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Disaster Relief Co-ordinator (UNDRO)**

SOUTH PACIFIC PROGRAMME OFFICE

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Strengthening Disaster Management in the South Pacific

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UNDRO Forum Secretariat
Regional Disaster Management Seminar
SOVA TUJI March 26-28 1991

I. INTRODUCTION

Pacific island countries are vulnerable to almost all types of natural hazards and man-made disasters. Whilst some regional countries are more disaster-prone than in others, the overall disaster threat tends to fluctuate. Indeed, some countries may go for many years without a serious disaster event. This makes it difficult for countries to maintain high levels of awareness and preparedness, a fact which is well recognized by regional governments and non-government organizations alike.

UNDRO has been involved in disaster activities in the region since it began operation in 1972, mostly in providing relief assistance. Over the last decade, the scope of UNDRO's functions and responsibilities has widened to include disaster prevention, mitigation and preparedness. These management elements have been recognized as critical issues to be addressed if the impacts are to be reduced.

Concern expressed by regional governments that disaster issues be given serious consideration prompted UNDRO to co-sponsor two regional meetings on natural disasters, in 1976 and 1979. A notable outcome was the appointment of an UNDRO Regional Advisor attached to the South Pacific Bureau for Economic Cooperation (now known as the Forum Secretariat). The appointment was made in 1985 but discontinued in November 1987. In the late 1980's, an UNDRO Regional Coordinator was based with UNDP, Suva.

UNDRO has, therefore, been active in the Pacific region for almost 2 decades, directly through its Geneva office. Thus far, it has provided mainly technical and financial support for a range of disaster preparedness and response activities, such as seminars, workshops, disaster studies and national disaster planning. Its funds have been dispersed and co-ordinated through bilateral and multilateral agencies in the region. The setting up of a regional office was a focal point of a 1987 report, "South Pacific Mitigation Programme". This recommendation was endorsed in early 1990 by a South Pacific Mitigation Needs Assessment (SPMNA) Mission. During the SPMNA mission, four UNDRO consultants visited six countries: Fiji, PNG, Tonga, Vanuatu, Solomon Islands and Western Samoa. This mission considered that a regional office would contribute towards strengthening prevention, mitigation and preparedness in the region, together with UNDRO's more traditional activity of providing disaster relief assistance. The South Pacific Programme Office (SPPO) was established in October 1990.

There is considerable variation between regional countries in their vulnerability to different types of disasters, in their current capacity for disaster management, and in their level of economic development. There is a need to strengthen each country's capability to cope with, and to counter the effects of disasters. Recognizing this need for individual countries and collectively for the region, the SPMNA mission made proposals and recommendations for UNDRO/SPPO to investigate further and to implement where appropriate.

With this broad statement of purpose, UNDRO/SPPO in conjunction with the Forum Secretariat held a three day seminar in Suva from 26-28 March, 1991. Representatives from the NDCs of Pacific island countries, donor agencies, and NGOs were invited to attend to:

- discuss the different levels of development of the Pacific island countries in the area of disaster management and identify areas requiring priority assistance nationally or regionally;
- be made aware of the various parameters used by the different agencies, including NGOs in the provision of assistance within the wide spectrum of disaster management; and
- to reconfirm and/or amend, as appropriate, the recommendations by the SPMNA on the role of UNDRO/SPPO in the South Pacific so SPPO may operate most efficiently and effectively.

II. ATTENDANCE

The seminar was attended by twelve senior government officials from ten Pacific Island countries, all but two of whom were currently chairpersons of the NDCs of their respective countries. The countries represented were the Cook Islands, Fiji, Kiribati, Niue, Palau, Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa.

There was also a good response to the invitations sent to the various donor, financing and training agencies and NGOs. Represented at the seminar were the Australian Overseas Disaster Response Organization (AODRO), the Australian International Development Assistance Bureau (AIDAB), Asian Development Bank (ADB), Asian Disaster Preparedness Center (ADPC), European Economic Community (EEC), Food and Agricultural Organization (FAO), League of Red Cross & Red Crescent Society (LRCS), United States Agency for International Development (USAID), Overseas Foreign Disaster Assistance (OFDA), World Meteorological Organization (WMO), World Health Organization (WHO), Pacific Conference of Churches (PCC), United National Development Programme (UNDP) & Office of the United Nations Disaster Relief Co-ordinator (UNDRO).

