperçus importants des taux de succes de tels projets et les facteurs qui etayent leurs progres C est un examen necessaire a mesure que le monde evolue vers des activites de type communautaires dans la gestion des ressources naturelles

LICLARM a fait connaitre sa politique de partenariat une premiere pour l ICLARM et pour un centre CGIAR Notre politique, soigneusement developpee par le Personnel et le Conseil tout au long des deux dernieres annees etablit les objectifs les principes, et les strategies pour le partenariat Le Dr Modadugu V Gupta Directeur des Relations Internationales etait responsable de la conduite des etapes finales de cette politique importante

Completant son travail en août, l equipe de formation du Programme Secteur Peches a produit une serie de programmes de cours bases sur ces domaines et des ensembles de materiels de formation En etudiant un certain nombre de baies aux Philippines cette equipe de specialistes dirigee par Geronimo Silvestre et Len Garces a developpe et affine les methodes qu ils ont eventuellement integrees dans les cours et materiels de formation

Appendix A: Introduction in French

Anthony Hart et Johann Bell du Centre d Aquaculture Côtiere (CAC) de l ICLARM ont presente un article au deuxieme Congres Mondial de la Peche a Brisbane sur le reensemencement des palourdes geantes dans le milieu naturel Cet article proposait qu un programme de reensemencement ne soit viable que s il est fait avec un elevage de palourdes dans le village Le protection des jeunes palourdes est possible seulement dans un developpement controle mais elle est essentielle pour la survivance d un nombre suffisant de specimens dans les premieres etapes du reensemencement

L Unite des Publications de l ICLARM a ameliore l efficacite et la delivrance de service Cette Unite est en train de mettre en ordre un arriere de publications et d etablir un nouveau projet de systemes de gestion

Le Groupe Consultatif sur la Recherche Agricole Internationale

Faisant partie du processus de renouveau du CGIAR qui a commence en 1994 et s est termine en 1996 nous avons vu l etablissement de nouveaux comites associes en 1996 Le Comite du Secteur Prive et le Comite des Organisations Non Gouvernementales (ONG) Les membres de ces deux Comites ont visite l ICLARM pour des discussions en 1996 Le Comite des ONG a rencontre un groupe de nos collaborateurs de ONG philippines pour en savoir plus au sujet des associations et projets de recherches auxquels nous collaborons

Le CGIAR a aussi introduit une nouvelle formule de financement lors de la reunion de Mi Exercice tenue a Jakarta en mai Cette formule a pour but d allouer la contribution de la Banque Mondiale aux centres (approximativement 15% du financement total du CGIAR) en correlation avec les fonds obtenus d autres donateurs ainsi qu a la constitution de reserves pour la cas ou la Banque rencontrerait de serieuses baisses de fonds au cours des quelques prochaines annees Le nouveau systeme met aussi a la charge des centres d estimer leurs propres recettes comme base de la contribution de la Banque Cela necessite plus de contacts directs avec tous les donateurs, dont certains ont notifie anterieurement leur contributions par l intermediaire de la Banque Mondiale ou du Comite Financier du CGIAR

La Reunion de Mi Exercice du CGIAR etait aussi un point de repere pour l ICLARM, puisque nous avions annonce apres avoir obtenu a cette fin le soutien du CGIAR la decision du Conseil d accepter l offre du Gouvernement Egyptien d utiliser les installations de recherches d Abbassa Le Conseil a determine que le site pourrait etre utilise pour deux fonctions principales d abord comme un centre pour la recherche en collaboration de l ICLARM et les activites de formation dans la region de l Afrique sub Saharienne et dans la region l Asie de l Ouest/Afrique du Nord s attaquant aux problemes de securite de l alimentation de la politique et des questions de ressources humaines a travers une recherche en collaboration avec des partenaires de la region, et aussi comme site pour un systeme ecologique selectionne et une recherche globale en rapport avec des sujets tels que la diversite biologique, la gestion de la ressource naturelle, la conservation genetique, le contrôle et l amelioration, la sante et l alimentation des especes aquatiques et les questions politiques relatives a la peche l aquaculture et les autres utilisations de la ressource aquatique

Appendix A: Introduction in French

Durant l annee 1996 tous les centres CGIAR ont ete invites a commencer a developper leurs projets a moyen terme (MTP) pour couvrir la periode 1998 2000 Pour l ICLARM, c etait notre deuxieme MTP comme membre du CGIAR Nous avons commence par mettre tous ensemble sur papier une discussion exposant les grandes lignes de nos projets Ce document a circule aupres de plus de 400 depositaires de projets au milieu de l annee 1996 Nous avons reçu des reponses ecrites detaillees d environ 120 personnes et organisations En septembre, un conseil scientifique de 11 personnes s est reuni pendant trois jours pour discuter ce document, des reponses, et pour donner ses propres vues sur nos directions de recherches Le Comite de Programme du Conseil, et ensuite le Conseil en son entier ont delibere sur ces rapports et guide le personnel et l administration en compilant une ebauche finale de projet pour etre pris en consideration par le CGIAR au debut de l annee 1997

Pour l ICLARM cette phase de preparation a fourni une opportunite ideale d organiser une large consultation sur nos futurs programmes de recherche

