

PN-AAL-157

TRIP REPORT

HAWAII, JAPAN AND SOUTHEAST ASIA

MAY 14 - JUNE 28, 1980

BY: Kenneth W. Osborn, Fisheries Advisor, AID/DS/AGR/F

PURPOSES: (1) Attend the 19th Session of the Indo-Pacific Fisheries Commission and Symposium on the Development and Management of Small-Scale Fisheries. (2) Attend "Giant Prawn 1980" an International Symposium on Macrobrachium culture. (3) Confer with scientists, managers and administrators on fisheries, environmental and coastal zone management projects and activities in Southeast Asia.

PRINCIPAL CONTACTS:

Nineteenth Session of the Indo-Pacific Fisheries Commission and Symposium on the Development and Management of Small-Scale Fisheries - Kyoto, Japan

See Attachment III

"Giant Prawn 1980"

See Attachment V

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RESULTS:

(1) Nineteenth Session of the Indo-Pacific Fisheries Commission and Symposium on the Development and Management of Small Scale Fisheries

The 19th Session and Symposium were held at the Kyoto International Conference Center Kyoto, Japan from 21-30 May and were attended by representatives from 14 member nations, observers from 14 other nations and from 6 international organizations. Attachment II is the reporting cable (Tokyo 9873) on the Session and Symposium.

The recommendations resulting from the Symposium (Attachment III) provide some very useful "food for thought" relevant to developing an AID strategy for meeting fisheries development and management needs in LDC's.

(2) Giant Prawn 1980

This International Conference on the Culture of Macrobrachium (freshwater shrimp), was held at the Erawan Hotel, Bangkok, Thailand from June 15-21 and was attended by 400 participants from 35 countries, making it one of the largest single-species international aquaculture meetings ever held. A total of 56 papers were presented on the technical and commercial aspects of fresh-water shrimp farming, interspersed with discussion sessions. The concluding discussion session developed into an extremely lively forum for scientists, administrators, commercial shrimp farmers and economists to pursue in depth all aspects of practical freshwater shrimp farming. The potential for freshwater shrimp culture in LDC's was concluded to be very good. Mr. Ariya Sidthimunka, Deputy Director General of the Department of Fisheries of the Royal Thai Government in his remarks opening the conference, pointed out that Thailand sees a very high potential in shrimp culture for meeting its development goals. He further addressed the problem of concern to some donor governments that shrimp is a high value food that does not benefit the poor directly by pointing out that freshwater shrimp culture is highly labor intensive, thus providing high levels of employment to the poorest of the poor, contributing to improvement of their social conditions, as well as providing an important source of foreign exchange revenue for Thailand to assist it in other areas of its development aimed at raising the standard of living of its poor. Attachment IV is a copy of the report of the conference.

(3) Other

- a. Discussions in Honolulu, Manila and Bangkok with individuals in various organizations and agencies with activities or interests in fisheries, the marine environment and coastal zone management were extremely useful in up-dating my knowledge and understanding of new directions and developments in these areas in Asia and the Pacific. They were also useful in providing new and up-dated information on future conferences, meetings and sessions in these areas. In follow-up discussions with Dr. Valencia and other staff of the East West Center in Honolulu, I pointed out that while we were still interested in a definition study of fisheries and marine environment efforts in Southeast Asia (see Trip Report, Osborn, Southeast Asia and Hawaii November 19 - December 14, 1980), anything tangible in this area would have to be held in abeyance for the foreseeable future due to the present funding and budgetary situation.
- b. I spent several days with OAD Staff, USAID Manila and staff of the Philippine Bureau of Fisheries and Aquatic Resources in reviewing fisheries activities in the Philippines. This included a site visit to the Freshwater Aquaculture Center at the Central Luzon State University, Munoz, Nueva Ecija, where the Freshwater Fisheries Development project (492-322) is just getting underway with Texas A & M University providing the technical assistance. A new Project being developed by USAID/Manila, Coastal Watershed Ecosystem Development (492-0357) is extremely interesting, in that it is the first mission project on this subject I am aware of being developed along interdisciplinary lines as directed by Section 118 of the Foreign Assistance Act (and a follow on from the 1979 "Environment and Natural Resources Management in Developing Countries" report to Congress and subsequent country Draft Environmental Reports). This project will address forestry, agriculture and fisheries in all their inter-related aspects and the employment, economic and environmental factors related to coastal watershed management. It is strongly supported by the Philippine Government and USAID/Manila hopes to submit the PID for the project to AID/W in July or August. In discussions with OAD staff I expressed the strong interest in several quarters of AID/W in this type of project (DS/AG/F - Coastal Ecosystem Conservation, DS/ST - Coastal Zone Management (936-5518) and ASIA/TR/STEP), and stated we would do whatever we could to assist in the further development of this project once the PID is submitted.
- c. In Kyoto and Bangkok, I was approached by staff of the Fisheries Departments of Sri Lanka and Bangladesh in attendance at those meetings, expressing their strong interest in receiving AID assistance in fishery development projects in their countries and inquiring about AID/W's interest. In all cases, I explained that while we had strong interest and could in fact provide short term technical assistance in identifying and designing such projects their first point of contact for such requests should be the USAID's in their respective countries. Several individuals indicated they intended to follow through on this.