Consultants to the seminar were the Honorable Dr Langi Kavaliku, Minister for Education, Civil Aviation & Works, of the Kingdom of Tonga, Dr Herbert Tiedemann, an insurance and re-insurance consultant, and Air Vice Marshall, Nick Carter, a disaster management consultant well known for his work in the Pacific and South East Asia and who also acted as rapporteur.

A full list of all participants is at appendix IV.

III. SEMINAR PROGRAMME

1. Opening Session

- (a) Chief Guest: Hon. Colonel Vatilai Navunisaravi, Minister for Fijian Affairs & Rural Development, Chairman of Fiji's Emergency Services Committee (EMSEC).
- (b) Mr Matthew Kahane, Resident Representative, UNDP, Apia.
- (c) Mr Esekia Warvi, Deputy Secretary General, Forum Secretariat.
- (d) Mr Ernst Lohman, Senior Co-ordinating Officer, UNDRO, Geneva.

2. Keynote Presentations

- (a) Main Keynote Address: Hon. Dr Langi Kavaliku, Minister for Education, Civil Aviation & Works, Kingdom of Tonga: "**Disaster Management Issues in the South Pacific**".
- (b) Dr Werner M. Schelzig, Development Policy Officer, Asian Development Bank: "**Financing Disaster Mitigation Activities**".
- (c) Leiataua Dr Kilifoti Eteuati, Secretary to Government of Western Samoa, Chairman of National Disaster Council: "**Disaster Management: The Cyclone Ofa Experience - A Case Study**".
- (d) Dr Herbert Tiedemann, Insurance Consultant - UNDRO: "**Disaster, Development & Insurance**".

3. Presentations by Country Representatives

4. Presentation on Disaster Manager's Handbook by Air Vice Marshall, Nick Carter

5. Presentations by International Agencies, Donor Countries & NGO's.

6. Panel Presentations:

- (a) Ms. Annmaree O'Keeffe, Director of Refugee & Disaster Co-ordination Section, AIDAB, Canberra: "**Financing Disaster Projects: AIDAB's Experience in the Region**".

- (b) Mr Brian Ward, Director, Asian Disaster Preparedness Center, Bangkok: **"Training in Disaster Management"**.
- (c) Mr J.B. Blake, Director, AODRO, Sydney: **"Roles of NGOs in Disaster Management"**.
- (d) Ratu Meli Bainimarama, Permanent Secretary for Fijian Affairs & Rural Development: **"Roles of National Disaster Councils in Disaster Management: The Fiji Experience"**.

7. Working Group Sessions:

- (a) Functions of National Disaster Committees.
- (b) Roles of NGOs in Disaster Management
- (c) Training for Disaster
- (d) Financing of Disaster Management Activities
- (e) Disaster, Development & Insurance

8. Review of On-going & Proposed Disaster Mitigation Activities in the Region:

- River Improvement Master Plan: Fiji; presented by Roland Lin, Principal Engineer, Ministry of Primary Industries.
- South East Viti Levu Landslide Project: Fiji; presented by Trevor Lawson, Senior Engineer, Mineral Resources Department.
- Hazard Mapping in the Solomon Islands; presented by John Skoda, Chief Technical Advisor, United Nations Development Programme.
- Integrated Emergency Health Management: Western Samoa; presented by Dr David Parkinson, World Health Organization Representative, Apia.

9. Presentation of Conclusions by Air Vice Marshall, Nick Carter.

10. Concluding Remarks by His Excellency, Mr Yasuo Hori, Ambassador of Japan to Fiji.

IV. OPENING ADDRESS & STATEMENTS

The opening address for the Regional Disaster Management Seminar was given by the **Minister for Fijian Affairs and Rural Development, the Honorable Vataliai Navunisaravi, MBE**. In welcoming the participants, the Minister noted the global trend in which natural disasters are occurring and taxing people's ability to cope. The seminar on strengthening disaster management in the South Pacific therefore had come at an opportune time to address the global problem.

The Minister spoke of the UNDRO South Pacific Mitigation Needs Assessment Mission to the region which identified the need to strengthen disaster management at both the national and regional levels. To better assist island governments to mitigate and prepare for disasters, UNDRO set up a regional office in Suva known as the South Pacific Project Office (SPPO). The seminar now mounted by UNDRO/SPPO was in line with the goals and objectives of the International Decade for Natural Disaster Reduction and should enhance UNDRO's role in the region and provide SPPO directions in the development of disaster management projects for the region. The Minister's experience in Fiji was that disaster management capability was limited because of resource constraints and absence of local expertise. He hoped that other country representatives would identify their priorities and outline national frameworks of action and, as well, bilateral and multilateral agencies would be able to coordinate and consolidate their assistance programmes. The text of the Minister's opening address is attached at Annex 1.