LICLARM va faire face a son prochain Examen de Programme Externe et de Gestion fin 1998/ debut 1999 En preparation de cet examen par le CGIAR nous avons continue notre programme de revisions externes commandees de façon interne avec une revision complete de la Division Services Societes en avril 1996 Cette revision a fourni au Conseil et a la Direction une assistance appreciable dans l amelioration de la delivrance de services efficaces effectifs et bien orientes vers l objectif a atteindre

Le CGIAR a celebre son 25eme Anniversaire en 1996 avec une journee speciale pendant la Semaine des Centres Internationaux (ICW) a Washington en octobre Plusieurs fondateurs et anciens presidents du CGIAR ont rejoint la celebration Les centres ont presente leurs dernieres decouvertes durant l ICW 1996 LICLARM a fait sa presentation lors de la session regionale pour l Asie

Relations avec les Donateurs

Beaucoup de donateurs gouvernementaux continuent de faire face aux contraintes financieres en 1996 en raison de ce que leurs gouvernements donnent moins de priorite a l assistance au developpement a l etranger Cela a affecte leur capacite a fournir une assistance complementaire aux centres CGIAR LICLARM a maintenu un programme actif de contact avec les donateurs et a accueilli les visites de nombreux representants de donateurs Depuis que le Comite de Conseil Technique a tenu sa reunion en mars dans notre institut associe, l Institut International pour la Recherche sur le Riz a Los Baños et en raison de la tenue de la Reunion de Mi Exercice dans la region Asie (Indonesie) l ICLARM s est rejoui des nombreuses visites de suivi des donateurs

LICLARM a accueilli de nouveaux donateurs de projets en 1996 quand l Agence Suedoise Internationale de Developpement (SIDA) et la Fondation MacArthur des Etats Unis sont devenus des soutiens financiers

Appendix A: Introduction in French

Importance Juridique

En janvier 1996 l ICLARM a accueilli la participation de l Australie a notre Accord International, signe par les gouvernements des Philippines, du Danemark, de Malawi et du Vietnam en 1993

En octobre nous avons apprecie le vote par le Senat du Gouvernement des Philippines de la Decision Senatoriale N° 62 signalant l entree en vigueur de l accord principal entre le Gouvernement et l ICLARM A la suite de l adoption de cette decision l ICLARM s est efforce d assurer tous les arrangements formels necessaires a l etablissement d une gamme d immunites et de privileges telle que specifie dans l accord principal Ces accords doivent etre completes au milieu de l annee 1997

Gestion

Les depenses de fonctionnement de l annee 1996 etaient de 9,231 millions US$ en augmentation de 22% par rapport au budget final de 1995 Pour les revenus, les donateurs principaux ont ete comptabilises pour 62% des revus totaux (5 762 millions US$), bien que 1,268 US$ de ceux ci soient encore a recevoir a la fin de l annee 1996 Les fonds viennent de 42 sources de donateurs dont 14 etaient des donateurs principaux

En decembre 1996 l ICLARM employait 227 personnes comprenant 152 aux Philippines 51 au Centre d Aquaculture Côtiere des Iles Solomon, 8 a Malawi, 14 au Bangladesh et une en France et au Danemark De ce personnel 27 personnes ont ete recrutees au plan international et les autres ont ete recrutees localement ou regionalement dans les sites differents de l ICLARM

Une nouvelle structure organisationnelle

En janvier 1996 l ICLARM a introduit un nouveau programme et une nouvelle structure organisationnelle developpes a travers une consultation du personnel en 1995 et approuves par le Conseil (voir diagramme page 69) De nouvelles positions dirigeantes ont ete creees, a savoir un Directeur General Adjoint aux Programmes un Directeur des Relations Internationales et un Administrateur charge des Relations Exterieures Ces positions, en plus de la nouvelle position de Directeur General Adjoint aux Services Societes ont ete occupees en 1996 par

Dr Peter Gardiner Directeur General Adjoint (Programmes) auparavant de l Institut International de Recherche sur le Cheptel

Dr Modadugu V Gupta, Charge des Relations Internationales auparavant en charge du Centre ICLARM du Bangladesh

Madame Susan Bonetto Directeur Adjoint aux Services de Societe auparavant consultant en gestion des Etats Unis d Amerique et

Dr Marian Fuchs Carsch (consultant) Chargee des Relations Exterieures auparavant de l Institut International de Gestion de l Irrigation

Appendix A: Introduction in French

Une reunion de preparation du programme s est tenue en fevrier pour apporter plus de precisions a la structure du programme Le developpement ulterieur de ces nouveaux programmes et des liens entre eux a ete continue tout au long de l annee et doit se continuer avec le nouveau projet a Moyen Terme

Recherche d un lieu pour le siege central

Durant l annee 1996 l ICLARM a poursuivi des negociations avec l Autorite de la Metropole de Subic Bay (SBMA) pour un lieu adequat pour son siege a Subic Bay a 120 kilometres a l Ouest de Manille Vers le milieu de l annee, la perspective etait prometteuse Une equipe de consultants du Danemark, du Royaume Uni et de la FAO, a entrepris une mission initiale de conception du projet avec des fonds genereusement fournis par DANIDA Lequipe a visite LICLARM, entrepris une definition des besoins et ensuite inspecte un site potentiel a Subic Bay Le Conseil d Administration a rencontre et tenu des discussions avec le President du SBMA en septembre a Subic Bay