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Attachment I

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ACTION OES-09

FISHERIES PARTICULARLY IN PREPARATION OF PILOT
DEMONSTRATION PROJECTS.

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PASS TO OES/OFA

PASS TO DOC/HOAA/NMFS:CBLONDIN

PASS TO AID/DS/AGR:CBREITENBACK

E. O. 12065: N/A
TAGS: EFIS, FAO
SUBJECT: INDO-PACIFIC FISHERIES COMMISSION
MEETING IN KYOTO, JAPAN

1. SUMMARY. THE INDO-PACIFIC FISHERIES
COMMISSION (IPFC) HELD ITS 19TH SESSION IN KYOTO,
JAPAN, 21-30 MAY, 1980. THE SESSION WAS ATTENDED

BY REPRESENTATIVES FROM 14 MEMBER NATIONS,
OBSERVERS FROM 14 OTHER NATIONS AND FROM 6
INTERNATIONAL ORGANIZATION. THE FIRST THREE
DAYS OF THE SESSION CONSISTED OF A SYMPOSIUM
ON THE DEVELOPMENT AND MANAGEMENT OF SMALL-SCALE
FISHERIES. U.S. DELEGATES TO IPFC CONSISTED OF
J. STORER, OES/STATE, R. SHOHURA, NMFS/COMM,
AND K. OSBORN, AID. A MAJOR ITEM OF THE SESSION
WAS ITS CREATION OF A COMMITTEE WITHIN THE
COMMISSION THAT WOULD DEAL WITH THE DEVELOPMENT
AND MANAGEMENT OF FISHING RESOURCES EXCEPT TUNA
WITHIN THE REGION OF THE SOUTH CHINA SEA.

2. THE SYMPOSIUM ON THE DEVELOPMENT AND
MANAGEMENT OF SMALL-SCALE FISHERIES ATTRACTED
REPRESENTATION FROM 21 INTERNATIONAL AND NATIONAL
ORGANIZATIONS IN ADDITION TO THOSE NOTED ABOVE
AND CONSISTED OF 4 SESSIONS:

A. REVIEW OF THE STATUS OF SMALL-SCALE FISHERIES
AND ONGOING PROGRAMS AND PROJECTS;

B. PRIORITIES FOR FUTURE ACTION, WITH TWO SUB-
PARTS, SOCIO-ECONOMIC FACTORS AND TECHNICAL
CONSIDERATIONS, INSTITUTIONAL ASPECTS AND POLICY
PLANNING;

C. THE ROLE OF FAO AND OTHER DEVELOPMENT AND
FINANCING AGENCIES; AND

D. RECOMMENDATIONS

EXTENSIVE DOCUMENTATION INCLUDED COUNTRY EXPERIENCE
PAPER FROM MEMBER NATIONS OF THE REGION AND OTHER
PAPERS PREPARED BY FAO SECRETARIAT AND EXPERTS.
RECOMMENDATIONS TO NATIONAL GOVERNMENTS DID NOT
INCLUDE STARTLING NEW INSIGHTS BUT DO EMPHASIZE
NEED FOR RESOLVING CONFLICTS IN RESOURCE USE
BETWEEN SMALL AND LARGE SCALE FISHING AS WELL
AS NEED FOR STUDY OF ECONOMIC ASPECTS IN VIEW
OF RISING FUEL AND OTHER COSTS AND RESULTING
IMPACT UPON CONSUMERS. FAO WAS CALLED UPON TO
INCREASE ITS ASSISTANCE IN SUPPORT OF SMALL SCALE

3. A MAJOR SUBSTANTIVE ITEMS ON THE AGENDA OF
THE IPFC SESSION, CONCERNED FAO'S PROGRAM OF
ASSISTANCE IN DEVELOPMENT AND MANAGEMENT OF
EXTENDED FISHERY ZONES. THE SECRETARIAT
EXPLAINED THAT FAO'S ROLE TO LDC'S IN THE REGION
WOULD INVOLVE RESOURCE SURVEYS, TRAINING
ASSISTANCE IN FISH PLANNING, STATISTICS AND OTHER
ELEMENTS THAT WOULD ENABLE COUNTRIES TO DEVELOP
AND MANAGE FISHERIES WITHIN THEIR FISHERIES ZONES.
WHILE SOME OF THIS WOULD BE DIRECTED TO NATIONAL
EFFORTS, FAO WILL ALSO CONTINUE TO EMPHASIZE
REGIONAL EFFORTS, INCLUDING THE SOUTH CHINA SEA,
BAY OF BENGAL, AND SOUTH PACIFIC. THE COMMISSION
INDICATED ITS SUPPORT FOR THE PROGRAMS OF FAO,
PARTICULARLY ENDORSING THE REGIONAL APPROACH.
ADG, LUCAS REPORTED THAT OF US\$ 35-40 MILLION
REQUIRED DURING YEAR 1980-83, FOR DVERALL GLOBAL
PROGRAMS OF ASSISTANCE, APPROXIMATELY ONE HALF IS
IN HAND, ANOTHER ONE FOURTH IS UNDER DISCUSSION WITH
DONORS AND THE REMAINING ONE FOURTH OF FUNDING IS
YET TO BE FOUND. IN DISCUSSING FAO ACTIVITIES
IN THE SOUTH PACIFIC, LUCAS REPORTED THAT PRESENT
FUNDING FOR UNDP ALLOWS FOR TWO FISHERIES POSTS IN
THAT REGION AND THAT FUTURE UNDP FUNDING WOULD
HOPEFULLY RISE TO ONE MILLION DOLLARS A YEAR.