The UN Resident Coordinator and the UNDP Resident Representative in Apia, Western Samoa, Mr Matthew Kahane spoke on the role of the UN at the country level in preparing for disasters, providing relief and reconstruction, and mitigating against future disasters. Following a disaster, a Disaster Management Team (DMT), which consists of various UN agencies, contacts the government to ascertain the extent of the damage and relief needs. This assessment is channelled through UNDRO to the international community. Once relief supplies arrive, the DMT could help in the distribution of supplies, monitoring and reporting on the distribution.

The role of the DMT is not restricted to post-disaster relief. The DMT further assists with reducing the impact of natural disasters. Where such disasters were aggravated by human activities, the DMT could advise countries on preventive and protective actions. DMT also advises how to draw advice and financial support from the UN. The UNDP provides funds both under its Special Programme Resources, in response to particular disasters, and under its Indicative Planning Figures for individual countries.

In further welcoming the participants, **Mr Esekia Warvi, the Acting Secretary General, Forum Secretariat**, noted the susceptibility of the region to various kinds of natural disasters, including hurricanes, floods, droughts, and earthquakes and, should global climate change proceed, possible rising sea levels.

Increased vulnerability to natural disasters was brought about by increasing urbanization and population growth. Many of the policies adopted by regional governments in areas such as mining, forestry, urbanization, population growth and resource management have an impact on the environment and the overall effect on disasters. Given the situation, the Secretariat, through the recruitment of an Environment Officer and in working closely with the South Pacific Regional Environment Programme intends, to increase the region's awareness of these issues.

Through a rather modest scheme established in 1976, the Secretariat is able to respond quickly when a Forum Island country is hit by a natural disaster. The Secretariat is able to make a maximum cash donation of F\$20,000 to an island member country immediately on verification that a disaster has occurred. However, Mr Warvi noted, it often is difficult to implement disaster preparedness and relief programmes in the region, because of the scattered pattern of the islands and the vast area to be covered. Inadequate infrastructural arrangements within many of the countries of the region exacerbate difficulties in communication and transport. Natural disasters are a phenomena well known to the people of the South Pacific and in most communities the response mechanisms to such devastations have been developed over the years. The Secretariat hoped that the meeting would consider how to build on the traditional knowledge of preparing for and coping with disasters.

Against this background, the Forum Secretariat was pleased to join with the newly established UNDRO/SPPO and UNDP in organizing the Regional Disaster Management Seminar. There is considerable interest by donors in providing assistance to improve the region's capacity to prepare for disasters and to respond effectively when they occur. The Secretariat was concerned that much of what is being done by a few donors is not generally known to others of the donor community. Together with the UNDRO/SPPO, the Secretariat hoped to raise general awareness in this area.

Mr Ernst Lohman, Senior Coordinating Officer, UNDRO, Geneva, noted the adverse effects and frequency of disasters in the South Pacific but said disasters could create new opportunities for social and economic development. After a disaster, for example, a climate may be created in which better land-use designation is possible for example. He said that not only could donor funding be more readily mobilized for a variety of activities but that government and public opinion would be more oriented towards the implementing measures to reduce future risks.

The artificial dichotomy between disaster management and development management has often meant that opportunities have been missed. Commonly, post-disaster assistance has been treated as a self-contained operation designed to save lives and restore victims to their previous vulnerable condition. Often, therefore, the opportunity to capitalise on the favorable development climate is short-lived.

Mr Lohman said that risk reduction measures fall into two categories. First are short term organizational "preparedness" measures, including contingency plans which, on a continuous basis ensure the readiness and ability to warn people of imminent disasters, enable pre-impact precautionary measures to be taken and facilitate the provision of prompt and appropriate assistance to victims. Second, developmental "mitigation" measures relate to institutional controls, such as landuse planning and construction standards. He stressed the need for integrating these categories, to further develop projects like cyclone resistant housing while at the same time maintaining a fully operational preparedness programme.