En depit de cette preparation, aucun accord definitif n a pu etre conclu a la fin de l annee Une localisation appropriee du siege continue d etre l un des plus grands besoins de l ICLARM

Sites Exteriorises

Egypte

LICLARM avec le soutien du CGIAR, a decide d accepter l offre du Gouvernement Egyptien d utiliser les installations d Abbassa Les negociations sur l accord avec le pays d accueil sont arrivees a une conclusion a la fin de l annee Par anticipation de cette issue favorable, une preparation du reequipememt de l installation a commence au milieu de l annee 1996 Elle etait dirigee par M Tony Pickett un consultant agricole australien ayant une experience considerable des projets de developpement en Egypte

Du personnel international de haut niveau a ete recrute pour les positions de Directeur General Adjoint pour l Afrique et l Asie de l Ouest de Gestionnaire de l Installation et de Scientifique Principal Tous ces personnels devraient prendre leurs fonctions au debut de 1997

Les Iles Solomon

En 1996 le Centre d Aquaculture Cotiere a commence une nouvelle recherche sur l elevage des concombres des mers tropicales avec des fonds du Centre Australien pour la Recherche Agricole Internationale (ACIAR) et a consacre son infrastructure de base a recevoir un nouveau projet et une nouvelle equipe Le CAC a aussi accueilli en son site un projet d elevage des escargots verts de l Agence Japonaise de Cooperation Internationale (JICA)

Appendix A: Introduction in French

Bangladesh

Le travail a continue sur l aquaculture a petite echelle dans les systemes d elevage avec des fonds de l Agence Americaine pour le Developpement International (USAID) Des etudes en co gestion des organismes dans les eaux interieures est entree dans une nouvelle phase avec le soutien financier de la Fondation Ford Ces deux projets ont implique de nombreux partenaires nationaux parmi les ONG et les agences gouvernementales engagees dans la recherche la gestion et les services annexes

Malawi

La recherche sur l aquaculture agriculture integree a petite echelle a continue a Malawi LICLARM a signe un nouvel accord d accueil de cinq ans avec le Gouvernement de Malawi Des discussions se sont tenues avec les officiels gouvernementaux sur le developpement possible de l activite de l ICLARM a Malawi pour inclure des etudes sur la co gestion des peches sur les pecheries des grands lacs

Caraibes

En 1996 l ICLARM a commence deux projets aux Caraibes tous deux etudiant l impact des zones de mer protegees Lun est conduit avec l Universite des Indes Orientales en Jamaique et finance par la Banque de Developpement Inter Americaine Lautre est conduit dans les Iles Vierges Britanniques en association avec le Departement des Ressources Naturelles et finance par le Departement pour le Developpement International du Royaume Uni Les deux projets sont diriges par le Dr John Munro

Administration

Le Conseil d Administration a tenu deux reunions fructueuses du Conseil et supervise un ensemble de comites d acompagnement Le Conseil a continue de suivre de tres pres la croissance de l ICLARM et de maintenir des liens etroits avec les activites nouvelles du CGIAR Il a eu en vue egalement d evaluer ses propres progres et procedures De nouveaux membres ont ete introduits dans les procedures du Conseil et du CGIAR Des efforts ont ete faits lors de chaque reunion pour fournir des opportunites pour les membres du Conseil de faire connaissance avec le personnel de l ICLARM

Finalement, nous voudrions attirer votre attention sur la couverture mediatique et les points culminants de recherche mis en lumiere dans ce rapport Ceux ci ont ete selectionnes pour donner un idee du milieu dans lequel ICLARM opere et pour faire passer quelque chose du besoin urgent des produits du travail de l ICLARM

John L Dillon
President du Conseil

Meryl J Williams
Directrice Generale

Appendix B: Introduction in Arabic

المقدمـــــــــــة

يسعدنا تقديم هذه المقدمة والمراجعة عن عام ١٩٩٦ حتى يمكننا مواجهة تحديات المطالب العالمية للمعرفة والتكنولوجيا للادارة و الاستعمال الحكيم لمصادر الأحياء المائية

وقد بدأت مؤسسة " إكلارم " برنامج العمل التنظيمي في بداية العام واعتقادا منها بأن محتوى برنامج العمل يمثل حرفية فقط من المعادلة ، لذا فقد عملت أيضا على استحداث سياسة استطلاع المستقبل التي ستبدأ بالكيفية التي نريد بها القيام بعملنا بالاشتراك مع الذين يتفقون معنا في الرأي

مصادر الأحياء المائية

تظل الموضوعات التي لها صلة بمصادر الأحياء المائية وبالأخص التي تعنى بصيد الأسماك وتربية المائيات، ثابتة في جدول أعمال الحكومة، وحقا فان موضوع هذا التقرير السنوي لهو مثار انتباه الإعلام، وهناك مجالين رئيسيين تهتم بهما الحكومة وهما ترابط بيئة تربية الأحياء المائية، وكيفية دعم تربية الأحياء المائية لتكون منتجة ومتساوية في توزيع فوائدها