4. THE COMMISSION ENDORSED THE PROPOSAL THAT A
SUBCOMMITTEE BE CREATED WITHIN THE COMMISSION
TO DEAL WITH THE ISSUE OF DEVELOPMENT AND MANAGEMENT

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FISHERIES AND A NEW PROJECT TO BE FUNDED BY NORWAY WHICH WOULD ESTABLISH FOR THE REGION A FISHERIES MARKETING INFORMATION AND ADVISORY SERVICE. MALAYSIA AND INDONESIA WERE ELECTED AS CHAIRMAN AND VICE-CHAIRMAN RESPECTIVELY OF THE COMMISSION FOR THE NEXT TWO YEAR PERIOD. NEPAL AND THE USA WERE ELECTED TO SERVE ON THE EXECUTIVE COMMITTEE.

DRAFTED AND CLEARED: STORER, SHIMURA & OSBORN
HANSFIELD

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OF FISHERY RESOURCES IN THE SOUTH CHINA SEA AREA. THIS IS IN LINE WITH A GENERAL FAO FISHERY EFFORT TO ESTABLISH SMALLER AND NATURAL GEOGRAPHICAL UNITS WHICH WILL LEND THEMSELVES TO MORE EFFECTIVE PROGRAMS. THE COMMITTEE, WITH MEMBERSHIP COMPOSED OF THE COASTAL STATES IN THE REGION, WOULD LIMIT ITS FUNCTIONS TO WATERS IN WHICH COASTAL STATES CLAIM FISHERIES JURISDICTION AND WOULD NOT, REPEAT NOT, HAVE MANAGEMENT RESPONSIBILITIES FOR TUNA. THE COMMITTEE AS A SUBSIDIARY BODY OF THE COMMISSION WOULD REPORT BACK TO THE COMMISSION.

5. IN DISCUSSING RELATIONS WITH OTHER FISHERY BODIES, THE U.S. AND OTHER DELEGATIONS EXPRESSED CONCERN WITH THE INCREASING PROLIFERATION OF ORGANIZATIONS DEALING WITH FISHERIES IN THE IPFC REGION, AS WELL AS POSSIBLE OVERLAPPING OF FUNCTIONS. IN THAT CONNECTION, THE COMMISSION APPROVED RECOMMENDATION THAT INDIAN OCEAN FISHERY COMMISSION (IOFC) AND THE IPFC HAVE JOINT MEETINGS IN 1982 IN ORDER THAT COMMON PROBLEMS COULD BE DISCUSSED TOGETHER. IF SUCH A JOINT MEETING IS SUCCESSFUL, FURTHER COOPERATIVE STEPS BETWEEN THE TWO COMMISSIONS MAY BE CONSIDERED.

6. TUNA MATTERS ARE ALREADY CONSIDERED JOINTLY BY COMMITTEES OF THE IOFC AND IPFC AND AT THIS SESSION OF THE IPFC, ACTING UPON RECOMMENDATIONS OF THE TUNA COMMITTEES, THE DELEGATES URGED FAO TO SEEK FUNDING ENABLING ADDITION OF A TUNA SCIENTIST TO THE FAO/UNOP PROJECT FOR TUNA IN THE INDIAN AND PACIFIC OCEANS IN ORDER TO REVIEW RESOURCE RESEARCH NEEDS AND TO WORK WITH THE TUNA COMMITTEES IN DEVELOPING A DETAILED PROGRAM OF RESEARCH FOR WHICH FAO SHOULD SEEK THE FUNDING. IT WAS ALSO RECOMMENDED THAT THE PROJECT SHOULD PREPARE A FIELD MANUAL FOR THE REGION CONCERNING COLLECTION OF TUNA STATISTICS.

7. IN DISCUSSING THE SOUTH CHINA SEA FISHERIES DEVELOPMENT AND COORDINATING PROGRAM (SCSP), IT WAS NOTED THAT IT IS FUNDED FOR 1980-81 AND PROVISIONALLY APPROVED IN PRINCIPLE BY THE UNDP FOR AN ADDITIONAL THREE YEARS. ALL PARTICIPATING COUNTRIES PRESENT STRONGLY ENDORSED THE PHASE III PROJECT DOCUMENT AND IT IS CLEAR THAT THE PROJECT AND THE WORK OF ITS STAFF ARE HIGHLY APPRECIATED IN THE REGION.