During the two preparatory missions for UNDR0/SPPO programme in 1990, the teams had discussed the issues of training and demonstration projects with professional staff in the ministries concerned with disaster management. They found the amount of in-country expertise is large but often scattered and heavily involved in day-to-day tasks. Often, development is so fast that there seems to be no time to carry out systematic risk assessment studies ahead of the development process. While expatriate technical experts could solve the manpower problems in the short-term, the programmes could stop when the expert leaves the country. There is therefore an urgent need to start training programmes in risk assessment and mitigation planning for management personnel in the South Pacific. Such training programmes should be built on the existing regional capabilities initiated from in-country sectoral experiences by those countries performing well in various sectors and supported by bilateral and multilateral agencies already involved. The only obligation of the countries would be to set up national and regional courses. To ensure that the training programmes are of practical use, they should be tested in demonstration projects.

With regard to the action of the UN when disasters occur, Mr Lohman said the Resident Representative of UNDP may be requested by the government concerned to help coordinate requests and offers for international aid. UNDP and UNDR0 are currently developing a manual for Resident Representatives outlining functions and procedures for disaster management. UNDR0's role is similar to the Resident Representative's role, except that UNDR0 focuses on international post-disaster relief operations and on short term pre-disaster activities in close cooperation with other agencies. UNDR0's programmes are usually in the form of pre-disaster mitigation training and demonstration projects, including consultancies, with the aim to reduce the direct and indirect effects of the next disaster. UNDR0 has prepared a manual "Mitigating Natural Disasters" which outlines practical policies and techniques for risk assessment and disaster mitigation planning.

The present UNDR0/SPPO office has been set up to focus on stimulating pre-disaster activities. These include identifying strengths and weaknesses in disaster management, assisting in the formulation of project frameworks and project documents, helping to identify suitable donor organizations and individuals to assist in project implementation, and assisting with the identification of financial resources. However the role of UNDR0/SPPO office could be changed following the discussions of the seminar.

Summary

The common concern of these introductory speakers was to explain the function of UNDR0 within the larger United Nations Organization, and the proposed role of UNDR0 and its South Pacific Programme Office in this region. The joint purposes of the seminar were to join in consultation with regional Governments as to the role and functions of SPPO, to jointly propose directions for its operation, and to promote dialogue between regional governments, SPPO and donor agencies in the South Pacific region. Also stressed was the positive contribution that improved disaster management could make towards development in all sectors of the economy and society.

V. KEYNOTE PRESENTATIONS

(a) The Hon. Dr Langi Kavaliku

The Hon. Dr Langi Kavaliku, Minister for Education, Civil Aviation and Works, Kingdom of Tonga delivered the chief keynote address on the subject, "Disaster Management Issues in the South Pacific".

He opened by stating that the adverse effects of natural disasters and their developmental consequences were well-known in the South Pacific. Such disasters affect both people and resources and, therefore, disaster management is essential. He noted the importance of International Decade for Natural Disaster Reduction (IDNDR) and UNDR0's objectives in developing ways to mitigate the impact of these natural phenomenon and stressed the importance of national, regional and international assistance and its co-ordination.

Disaster managers and others working in the field of disaster management should question existing principles of management and re-assess and change them as required. The applicability of perfect or disaster management structures in small island nations of the Pacific should also be examined with a view to the continued use of "less perfect disaster management" structures which may be more-pragmatic given the geographical characteristics of the Pacific region - large distances, the relative remoteness of some communities, and their particular problems and needs.

Nevertheless, it is necessary to develop a formal structure for disaster management even if this was not operational on a full time basis. A disaster plan is essential if a small country is to utilize its minimal resources optimally and if emphasis is to be shifted from relief and rehabilitation to mitigation and preparedness.

Of the many issues affecting disaster management in the South Pacific, the physical environment posed an immediate hurdle to efficient disaster management. Limitations in natural, financial and human resources, problems with communications and transportation, response time factors, conflict in national goals and priorities, and problems with the creation of false values and aspirations were other issues relevant to the design of appropriate disaster management mechanisms. Because of the diversity of in-country resources, and the receipt of foreign aid for relief and rehabilitation work, accountability is also an important concern - especially for countries which have "floating organizations and part-time officers".

To avoid replicating past efforts or wasting resources, UNDR0/SPPO should assist with improving disaster management by providing training, information gathering and dissemination, organizing "heads of disaster management" meetings, other technical assistance, and management of aid donors.

This last item would include keeping donors informed, helping them identify and solve problems related to the area, tapping them for experience and expertise, and helping them tap the area for localized experience, expertise and needs. The full text of Dr Kavaliku's address is at appendix (ii).