ازدياد هذا الاهتمام يعنى الإدراك بتحول مساهمة صيد الأسماك لدعم الأمن الغذائي، وقد دأبت موسسة اكلارم على دراسة مفهوم هذا التحول فالأسماك – بعد أن كانت من ارخص مصادر البروتين لفقراء العالم – ارتفع سعرها حتى اصبح مجرون العالم من الأسماك يقع تحت ضغط هائل من مستويات الاستغلال الحالية ، وبالرغم من أن تربية الأحياء المائية تعطى انتاج عالي الربحية، إلا إن فوائدها المباشرة تذهب الى المجموعات ذوى الدخول العالية الا فى حالة استحداث تكنولوجيا خاصة فتتحقق المساواة وتزايد الضغط على البيئة – شاملا البيئة المائية – يزداد الحد من حجم الإنتاج من المصادر الطبيعية مثل المياه والأحياء المتنوعة

وقد عقد مجلس الحفاظ على الموارد الطبيعية المنشق من الاتحاد العالمي للحفاظ على الموارد الطبيعية (والمشار اليه هنا باسم ايكون (IUCN) ورشة عمل عن صيد الأسماك والحفاظ على الموارد الطبيعية مقتطفا -لأول مرة – المشتركين الذين يهتمون بصيد الأسماك للتحاور في موضوعات الحفاظ على البيئة وفى نفس الوقت التحاور على الخلافات التي تتضمن العديد من أنواع السمك التجاري في القوائم الحمراء للأتحاد العلمى للحفاظ على الموارد الطبيعية (IUCN)

وقد دعت الايكون موسسة اكلارم لعقد ورشة عمل عن صيد الأسماك وتنبأت بمرحلة جديدة هائلة في أسلوب العمل لإدارة صيد الأسماك وتوخى الحرص الشديد عند اتخاذ قرارات الادارة

Appendix B: Introduction in Arabic

وقد أشتملت الاحتماعات العبة والسياسية للموتمر العالمي للتنوع البيولوحى على ورش عمل عن المصادر المائية والأحياء المابة المتنوعة, وقامت موسسة اكلارم بالتنظيم والاشتراك في العديد من حلقات العمل هده

وبال دعم تربية الأحياء المائية اهتمام متساو من قبل كل من الحكومة والحبراء المهتمين

و تهتم مؤسسة إكلارم بكيفية حصول الفقراء على الفوائد الموعودة إما كمنتحين أو مستهلكين أما المنتحين فان أبحاثنا تهدف إلي نظام دو فعالية يراعى العلاقة بين الكابنات الحية وبيتها، وهدا النظام يعتمد على الإمكابيات المتاحة وفى مقدور صغار المنتحين (مثل نظام تربية الأحياء المابة ونظام الرراعة المتكامل ورراعة سمك البطليوس العملاق(نوع من المحار) أما المستهلكين فنتقدم منتحات تناسب قدراتهم المالية (مثل سلالات حيدة من سمك البلطي)

وفى كل الحالات فان عمل موسسة إكلارم يركز على نظم أصدقاء البيئة ، هده النظم التي لا تتسبب في مشاكل حسيمة وانما قد تعمل على تحسن البيبة

قمة الأداء

في مواصلة لمهمة لموسسة اكلارم لتحسين مستوى معيشة الفقراء في الدول النامية ، فانه لمن دواعي سروربا أن نقدم هنا انجازات فائقة عديدة التي تمت على يد العاملين بموسسة اكلارم ، وفرق العمل والمساهمين بها في عام ١٩٩٦، ومن هولاء الذين نود القاء الضوء عليهم الفريق الذي قام بعمل قاعدة بيانات عن السمك ٩٦ ، والاستحداث السنوي التالي لهذه الاسطوانة المدمجة (دكتور ريبر فرور – دانيال باولى) وكل الذين ساهموا في عمل قاعدة بيانات عن السمك في موسسة اكلارم ، وأكثر من مائة وكالة من أنحاء العالم ساهمت في هذا العمل

وباستمرار نمو مضمون وتصميم هذه القاعدة تصبح قاعدة للمعرفة ، وهى أول مخزن للمعرفة في العالم عن المعلومات الموجودة عن الأسماك ، ومن المتوقع أن يتزايد دعمها أكثر في عام ١٩٩٧ حيث أنها أصبحت العنصر الجوهري في معظم مصادر صيد الأسماك والتدريب الدولي لإدارة التنوع المائي البيولوحى، في الدول الإفريقية والكاريبي والباسفيك والتي تدعم من قبل الاتحاد الاوروبي ويبعد عن طريق المركز الدولي للأحياء والموارد المائية (اكلارم) وشركاؤها الإقليميين

وهناك قاعدة أخرى للمعرفة وهى قاعدة عالمية تعد انجاز جدير بالملاحظة – فريق قاعدة الحيد البحري الذي يقوده دكتور جون ماكمنوس ويلحق به العديد من المهتمين بالحيد البحري – وقد انتج هذه الفريق الاسطوانة المدمجة