8. OTHER TOPICS ON THE AGENDA INCLUDED MANAGEMENT PROBLEMS FOR SHRIMP, AQUACULTURE AND INLAND

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Session IV RECOMMENDATIONS

Discussion Leader: Tengku Ubaidillah bin
Abdul Kadir

Rapporteur: E.H. Nichols

Following the conclusions reached in discussions held during previous sessions the Symposium agreed that the following recommendations be forwarded for consideration by the Commission:

To Member Governments

1. The prime objective of national policy for small-scale fisheries development should be to bring the sector at least to par with other economic activity; the sector is presently disadvantaged. Government involvement must be greatest at the lowest levels and among the most depressed of the sector if those concerned are to be raised to a nationally acceptable level of income and quality of life.

2. Although it is necessary to protect the interests of small producers small-scale fisheries must not be isolated from large-scale sectors in the context of planning. There is a need to integrate fisheries development with general social and economic development. Particular attention should be paid to consumer interests in view of increasingly felt resource constraints.

3. Attention is drawn to the value of census data and current statistics, and the prompt and adequate analysis thereof for planning purposes.

4. There is an urgent need for measures to resolve conflicts within the small-scale sector and between this sector and the larger, commercial fisheries. It is particularly important that governments establish close contacts with these conflicting parties to resolve differences and to increase the awareness of the resource constraints and sound ecological practices. In this manner appropriate and mutually acceptable fishing rights and legislation for equitable and rational development can be achieved.

5. In certain areas women have an important role in economic activities, but a potential remains for increased participation in all sub-sectors and at all levels. Particular attention should be given to women's organisations and to education.

6. Development strategy calls for an integrated approach, there are no "standard" solutions and programmes and projects must be developed on a case by case basis. Closer coordination is called for between administration and research, and within different agencies and sciences. The involvement of the members of the target group, i.e., fishermen and their families, is a prerequisite to ultimate success. It is also essential that cognizance is taken of the genuinely felt needs of the community.

7. Although the most important, higher income is not the only factor that leads to betterment of small-scale fishery communities; and therefore social infrastructure, services and amenities should be provided on a greater scale than in the past.

8. The lack of credit is a serious constraint in small-scale fishery development. Credit facilities must be adjusted and expanded to ensure that the need, and as many as possible of them, are benefited.

9. With regard to fish marketing Member Governments should take note of the very many and common failures of cooperative organizations which were put forward in the symposium. The reasons for failures must be recognized, and new avenues explored to form associations, in order to increase the small producers' share of the profit margins.

10. In view of problems arising from increasing costs of fossil fuel governments should re-examine technological inputs into the industry, both through craft and engine design and in the post-harvest sphere, i.e., processing and utilization, to reduce wastage.

11. Within the sphere of small-scale aquaculture development Member Governments are invited to concentrate - in the long-term, on selective breeding, genetics, etc.; in the medium term, on seed production; and in the short-term, on improvement of extension and technical services.

To FAO and Other Development/Funding Agencies

1. Funds available for small-scale fisheries development in member countries are inadequate in relation to needs. Funding agencies are requested to consider relaxation of rules and criteria to take into account the specific requirements of small-scale fisheries and individual countries, and to consider streamlining procedures to shorten the time span between identification and project implementation.

2. FAO is requested to increase assistance to member countries in the preparation of viable investment and development projects to attract more available funds. This should be done through preparation missions, with components of in-service training of national expertise; through the provision of guideline manuals for use by Member Governments on the methodology and specific requirements as to criteria, rules and procedures asked for by funding agencies; and through the preparation of a handbook outlining guidelines for the integrated development of fisheries, including a "checklist" to obviate oversights in the planning process."

3. FAO and other development agencies are requested to assist governments in preparing and funding integrated pilot projects to develop and demonstrate approaches and methodology to pave the way for wider application. International banks are also requested to favorably consider requests for pilot projects as a lead-in investment follow-up. Such pilot projects should incorporate features in accordance with the symposium's recommendations to Member Governments.

4. In order to promote a more rational exploitation of fishery resources accessible to small-scale fisheries, pilot projects in the field of fishing gear and methods aimed at reducing catches of trash fish, protection of nursery grounds, and selective catch composition, should be supported.

5. Although countries may lack expertise in certain fields, small-scale fishery skills are available in the region. Greater use should be made of such skills by agencies which would also facilitate inter-country cooperation.

6. The attention of FAO and other agencies is drawn to the specific needs and requirements of individual countries as brought out in background papers and discussions.

7. FAO should, primarily through its sub-regional programmes, take follow-up action in assisting Member Governments to implement recommendations arising from this Symposium. Such assistance would be in the form of organising and funding selected activities including specialised consultations and workshops.

LIST OF DELEGATES AND OBSERVERS

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GIANT PRAWN 1980

INTERNATIONAL CONFERENCE ON MACROBRACHIUM FARMING

A REPORT ON A SUCCESSFUL MEETING IN THAILAND

The purpose of this report is to provide a record of the meeting for its hosts and its sponsors, to form a press release, especially for the aquacultural press, and to provide information for them any individuals who are currently writing to the organisers requesting details of the conference.