(b) **Dr Werner Schelzig**

Dr Schelzig discussed the financing of disaster management and related activities. He stated that ADB had made available approximately \$400 million for rehabilitation in the post disaster period during 1988-1990.

Dr Schelzig explained the contrast between the manner by which ADB had previously disseminated this assistance and the present more efficient and timely process. Until recently, ADB policy was mostly reactive in nature and limited to financing rehabilitation activities. He gave several examples of this ranging from Bangladesh to ABD assistance for Western Samoa after Cyclone OFA. ADB has become increasingly aware of the need for pro-active mitigation measures before disaster strikes. The policies of the bank in relation to disaster mitigation have been reviewed to include vulnerability assessment and risk analysis in future projects. Disaster mitigation measures would be incorporated into the overall design of ADB funded projects.

The ADB's technical assistance facility also provides advisory and project preparatory assistance. An example of this service is the on-going regional technical assistance for studies on disaster mitigation in Asia and the Pacific. Four major components have been financed by this technical assistance: (i) an ADB seminar; (ii) technical paper on risk assessment, vulnerability analysis, disaster incidence, and structural and non-structural mitigation measures; (iii) four country case studies; and (iv) a handbook on disaster mitigation specifically for disaster managers in the region.

ADB believes that international assistance is essential in marshalling disaster mitigation activities in the years ahead. ADPC and UNDRO/SPPO would be important institutions through which such assistance can be focussed. Viable projects need to be identified and evaluated and the financial and institutional absorptive capability ensured.

(c) **Leiatuaa Dr Kilifoti Eteuati**

Dr Kilifoti Eteuati, Secretary to Government and Chairman of the National Disaster Council gave an in-depth case study of the Cyclone Ofa experience in Western Samoa. He recounted the history of the disaster plan drafting and acceptance and the setting up of the NDC for Western Samoa.

Dr Eteuati described how the Samoan Government dealt with Ofa from its outset, briefly outlining how they had to cope with management, logistics, and resource problems without use of the accepted plan since no legislation had been drawn up to give the plan legal

support. He gave an account of the problems encountered with communication and transportation during and after the cyclone, and paid tribute to the strong cultural and traditional institutions and endurance of the Samoan people which contributed to a very quick return to normal levels of production and life in general.

He stressed that the assistance which was received was timely, efficient and effective, and outlined the various measures picked up through direct experience and incorporated into a more effective National Disaster Plan which is presently awaiting legislative support.

(d) Dr Herbert Tiedemann

Dr Tiedemann recounted natural disasters in different countries and their effects on the economies of those countries. His message was the inability of insurance to cover the costs of all losses incurred. Insurance can not be the cure, nor an appropriate security blanket for recovering losses resulting from natural disasters. Education was the answer, and not more wasted financial resources.

Basic education in risk awareness followed by risk analysis was essential. The risk analysis should then be strengthened by stockpiling which should lead to risk optimization. "Passive Safety" is vital and must be installed into the element of risk. Building Codes are not an acceptable form of passive safety, but are more a form of uncertainty.

Risk optimization should pave the way for the introduction of effective warning and relief, but taking into account the fact that warnings only worked for those disasters of a predictable nature (which were few). Active safety such as that which UNDRO/SPPO is concerned with should be carefully examined for effectiveness and applicability.

Dr Tiedemann warned that Foreign Aid which is wrongly administered does little good and, in this regard, insurance is no exception. While insurance can help with risk assessment and analysis, it is not a cure because with rapidly growing populations buildings are more vulnerable and expensive. The climate is not fixed but variable and this is all the more reason why the public needs to have a raised level of awareness.

(e) Summary

The four keynote speakers introduced several themes which were returned to many times and expanded upon over the three days of the seminar. The central issues were the necessity for tailoring disaster management to national needs; the financing of disaster-related activities; the need for Governments to appropriately direct foreign assistance and develop the institutional capacity to effectively absorb such assistance; and the potential role of SPPO as an institution through which assistance could be channeled to the South Pacific region. A further need was for open and regular dialogue among governments of the region and donor agencies, and an important role for SPPO would be to facilitate such communication.

VI. COUNTRY PRESENTATIONS

Representatives of Governments in the South Pacific presented to the Seminar a brief review of the status of disaster management in their country.

(a) Cook Islands

Presented by Mr Goldy Goldie, Chief of Police and Chief Hurricane Safety Officer.