Appendix B: Introduction in Arabic

والمزودة بمعلومات قاعدة الحيد البحري، وقد نشرت في المؤتمر العالمي الثامن للحيد البحري المرحابي الذي أقيم في بنما في يونيو
وتشتمل قاعدة البيانات على معلومات عن أكثر من ٦٠٠ من الحيد البحري وسيتم التوسع في محتويات هذه المعلومات خلال السنوات القليلة القادمة مع إبحار تعطية افضل لمعلومات الحيد البحري الموجودة ، ويعد هذا مصدر خطير للمعلومات لصناع القرار المهتمين باستخدام الحيد البحري الذي يعتمد عليه ملايين من الناس
وقد قام كل من دكتور دانيال باولى ودكتور بورو مارتنسروتو (حاليا في منظمة الأغذية والزراعة "الفاو" وسابقا كمديرين عموم لصيد الأسماك بوزارة الزراعة باندونيسيا)، بالإضافة إلى محرري ومؤلفي فصول كتاب "أسس دراسات التنوع البيولوجى – مصادر الأسماك في غرب إندونيسيا" بعمل علمي مميز بالقاء الضوء على خصائص مصادر صيد الأسماك في إندونيسيا كما قاموا بتطوير وجهة النظر الخاصة بأساسيات التنوع البيولوجى لهذه الخصائص من خلال بيانات بحثية جمعت قبل وبعد تنمية هذه المصادر
وقد قام الدكتور روبرت بومروى ودكتور ريتشارد بولانك (جامعة رود ايسلند- الولايات المتحدة الأمريكية) والآنسة بريندا كاتون بمراجعة مشروعات إدارة المجتمعات القائمة على المصادر الساحلية بالفليبين ، وترجع أهمية هذه المراجعة أنها تبين مدى نجاح هذه المشروعات والعوامل التي تدعم تقدم هذه المشروعات ، وهذه المراجعة ضرورية لأن العالم يتجه نحو مجتمعات قائمة على الأنشطة التي تعتمد على المصادر الطبيعية

وقد قامت اكلارم بنشر سياستها الخاصة بالمساهمة أولا لإيكلارم وثانيا للمجموعة الاستشارية للبحوث الزراعية الدولية (CGIAR)
أما بالنسبة لسياسةاكلارم التي ساهم فى تطويرها بعناية فريق العاملين بالموسسة ومجلس الإدارة خلال العامين الأخيرين فقد أرست هذه السياسة أهداف ومبادى واستراتيجية هذه الموسسة وكان الدكتور/ م جوبتا –مدير العلاقات الدولية بالمركز– هو المسئول عن مباشرة المراحل الأخيرة من هذه السياسة الهامة

وأتيح فريق التدريب لبرنامج قطاع صيد الأسماك بعد اتمام عمله في أغسطس ١٩٩٦ مجموعة من الدراسات التدريبية القائمة على العمل الفعلي وخرمة من المواد العملية وتم هذا عن طريق دراسة عدد من الخلجان في الفليبين عندما قام فريق من المتخصصين بقيادة جيروبيمو سلفستر وليس خارسيس بتطوير وتحسين الطرق التي قاموا بأعدادها لتخرج في النهاية على صورة دراسات ومواد علمية

Appendix B: Introduction in Arabic

وقام الدكتور انطونيو هارت والدكتور جوهان بيل من مركز اكلارم الساحلي لتربية الأحياء المائية بتقديم بحث في المؤتمر العالمي الثاني لصيد الأسماك في برسيبان عن اعادة زراعة التيليبوس المعلاق في الطبيعة ، وما جاء في هذا البحث يفيد بأن برنامج إعادة الزراعة هذا سيكون مجديا فقط في حالة ازدواجه مع قرية تقوم بزراعة التيليبوس (المحار) مع اتخاذ الاحتياطات العلمية لأن حماية صغار التيليبوس ممكنة في أماكن نموه وهذه الأماكن يجب أن تكون تحت المراقبة حتى يمكن الحفاظ على حياة عدد ليس بالقليل في المراحل الأولى من زراعته

وقد قامت وحدة المطبوعات في مؤسسة اكلارم بالعمل الشاق لتحسين كفاءة وأداء الخدمة ، وتقوم هذه الوحدة بإجلاء متأخرات النشر وانشاء نظم جديدة لإدارة المشروعات

المجموعة الاستشارية للبحوث الزراعية الدولية

تم تأسيس لجنتين جديدتين كمساهمين في ١٩٩٦ كجزء من عملية التجديد للمجموعة الاستشارية للبحوث الزراعية الدولية التي بدأت في عام ١٩٩٤ ، وهاتان اللجنتان هما لجنة القطاع الخاص ولجنة المنظمات الغير حكومية (NGO)، وقد قام أعضاء اللجنتين بزيارة موسسة اكلارم لتبادل الآراء في عام ١٩٩٦ ، كما قامت لجنة المنظمات الغير حكومية بمقابلة مجموعة من منظماتنا الغير حكومية بالفلبين للتعاون سويا لمعرفة الأبحاث المشركة والمشروعات التي سيتم التعاون فيها