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Giant Prawn 1980, an international conference on Macrobrachium (freshwater prawn) farming, was held at the Erawan Hotel, Bangkok, from June 15-21, 1980. It was hosted by the Department of Fisheries, Ministry of Agriculture and Cooperatives, Royal Thai Government, and co-sponsored by the International Foundation for Science, the FAO/UNDP South China Sea Fisheries Development and Coordinating Programme, the FAO/UNDP Programme for Expansion of Freshwater Prawn Farming in Thailand, the FAO Regional Office for Asia and the Pacific, and the Rockefeller Foundation.

The organising committee was chaired by Ariya Sidthimunka, Deputy Director General of the Department of Fisheries of the Royal Thai Government and convened by Michael New, currently contracted to FAO as a Senior Fisheries Biologist (Aquaculture) in Thailand. Although two well attended national meetings on freshwater prawn farming were held in the USA in 1974 and 1976, the only previous international meeting devoted solely to the culture of Macrobrachium reosenbergii had been held in Vietnam in 1975. Attendance at the latter meeting had not been large; the organisers of Giant Prawn 1980, knowing of the increased interest in freshwater prawn farming since 1975, were however confident that about 70 people would come to Bangkok in 1980 to share their experience in this field. The scale of interest in this topic and the success of the conference can be gauged by the fact that 163 participants registered for the meeting, of which 158, together with over 10 spouses, actually attended. There were also a number of non-registered participants. The language of the meeting was English but a special 'Thai-speaking day' was included in the programme. Over 200 additional participants attended that part of the meeting, making Giant Prawn 1980 one of the largest single-species international aquaculture meeting ever held, with a total attendance of approximately 400.

The 163 participants registered for the whole meeting came from 35 countries (see Appendix for detailed breakdown), mostly from the equatorial belt. Since it has been Royal Thai Government policy for several years now to encourage the growth of freshwater prawn farming in Thailand, a policy supported by FAO through the establishment of a joint Royal Thai Government/FAO three-year Programme for the Expansion of Freshwater Prawn Farming in 1978, the organisers were particularly pleased that so many people attended the 'Thai-speaking day'. The extra participants on this day, numbering over 200, came from all over Thailand, some travelling more than 800 km each way. They came from all stratas of society, ranging from farmers with only a few hundred square meters of ponds to representatives from the biggest freshwater prawn farm in Thailand, with an area of 40 hectares. These participants included existing farmers, rural people interested in starting new Macrobrachium farms, government and university scientists, students, entrepreneurs, and representatives from large commercial companies and banks.

The objectives of the meeting were varied. It was intended to be an opportunity for research workers in various countries, whose work on Macrobrachium is being funded by the International Foundation for Science, to meet and discuss their current and future research programmes. It was a chance for the Thai biologists, principally from the Chacheongsao and Songkhla Fisheries Stations of the Department of Fisheries, to exchange their experience with other biologists working with this species internationally. The meeting was an opportunity for aquaculturalists in other countries to appreciate the scale of involvement now and the enthusiasm for expanding freshwater prawn farming in the future in Thailand. Giant Prawn 1980 encouraged extension work in this field in Thailand. Perhaps most of all, the meeting gathered together not just government and university research, development and extension scientists, but also scientists and administrators from commercial firms around the world and many participants remarked that this was a rare opportunity for free exchange of information at every level. Among those participants from the commercial sector were representatives from large farms and hatcheries in Thailand, Hawaii, Honduras, Sri Lanka, Mauritius and Martinique. Representatives from international organisations, including FAO and US AID, and from banking circles, including the Development Bank of the Philippines and the Bangkok Bank, joined distinguished scientists, and administrators (including the Director of Aquaculture for Mexico) from every continent except Antarctica.

The programme began with an Opening Ceremony. Following a welcoming address by Commander Swarnng Chareonphol, Director of the Department of Fisheries, which hosted the meeting, Giant Prawn 1980 was opened by the Deputy Prime Minister of Thailand, Major General Pramarn Adireksarn. Major General Pramarn's opening address was followed by welcoming addresses from representatives of the principal

co-sponsors. Dr. Dioreasco Umali, Assistant Director General and Regional Representative, FAO Regional Office for Asia and the Pacific, also representing the FAO/UNDP South China Sea Fisheries Development and Coordinating Programme and the FAO/UNDP Programme for the Expansion of Freshwater Prawn Farming in Thailand, spoke first. The International Foundation for Science were represented by Dr. Sangar Sabhasri, General Secretary of the National Research Council of Thailand. The final welcoming address was given by Dr. William Young, Foundation Representative for Thailand, on behalf of the Rockefeller Foundation. A message from Dr. Shao-wen Ling, one of the 'fathers' of freshwater prawn farming was read by Michael New. Dr. Ling had been invited by the organisers to attend Giant Prawn 1980 as a guest but was unfortunately unable to do so. The other three invited participants in the meeting, Takuji Fujimura, whose name is synonymous with the expansion of freshwater prawn farming world-wide, and Drs. Paul Sandifer and Ken Johnson, who have contributed much to research knowledge and extension in Macrobrachium farming, attended and contributed to the whole of the conference.