The Cook Islands comprise over a hundred islands with a total land mass of 240 sq.km., scattered over 2 million square kilometers of ocean between latitudes 9°S and 22°S. Of these islands, fifteen are inhabited. The islands are located in two broad clusters, the Southern Cooks and the Northern Cooks. The Southern Cooks are the most vulnerable to tropical cyclones. The Cook Islands also experience severe drought conditions, particularly on the smaller atolls, earthquakes, tsunamis and, occasionally, floods.

Mr Goldie explained that the geographic configuration of the Cook Islands, together with limited communication and transport infrastructure, made communication difficult, and especially so during times of hurricanes. The Hurricane Safety Act of 1973 makes provision for the appointment of a Hurricane Safety Committee and a Chief Hurricane Safety Officer who is responsible to the Minister for the co-ordination of and control of the activities of Government Departments and other organizations in the event of a hurricane.

Preparedness and mitigation activities are given very high priority by the Cook Island Government, to alleviate the problems of communication during hurricanes. The Hurricane Safety Committee is required to review and update the Hurricane Safety Plan before the Hurricane season (November-April) every year and public awareness programmes including special programmes for schools are given wide coverage through the media which now includes television.

Mitigation activities undertaken include a building code modelled on that of New Zealand, public education, the protection of the areas around wharves and foreshore by seawalls, the clearing of rivers and river mouths, and the protection of the environment through the Conservation Act of 1987/88. A pressing need is for funds for public education and awareness activities.

(b) Fiji

Presented by Ratu Meli Bainimarama, Permanent Secretary for Fijian Affairs and Rural Development, and Deputy Chairman of the Emergency Services Committee.

Fiji comprises a group of islands located between latitudes 12oS and 22oS, in the most

active tropical cyclone belt. In the South Pacific, Fiji has the greatest incidence of destructive cyclones. The country is also vulnerable to a wide range of natural hazards including floods, storm surges, earthquakes and landslides. Fiji is one of the more developed countries in the region and its overall vulnerability to natural disaster is rising along with its infrastructural development.

Ratu Meli described the structure and functions of the National Disaster Committee from activation through to disbanding at the end of the cyclone, and that of the Relief and Rehabilitation Committee. While Fiji had been able to build up adequate experience in relief and rehabilitation operations, mitigation activities were minimal, requiring a great deal more attention and commitment by government. The two committee system was causing problems especially in the transition of authority from the emergency phase to the long term relief, reconstruction and rehabilitation phase. Ratu Meli explained that Fiji's recent experience with Cyclone Sina highlighted the need for a complete review of the EMSEC manual and emergency operational systems, especially in the areas of authority, responsibility and training of personnel.

(c) **Kiribati**

Presented by Mr Iotua Tebukei, Commissioner of Police and Officer in charge of Disasters.

Kiribati is a group of 33 low-lying coral atolls which straddles the Equator, lying between 3°N and 10°S. These islands, which have a total land area of about 690 square kilometres and a population of around 69,000, are spread over about two million square kilometers of ocean. Although Kiribati is located outside the hurricane belt, the country is prone to damaging storms and highly vulnerable to any sea-level rise. Drought is another major problem.

Mr Tebukei explained that while Kiribati was free of the threat of cyclones, the country had other serious problems for which it required assistance. These include the lack of proper water supplies and sewerage systems to mitigate against drought and the spread of disease, erosion of coastlines by strong wave action, and the never ending problem of fishermen going missing at sea, caught by abrupt changes in weather and without adequate means of communication.

These problems were exacerbated by a very limited infrastructure for inter-island communication and transport. Mr Tebukei said that with its present very narrow economic base, his country could not fund the developments required. Even funds needed to mount search and rescue services for missing fishermen were exhausted very early in the year. He noted further that, because of the endemic nature of these problems in Kiribati, unfortunately donor agencies rarely recognized the types of natural disasters suffered by Kiribati as qualifying for particular assistance.

(d) **Niue**

Presented by Mr Steve Brady, Chief of Police.

Niue is an isolated, raised coral atoll, with a land area of 259 sq.km. It is one of the smallest countries of the region. The population remains stable at around 3500 because of substantial emmigration. Located at 19°S, Niue is vulnerable to tropical cyclones and severe droughts. Over the past fifty years, Niue has suffered substantial damage from 23 cyclones, the most recent being from Cyclone Ofa in 1990.