وقدمت CGIAR أيضا وسيلة جديدة للتمويل في الاجتماع النصف دوري الذي عقد في جاكارتا في مايو (MTM) ، وتكمن هذه الوسيلة في جمع مساهمات البنك الدولي للمراكز (ويبلغ نصيب CGIAR من هذه المساهمات ١٥٪) بالإضافة الى مساهمات الجهات المانحة و تنمية الاحتياطي الموجود في البنك للتمويل في حالات النقص الحطيرة على مدى السنوات القليلة القادمة

ووضع النظام الجديد المسئولية على المراكز لتقدير دخولهم كاساس لمساهمات البنك ويتطلب هذا اتصالات مباشرة اكثر مع كل المانحين الذين ابلغوا البنك الدولي أو اللجنة المالية CGIAR بمساهماتهم مسبقا

ويعتبر الاجتماع النصف دوري لمركز CGIAR حدثا هاما للمركز كما أعلنا واستطاعت CGIAR من خلال هذا الاجتماع الحصول على تأييد قرار مجلس الإدارة بقبول عرض الحكومة المصرية لإمكانية استخدام مركز الأبحاث في قرية العباسة – محافظة الشرقية بجمهورية مصر العربية

Appendix B. Introduction in Arabic

وقد قرر محلس الإدارة استعمال الموقع لعرصيں أساسييں

أولا أن يكوں محور للأبحاث المشتركة لإكلارم ولأنشطة التدريب في مناطق الصحراء العربية الكبرى بقارة أفريقيا -عرب آسيا- وشمال أفريقيا لمعالجة موصوعات سياسة الأمن العدائي و المصادر الإنسانية من حلال الأبحاث المشتركة مع الأطراف الأحرى في المنطقة

وثانيا استعمال الموقع لأبحاث المناطق العليا المحتارة عالميا والمتعلقة بموصوعات مثل التنوع البيولوحي -ادارة المصادر الطبيعية- الحفاظ على الحيات للوراثية - المراقبة والتحسيں - صحة تعدية الأحياء البحرية ، بالإصافة الى موصوعات سياسة صيد الأسماك - تربية الأحياء المائية والاستعمالات الأحرى للمصادر المائية

وأثناء عام ١٩٩٦ كاں على حميع مراكز CGIAR أں يبدءوا تطوير الحطط النصف دورية (MTP) الحاصة بهم لتعطية الفترة من (١٩٩٨ - ٢٠٠٠)، وكاں هدا هو تاني (MTP) بالنسة لإكلارم كعصو في المحموعة الاستشارية للبحوث الزراعية الدولية ، وقد بدأنا بوصع ورقة بحث للنقاش محددين بها الحطوط العامة للحطة وورعت هده الورقة على حوالي ٤٠٠ منتفع في منتصف عام ١٩٩٦ ، وقد تسلمنا احابات مكتوبة بالتفصيل من حوالي ١٢٠ فرد ومنظمة

وفي ستتمر تكونت هيئة علمية من ١١ شخص واحتمعت لمدة تلاثة أيام لمناقشة هده الورقة والإحابات التي وردت، وأيضا لإبداء رأيها في اتحاهات البحث، وقد قامت لحنة البرنامج المفوصة من قبل المحلس تم أعضاء المحلس بالكامل بدراسة التقارير لمساعدة وارشاد العاملين والإدارة لتحميع مسودة نهائية للحطة للنظر فيها من قبل CGIAR في بداية ١٩٩٧

وبالنسة لإكلارم فقد منحتهم مرحلة التحطيط هده فرصة متالية لمناقشة برامج البحث المستقبلية

إں موسسة اكلارم تواحه برنامحها الحارحي الحافل والمراجعة الإدارية في أواحر ١٩٩٨ وأوائل ١٩٩٩ ، وتقوم المحموعة الاستشارية للبحوث الزراعية الدولية CGIAR بالتحضير لهده المراجعة ، لدا فقد استمررنا في برنامج المراجعات الحارجية الدي تقوم به الإدارة داحليا مع المراجعة الشاملة لقسم الحدمات المساهمة في إبريل ١٩٩٦

وقد ساعدت هده المراجعات محلس الإدارة والإدارة مساعدة قيمة لتحسيں الاداء والفاعلية والتأييد الدي نهدف اليه عں طريق دعم هده الحدمات

Appendix B: Introduction in Arabic

احتفلت CGIAR بمرور ٢٥ عاما على إنشاوها بتخصيص يوم خلال أسبوع المراكز العالمي (ICW) بواشنطن في أكتوبر ، وقد حضر الحفل عدد لا بأس به من أوائل المؤسسين ورؤساء مجلس ادارة CGIAR السابقين

وبالنسبة للمراكز فقد قدمت أحدث ما توصلت اليه خلال أسبوع المراكز العالمي لعام ١٩٩٦ (ICW)

قدمت اكلارم بحثها في الجلسة الخاصة بمنطقة آسيا

علاقات الدول المانحة

استمرت العديد من الحكومات المانحة تعاني من ارتباكات مالية خلال عام ١٩٩٦ ، وهذا مرجعه أن الحكومات القومية لا تعطي أولوية لمساعدة التنمية الخارجية ، وأدى هذا الى التأثيرعلى المساعدات الإضافية التي يتم منحها لمراكز المجموعة الاستشارية