The English-speaking part of the meeting was divided into four research sessions, four technical sessions, a discussion session devoted to research, and a long practical discussion period on the final day. The Thai-speaking day covered every aspect of Macrobrachium culture in an informal way, with lively participation from the floor. The first research session concerned larval production and was chaired by Dr. Paul Sandifer, from the Marine Resources Research Institute, Charleston, South Carolina, USA, and contained nine papers from Belgium, Colombia, India, Indonesia, Malaysia, the Philippines, and Thailand. This session was followed by one on nutrition and grow-out, chaired by Dr. Piamsak Menasveta, from the Department of Marine Science of Chulalongkorn University, Bangkok, Thailand. Four papers were presented in this session by authors from Hawaii, Sri Lanka, Thailand and mainland USA. The third research session continued the theme of grow-out and was chaired by Dr. Ken Johnson, from the Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas, USA. This session's seven papers were authored from Indonesia, the Philippines, Thailand, USA and Western Samoa. A research session on general topics followed, which was chaired by Vanich Varikul, Director of the National Inland Fisheries Institute, Bangkok, Bangkok, Thailand. This session's seven papers came from scientists in Colombia, India, the Philippines, Thailand, USA, and Venezuela. The research discussion session stimulated two hours of lively exchange on the needs for future work on Macrobrachium and of questions from existing and potential farmers of freshwater prawns. An invited panel for this session was chaired by Dr. Lee Chan Lui, from the MARDI Fisheries Station at Malacca, Malaysia.

The first of the technical and experience sessions was chaired by Dr. Herminio Rabanal, Senior Aquaculture Development Officer, FAO/UNDP South China Sea Fisheries Development and Coordinating Programme, Manila, Philippines, and was devoted to hatchery operation. Five papers were presented, from Indonesia,

Malaysia, and Thailand. This session was followed by one on practical (grow-out) farming chaired by Dr. Deb Menasveta, Secretary General of the Southeast Asian Fisheries Development Centre (SEAFDEC), Bangkok, Thailand, which contained seven papers from Burma, Indonesia, Thailand, USA, and a joint paper from Colombia and Venezuela. This session completed the second of the four formal days of the conference.

The Thai-speaking day of Giant Prawn 1980 was chaired by Pairojana Lipikorn, Director of the Inland Fisheries Division of the Department of Fisheries, Ministry of Agriculture and Cooperatives, Bangkok, Thailand. The morning was devoted to hatchery management and the afternoon to practical farming. This day was, in effect, a concentrated course in Macrobrachium farming. Each topic was introduced by Somsuk Singholka, Chief of the Chacheongsao Fisheries Station, Bangpagong, Chacheongsao, Thailand, whose biologists have been primarily responsible for the expansion of freshwater prawn farming in this country. The contributions from owners and managers of large and small farms were extensive and included slide shows in many cases. Questions were many and discussions most lively and those non-Thais present (the thirty places available for foreigners, which were served with interesting and sometimes humorous summary translations from Oopatham Pawaputhanon and Manu Potaros, of the Department of Fisheries, were always full) were most impressed by the enthusiasm and level of participation from the floor of the meeting. It was particularly encouraging to hear so many commercial operators share their experience. Not only Thai farmers contributed in this way, for much discussion was stimulated by a slide show given by Dr. Ronald Wulff about the work of the General Mills subsidiary in Honduras with Macrobrachium rosenbergii, an event which was enthusiastically repeated on the following (English speaking) day. Those who have been involved in the stimulation of freshwater prawn farming in Thailand, both from government and FAO circles, were particularly encouraged and impressed by the very large attendance on the Thai-speaking day, by the obvious level of knowledge, and by the enthusiasm for expansion which the participants expressed. Many requests from the floor came for future events of this nature, both from the farmers themselves and from the banking and entrepreneurial communities.

The last day of the formal part of Giant Prawn 1980 opened with the third technical session, which was chaired by Yung Shang, from the College of Tropical Agriculture, University of Hawaii, Honolulu, Hawaii. This session was devoted to papers on the status of freshwater prawn farming and consisted of seven general papers describing work in Colombia, Ghana, the Philippines, Taiwan, and Thailand, together with a global overview by Dr. Herminio Rabanal. An informal paper on Macrobrachium culture in Israel, an entirely export-oriented development, had previously been presented in an extra evening session. The last technical session of the conference was chaired by Michael New, currently

serving as a senior Fisheries Biologist (Aquaculture) for FAO in Thailand, and was devoted to economics, business and extension. Eight papers on these topics were presented by authors from Hawaii, Honduras, Mauritius, Mexico, Sri Lanka and Thailand. Four of these papers came from the commercial sector. Giant Prawn 1980 was enlivened by the second discussion session, on practical Macrobrachium farming, which was chaired by Takuji Fujimura, now retired from his post as Chief of the Anuenue Fisheries Research Center, Honolulu, Hawaii, but even more active in a consultancy role. Joined by selected panelists, Fuji master-minded a whole afternoon of extremely lively discussion on all aspects of practical farming, a session which formed an appropriate end to the formal part of the meeting and one which increased participants' sorrow that the party was (nearly) over!.