Mr Brady explained the main elements of the Niue Disaster Plan making specific reference to Village Disaster Plans and Special Plans to deal with a localized disaster requiring specialized response, e.g. aircraft accidents. He described the composition of the National Disaster Council and its operational response to disaster and relief and rehabilitation. The National Disaster Relief Fund was established in 1980 to create a locally available resource from which to begin the work of relief and rehabilitation before overseas assistance arrived.

Despite difficulties which lay in Niue's geography and the shortage of resources, certain mitigation practices are in place. Although there are no land use plans for urban and industrial development, the use of land is otherwise based on soil quality for agricultural and horticultural use only. A National Building Code aimed at mitigating the effects of cyclones and fires is in force. This code was developed with regard to resources and technical skills that are available in Niue. Public education and awareness programmes are given prime time coverage on radio and television at the beginning of each cyclone season.

Mr Brady went on to describe the various constraints brought by the unique conditions of Niue. One was the shortage of land for development purposes - for example, the only hotel is built in an area known to be vulnerable to disaster - and the general shortage of financial, material and man-power resources to adequately cope with disaster requirements.

(e) **Republic of Palau**

Presented by Mr Abel Suzuki, Co-ordinator of the National Emergency Management Office.

Palau consists of a group of about 200 small atolls of which 8 are permanently populated. It lies 3°N and 9°N, in the zone where tropical cyclones are generated.

Mr Suzuki described the function of Palau's National Emergency Management Organization (NEMO). Typhoons strike the Republic every few years and NEMO functions to disseminate cyclone situation reports to the general public, with instructions on how to secure houses, the storage of food and other essential items, and the distribution of cyclone shelters.

Palau's experience with Super Typhoon Mike in November, 1990, resulted in the declaration of a national disaster by the US President, Mr Bush. This placed the onus on the U.S. Federal Emergency Management Agency to make quick disaster surveys and provide financial aid on the basis of the surveys. The most important lesson learnt from Super Typhoon Mike was the necessity for a well established counter-disaster plan with which all the key players in disaster management are familiar.

(f) **Solomon Islands**

Presented by Mrs Phyllis Taloikwai, Chairwoman of the National Disaster Council.

Most of the Solomon Islands are located between 5°S and 10°S, which is a region of low cyclonic activity. Yet when cyclones do occur, they can be very destructive, as was Cyclone Namu in 1986. Other major natural hazards in the Solomon Islands are floods, storm surges, earthquakes and volcanic eruptions.

The Solomons are vulnerable to a multitude of natural hazards. However, Mrs Talokiwai explained, it was not until Cyclone Namu struck in 1986 with such devastating effect that UNDRO was approached to prepare an updated National Disaster Plan for the country. Based on this Plan, a National Disaster Act was passed in 1989 providing legal support for the Plan and placing the authority for its implementation in the National Disaster Committee. Mrs Taloikwai described the operational procedures of the National Disaster Plan and the responsibilities of the National Disaster Management Office.

Cyclone Namu, therefore, compelled Government to take a more pragmatic approach to countering the effects of natural disasters. Some attempts are now made towards disaster mitigation. A limited amount of risk mapping has been undertaken on the Guadalcanal Plains and watershed, but much work is still required in the general area of hazard analysis and risk assessment. Disaster preparedness and prevention programmes are disseminated continuously through the media. A substantial problem for public education is that within the Solomons, 25 languages and more than 40 major dialects are spoken. Town and Country Planning zoning regulations, guidelines on land use management and building codes are in place. Unfortunately these codes are only enforced in urban centres. Rural communities still follow traditional methods of landuse and home construction which are vulnerable to cyclones, floods and other hazards.

Apart from funds for mitigation programmes and the proper organization of counter-disaster operations, the largest, most simple but urgent need is for training at all levels. This requires assistance from donor agencies.

(g) Kingdom of Tonga

Presented by Mr Maliu Takai, Assistant Secretary in the Ministry of Works.

The Kingdom of Tonga comprises a group of 169 islands which are either low-lying, coral limestone formations or of volcanic origin. They are located between 15°S and 23.5°S, and lie in the same cyclonic belt as Fiji. The western islands of Tonga consist of a chain of active volcanoes. As well, Tonga is located in one of the most active earthquake zones in the world. Other natural hazards experienced there include storm surges, floods and droughts.