أما إكلارم فقد احتفظت ببرنامج نشط للاتصال بالدول المانحة وزارت بريارات العديد من ممثلي هذه الدول

وبعد أن عقدت اللجنة الاستشارية الفنية (TAC) اجتماعها في مارس في موسسة أحد شركائنا وهي المؤسسة الدولية لأبحاث الأرز(IRRI) في لوس بانوس ، وبسبب عقد الاجتماع النصف دوري (MTM) في منطقة آسيا (اندونيسيا) فقد تمتعت اكلارم بزيارات الدول المانحة عقب الاجتماع

وقد رحبت اكلارم بمشروع الدول المانحة الجديد في عام ١٩٩٦ عندما أصبحت الوكالة السويدية الدولية للتنمية وموسسية ماك آرثر الأمريكية من المانحين

الموقف القانوني

في يناير ١٩٩٦ رحبت اكلارم بدخول استراليا في اتفاقيتنا الدولية الموقعة من قبل حكومات الفلبين - الدنمارك - مالوى - فيتنام في عام ١٩٩٣، وفي أكتوبر أسعدنا أن برلمان حكومة الفلبين وافق على القرار البرلماني رقم ٦٢ الذي يقضي بتنفيذ الاتفاقية الرئيسية بين الحكومة وموسسة اكلارم ، وبعد اعتماد هذا القرار سعت إكلارم لتأمين كل الاتفاقيات الرسمية الضرورية لإقرار مجموعة من الحصانات والامتيازات للموسسة كما هو منصوص عليه في اتفاقية المركز الرئيسي ، هذا ومن المتوقع أن تكتمل هذه الإجراءات في منتصف عام ١٩٩٧

الإدارة

كانت مصروفات التشغيل لمؤسسة اكلارم في عام ١٩٩٦ تبلغ ٩,٢٣١ مليون دولار أمريكي ، بواقع زيادة ٢٢/ عن الرقم النهائي لعام ١٩٩٥، وكان العائد من المنحة الاساسية غير المشروطة - ٦٢/ (أي ٥,٧٦٢ مليون دولار

أمريكي) من احمالي العائد- بالرغم من أن هناك ١,٢٦٨ مليون دولار أمريكي مازالت قيد الاستلام في نهاية ١٩٩٦

وتأتي مصادر التمويل من ٤٢ دولة منها ١٤ من هذه الدول منح غير مشروطة ، واعتبارا من ديسمبر ١٩٩٦ قامت اكلارم بتعيين ٢٢١ موظف مقسمين كالآتي ١٤٦ في الفليبين - ٥١ في المركز الساحلي لتربية الأحياء المائية بحرر سليمان - ٨ في مالوى - ١٤ في بنجلاديش - وواحد في كل من فرنسا و الدنمارك ، وقد تم أختيار ٢٧ من هؤلاء دوليا والباقي محليا أو إقليميا بمواقع إكلارم المختلفة

الهيكل التنظيمي الحديد

في يناير ١٩٩٦ قامت اكلارم بتقديم برنامج وهيكل تنظيمي حديد ثم تم تطويرهما من خلال استطلاع الرأي مع العاملين في عام ١٩٩٥ ، وتم اعتماد البرنامج والهيكل التنظيمي من مجلس الإدارة (انظر الرسم ص ٦٩) وفي الهيكل التنظيمي الحديد استحدثت وظائف تنفيذية جديدة منها نائب مدير عام البرامج، مدير العلاقات الدولية، مدير العلاقات الخارجية العامة، وخدمات الموسسة

وقد شغلت هذه المناصب خلال عام ١٩٩٦ بالآتي أسماؤهم

دكتور بيتر هاردبير - نائب المدير العام للبرامج - وكان من قبل يعمل في المؤسسة الدولية لأبحاث الماشية

موداحو في حونتا -مدير العلاقات الدولية- وكان من قبل مسئولا عن مكتب إكلارم بنجلاديش

السيدة/ سوزان بونيتو-مساعد المدير العام- لخدمات الموسسة وكانت من قبل تعمل استشارية ادارة في الولايات المتحدة الأمريكية

ماريان فوش كارش- مدير العلاقات الخارجية (أستشارى)- وكان من قبل يعمل في الموسسة الدولية لإدارة الرى (IIMI)

وعقد اجتماع لتخطيط البرنامج في فبراير لوضع تفصيلات أكثر عن الهيكل التنظيمي للبرنامج ويستمر تطوير هذه البرامج والترابط بينهما خلال العام ومن المتوقع أن يستمر أيضا مع الخطة النصف الدورية

البحث عن موقع للمركز الرئيسي

استمرت المفاوضات مع مسئولي العاصمة لحليج سيوك (SBMA) خلال عام ١٩٩٦ لإيجاد موقع للمركز الرئيسي في خليج سيوك التي تقع ١٢٠ كم غرب مانيلا ، وبحلول منتصف العام كانت الرؤيا منيرة ، حيث قام فريق استشاري من الدنمارك والمملكة المتحدة ومنظمة الأغذية والزراعة الفاو (FAO) باتحاد