Giant Prawn 1980 included three social occasions. The first was a memorable buffet dinner held at the Riverside Terrace of the famous Oriental Hotel on the banks of Chao Pra-ya River in Bangkok. This first-class meal was hosted by the Ministry of Agriculture and Cooperatives of the Royal Thai Government and its romantic setting was enhanced by the beautiful ice sculptures of prawns and fish which were provided by the hotel. The other two social occasions were a formal lunch and a formal dinner, held at the conference location, the Erawan Hotel. These excellent meals were buffet style to avoid the ethnic and religious difficulties associated with set meals and, like that at the Oriental Hotel, provided the opportunity for spouses and for invited guests to join the participants. All agreed that the facilities provided by the Erawan Hotel - conference, accommodation, and food, were excellent. During the final buffet dinner, a closing speech was made by Ariya Sidthimunka Deputy Director General of the Department of Fisheries, Ministry of Agriculture and Cooperatives, Royal Thai Government, in which he thanked the co-sponsors of Giant Prawn 1980 and the many people involved in its organisation and management, singling out the Convenor, Michael New, and his wife Janet. These sentiments were echoed by Patrick Tingwell, Project Manager - Aquaculture, Central Enterprises Limited, Hong Kong, who spoke on behalf of the participants of Giant Prawn 1980.

After the formal part of Giant Prawn 1980, three tours of university, government and commercial hatcheries and production farms for freshwater prawns were organised. The first tour, a one-day tour, had forty participants, The second was a two-day tour which included one night at the Orchid Lodge Hotel in Pattaya, Thailand's premier seaside resort; this tour had 78 participants. Additionally a free one-day tour, for Thai farmers attending the Thai-speaking day, was organised by the Department of Fisheries, thus giving another 100 people the opportunity to see Thai Macrobrachium farming in action.

A few copies of the Abstracts of the 56 papers (two additional papers were submitted but not verbally presented) of Giant Prawn 1980 are available, at a price of US\$10 to cover printing and postage charges, from Giant Prawn 1980, c/o UNDP, P.O. Box 618, Bangkok 2, Thailand. Provisional proceedings of Giant Prawn 1980, containing the full papers presented at the meeting, will be produced for distribution to registered participants only, by the International Foundation for Science. Negotiations are proceeding with European publishers with the aim of producing an edited version of the proceedings and it is hoped that this will additionally contain transcripts of the discussion sessions, including the Thai-speaking day, which were recorded on tape. Photographs of the events are available.

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PARTIAL LIST OF PARTICIPANTS