الحطة المندية وهى التمويل بسخاء من قبل الوكالة الدنماركية للمساهمة في التنمية الدولية

وقام الفريق بزيارة اكلارم وشرع في تحديد الاحتياجات ثم البحث عن موقع يمكن استعماله في حليج سيونك ، وفى ستمبر اجتمع مجلس الأمناء في حليج سيونك وعقد مناقشات مع الرئيس المسئول لحليج سيونك وقدم له حطاب النوايا

وبالرغم من كل هذه الاستعدادات فلم يتم التوصل إلى اتفاقية نهاية مع مسئولي العاصمة في حليج سيونك حتى نهاية العام

ويظل البحث عن موقع مناسب للمركز الرئيسي من أهم احتياجات موسسة إكلارم

المواقع المتاحة

مصر

قررت اكلارم – بتأييد من المجموعة الاستشارية الدولية للأبحاث الزراعية CGIAR– الأخذ بالعرض المقدم من الحكومة المصرية بأستخدام مركز(موقع) العباسة، وتمت المفاوضات مع البلد المضيفة بنهاية العام ، وللحصول على نتائج مرضية ، بدأ التخطيط لإعادة تحديد الموقع في منتصف عام ١٩٩٦– وتم التنفيذ باشراف السيد/ تونى بيكيت الاستشاري الزراعي الأسترالي الجنسية والذي له خبرة ملموسة فيتنمية المشروعات بمصر وتم تعيين الخبراء الأخذ بالمشروع بوظائف الادارة العليا آلاتية نائب المدير العام لأفريقيا – مدير اداري للموقع – الباحث الرئيسي للمشروع وكان من المتوقع أن يبدأ كل العاملين فى مباشرة وظائفهم ممع بداية عام ١٩٩٧

حرر سليمان

بدأ مركز تربية الأحياء المائية الساحلي (CAC) أبحاث جديدة في عام ١٩٩٦ على تربية جيار البحر (المناطق الاستوائية) بتمويل من المركز الأسترالي للأبحاث الزراعية الدولية (ACIAR) وتوسع في هيكله الأساسي ليشمل المشروع الجديد والعاملين به

ورحب مركز تربية الأحياء المائية الساحلي (CAC) باستضافة مشروع الوكالة اليابانية للتعاون الدولي لتربية القواقع الحمراء

بنجلاديش

استمر العمل على مستوى صغير في نظم الزراعة بتمويل من الوكالة الأمريكية للتنمية الدولية (USAID) ودخلت دراسات التعاون الإداري بين الهيئات الرمائية مرحلة جديدة بتمويل من موسسة فورد ، وشارك في المشروعين عديد

Appendix B: Introduction in Arabic

من الشركاء المحليين ما بين وكالات حكومية ومنظمات غير حكومية حيث شاركوا معا في الأبحاث والإدارة والخدمات الممتدة

مالوى

استمرت الأبحاث على مستوى صغير في التكامل الزراعي وتربية الأحياء المائية في مالوى ، وقد وقعت إكلارم اتفاقية مدتها ٥ سنوات مع حكومة مالوى كملد مضيفة ، كما عقدت مناقشات مع مسئولي الحكومة عن امكانية التوسع في عمل موسسة اكلارم داخل مالوى ليشمل دراسات الإدارة المشتركة لصيد الأسماك بالنسبة لصيد الأسماك في البحيرات الكبيرة

الكاريبي

أقامت اكلارم مشروعين في الكاريبي لدراسة تأثير المحميات البحرية ، ويقعد أحد المشروعين بالتعاون مع جامعة وست انديا في جامايكا ويمول من قبل البنك الأمريكي للتنمية الداخلية ، أما المشروع الثاني فيقع في جزر فيرجين البريطانية بالتعاون مع وزارة المصادر الطبيعية ويمول من وكالة تنمية ما وراء البحار في المملكة المتحدة ، ويدير كلا المشروعين دكتور جون موبرو

الحكومة

قام مجلس الأمناء بعقد اجتماعيين متتاليين وأشرف على عدة اجتماعات للجان المصاحبة ، واستمر في مراقبة تطور موسسة اكلارم عن قرب ليحتفظ بالرابطة الوثيقة مع تطورات المجموعة الاستشارية

ورأى المجلس أنه كي يكون قادرا على تقييم تقدمه وقوانينه ، فقد ادخل أعضاء جدد في المجلس وجدد في نهج عمل المجموعة الاستشارية ، وبدل المساعي في كل اجتماع لمنح الفرص لأعضاء المجلس حتى يتعرفوا على العاملين موسسة اكلارم

وفي النهاية نود أن نلفت أنظاركم الى التغطية الإعلامية والقاء الضوء على أبحاث موسسة إكلارم المشار اليها في هذا التقرير ، وقد تم اختيار هذه الأبحاث لإعطاء فكرة عن البيئة التي تعمل اكلارم من خلالها ، والقاء الضوء على المطالب الملحة لنتاج عمل مركز اكلارم

جون ديلون
رئيس مجلس الإدارة

ميريل وليامز
المدير العام

* يرجى الإطلاع على "الثورات الزرقاء" الذي أعيد طبعه