The following participants had registered by May 31, 1980:-

NAME	AFFILIATION	COUNTRY
Mr. Affandi Tan Abdullah	RISDA	Malaysia
Mr. Sukotjo Adisukresno	Brackishwater Aquaculture Development Center	Indonesia
Dr. K.G. Adiyodi	Calicut University	India
Mr. Mark Anello	University of Malaya	Malaysia
Miss Sopa Areerat	National Inland Fisheries Institute	Thailand
Mr. Alistair G. Beck	Johore Mining and Stevedoring Co.	Malaysia
Dr. Mali Boonyaratpalin	National Inland Fisheries Institute	Thailand
Dr. M.S. Caulton	King Prawns (PUT) Ltd.	Zimbabwe
Mrs. M.S. Caulton		Zimbabwe
Mr. Peter Chang	SAMMU	Sabah
Dr. H.H. Costa	University of Kelaniya	Sri Lanka
Dr. Catalino R. De La Cruz	CLSU-ICLARM	Philippines
Mr. Henry Dejarme	Mindanao State University	Philippines
Mr. Daniel Elisabeth-Mesnager	SATFEM	Martinique
Mrs. Philomene Elisabeth-Mesnager		Martinique
Mr. Gregorio L. Escritor	FAO	Indonesia
Mr. R.L. Ferdinando	Lover Brothers (Ceylon) Ltd.	Sri Lanka
Mr. Jack N. Freudenstein	Hungerford Hill Ltd.	Australia
Mr. Takuji Fujimura	Aquacon Hawaii	Hawaii
Mr. Jacques Gaillard	International Foundation for Science	Sweden
Mrs. Luzviminda A. Guerrero	Central Luzon State University	Philippines
Mr. Wigjoro Handoko	Balat Budidaya Air Tawar	Indonesia
Mr. Geoffrey Hodgson	Borneo Fish Farms Ltd.	Brunei
Mr. Jean Marie Huron	Camarons Hatchery Co.	Mauritius
Mr. Sombat Intarapichate	Chacheongsao Fisheries Station	Thailand
Dr. S. Ken Johnson	Texas A & M University	Texas
Mrs. Sarah Stedman Kim		Malaysia
Mr. D.S. Kim		Malaysia
Mr. Koh Hui Meng	CPM/Pacific (PTE)	Singapore
Dr. Wayne Kruckenberg	Aquatic and Wildlife Resources Division	Guam
Mr. Lau Yau Chai		
Mr. Lau Yau Chai	Johore Mining and Stevedoring Co.	Malaysia
Dr. Lee Chan Lui	MARDI	Malaysia
Dr. I.C. Liao	Tungkang Marine Laboratory	Taiwan
Dr. Nai Hsien Chag Liao	Tungkang Marine Laboratory	Taiwan
Mr. Cheo Yu Lim	Johore Mining and Stevedoring Co.	Malaysia
Dr. T. Aaron Lim	Brigham Young University	Hawaii
Mr. Pairojana Lipkorn	Department of Fisheries	Thailand
Dr. Vance P. Lipovsky	Coast Oyster Hatchery	Washington
Mr. D.J. Luders	Vanatu Aquaculture Ltd.	New Hebrides
Dr. Spencer Malecha	University of Hawaii	Hawaii
Mr. S.A.W. Manawadu		Sri Lanka
Dr. Victor J. Mancebo	San Miguel Corporation	Philippines
Dr. Deb Menasveta	SEAFDEC	Thailand
Dr. Piamsak Menasveta	Chulalongkorn University	Thailand
Mr. Kisto Mintardjo	Brackishwater Aquaculture Development Center	Indonesia
Mr. Michael Mistakidia	FAO	Mexico
Mr. Somprasong Mobundit	Suphanburi Fisheries Station	Thailand
Mr. Jose Natvidad	Bureau of Fisheries and Aquatic Resources	Philippines
Mr. Michael B. New	FAO	Thailand
Mrs. Janet M. New		England
Mrs. Maria Olsson	International Foundation for Science	Sweden
Mr. Bertil Olsson		Sweden
Mr. Kenneth W. Osborn	US AID	Washington D.C.
Mr. Othman bin Mohamed	IPP, Penang	Malaysia
Mrs. Genoveva Padilla	SEAFDEC	Philippines
Dr. T.J. Pandian	Madurai Kamraj University	India
Dr. Oopatham Pawaputanon	Department of Fisheries	Thailand
Mr. L.C. Perera	CARITAS	Bangladesh
Mrs. Esperance Perera		Sri Lanka
Mr. Sawit Phisarithuth	Sahapatanakaset Co.	Thailand
Mr. Alio Poernomo	Agency of Agriculture R + D	Indonesia
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Dr. Dan M. Popper	FAO	Western Samoa
Mr. Manu Potaros	Department of Fisheries	Thailand
Dr. S.K. Prah	Institute of Aquatic Biology	Ghana
Mr. Pairoj Promanonda	Songkhla Fisheries Station	Thailand
Dr. Hermino R. Rabanal	FAO	Philippines
Mr. Ramli bin Saad	Fisheries Division	Malaysia
Mr. Allan S. Rietow	Prawns of Hawaii Inc.	Hawaii
Mrs. Catherine Richards-Rietow	Prawns of Hawaii Inc.	Hawaii
Mr. Songchai Sahavacharin	Songkhla Fisheries Station	Thailand
Mr. Soleh Samsi	Directorate General of Fisheries	Indonesia
Dr. Paul Sandifer	Marine Resources Research Institute	S. Carolina
Dr. Dale Sarver	Anuenue Fisheries Research Center	Hawaii
Dr. Yung C. Shang	University of Hawaii	Hawaii
Mr. Ariya Sidthimunka	Department of Fisheries	Thailand
Mr. Tarlochan Singh	University of Malaya	Malaysia
Mr. Somsak Singholka	Chacheongsao Fisheries Station	Thailand
Dr. Patrick Sorgolous	Artemia Reference Center	Belgium
Dr. Lert Srichandra	Rotary International	Thailand
Mr. Chanintorn Sritnngsuk	National Inland Fisheries Institute	Thailand
Miss Margo Stahl		Hawaii
Mrs. Haniah H. Suharto	Agency of Agriculture R + D	Indonesia
Mr. Chamnan Sukapunt	Chacheongsao Fisheries Station	Thailand
Mr. Sumantri Bin Samsi	Farmer	Indonesia
Mr. Panit Sungkasem	Songkhla Fisheries Station	Thailand
Mr. Sombhong Suwannatous	Chacheongsao Fisheries Station	Thailand
Dr. Reungchai Tansakul	Prince of Songkhla University	Thailand
Dr. Rogene K. Thompson	Camarons Hatchery Co.	Mauritius
Mr. Michael Ting	CPM/Pacific (PTE)	Singapore

Mr. Patrick Tingwell	Central Enterprises Ltd.	Hong Kong
Mrs. Bunty Tingwell		Australia
Mr. P.S. Toh		Malaysia
Mr. Djoko Tribawono	Fisheries Service	Indonesia
Mr. Anand Tunsutapanich	Chacheongsao Fisheries Station	Thailand
Mr. Vanich Varikul	National Inland Fisheries Insitute	Thailand
Mr. Paiboon Vorasayan	Chacheongsao Fisheries Station	Thailand
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Miss Gail L. Woon	Wallace Groves Aquaculture Foundation	Bahamas
Dr. Ronald E. Wulff	Aqua Finca de Camarones	Honduras
Mr. William Wong Yen	SAMMU	Sabah
Mr. Ronald Young	San Miguel Corporation	Philippines
Dr. Amin Zarur	Department of Fisheries	Mexico