Mr Takai detailed the formation of the National Committee for Disaster Relief and Reconstruction, the National Office for Disaster Relief and Reconstruction (NODRR), and their various responsibilities and operational procedures. The two most common types of natural disasters in Tonga were cyclones and storm surge flooding. The devastating effect of Cyclone Isaac, which occurred in March 1982, was largely responsible for the launching of a scheme for low cost, hurricane-resistant housing. This has proved its worth in subsequent cyclones. It is, however, difficult to obtain the resources necessary to further extend this programme.

During Cyclone Isaac, storm surges flooded the northern coastal areas of the main island, Tongatapu, up to 500 meters inland, causing substantial damage. Measures are being taken to counter the recurrence of such flooding. Again, the resources required for this project to continue are beyond the present capability of the Government of Tonga.

Public education and awareness programmes are being developed and disseminated through the media. However, when a cyclone occurs, generally communications are cut off between emergency services on the main islands and people on outer islands of the group. A system of District Committees is being trialed, as one means to better localize disaster awareness, information and relief activities.

A major constraint to better disaster management continues to be the very limited resources available for further mitigation activities, the establishment of permanent counter-disaster facilities and for training at all levels.

(h) Tuvalu

Presented by Mr Pokia Tihala, Deputy Secretary to Government.

Tuvalu is a group of nine coral atolls with a total land area of 26 sq. miles and a population of around 8000 people. The islands of Tuvalu are spread over a very large area of the Pacific Ocean. While Tuvalu lies mostly outside the cyclone belt, it is occasionally affected by severe hurricanes, on an average of once every ten years. A freak storm in the wake of Cyclone Ofa, in January 1990, devastated villages on several islands.

Because atolls are low-lying, the people of Tuvalu are also vulnerable to storm surges and the effects of associated coastal erosion, droughts and associated health problems.

Mr Tihala explained that disaster management, relief and rehabilitation activities are the responsibilities of Government, which operates through the National Disaster Committee and, more generally, is directed by the National Disaster Plan for Tuvalu.

Major mitigation activities now being implemented include a project to protect coastlines against erosion, the development of a National Building Code for hurricane resistant houses and buildings, and the U.N. Water Project designed to mitigate against problems of communicable disease by providing a more reliable source of clean drinking water.

Major constraints upon Tuvalu's efforts towards more effective disaster management remain the poor communication links between the islands, the lack of trained and experienced personnel and the shortage of financial and technical resources for mitigation, preparedness, relief and rehabilitation. Tuvalu urgently needs assistance in these three areas.

(i) **Vanuatu**

Presented by Mrs Jeanette Bolenga, Chairperson of the Disaster Management Committee.

Vanuatu is a group of mostly volcanic islands with a total land area of 11,880 sq. km and a population of approximately 120,000. It is located in the most active cyclone belt and over the past 40 years has experienced 47 significant cyclones - on average, more than one per year. It also is located in a very active volcanic zone. Other natural hazards affecting parts of Vanuatu include earthquakes, landslides, floods, tsunamis, storm surges and droughts.

Mrs Bolenga explained that, in Vanuatu, disaster management is the responsibility of a National Disaster Co-ordinating Committee, which works through the National Disaster Management Office of the Ministry of Home Affairs, and is based on the National Disaster Management Plan formulated in 1982. Recent experiences indicated an urgent need to review the plan. This review, undertaken through AIDAB assistance, was currently being studied with a view to its implementation.

(j) **Summary**

The country presentations highlighted some of the important issues confronting South Pacific countries and their governments in their efforts towards better disaster management and preparedness. While there is a range of environmental conditions both between and within countries, there are commonalities in the problems encountered and the possibilities for further action. A common problem of South Pacific countries is their distance from other

countries and the remoteness of some communities within their national boundaries. These problems of communications and transport become critical constraints upon timely relief and rehabilitation following a natural disaster.

Another common experience is the difficulty in implementing national disaster plans where there are severe constraints on the financial, material and technical resources available. This problem was emphasized throughout these Country Presentations. In some cases, the reluctance of the government to allocate resources to these activities may reflect a low degree of commitment towards disaster management. More commonly, such reluctance reflects the limited resources at the disposal of these governments. Most of these countries rely on the international donor community for financial assistance because their local budgets cannot accommodate financing most of these efforts.

However, public awareness of the potential benefits of more pragmatic disaster management is limited in most countries, and this can include national decision-makers. Arousing public awareness is mostly conducted through national radio services but otherwise is limited by a shortage of information material in vernacular languages, such as pamphlets, posters and video presentations. Problems of resources and awareness are compounded by the shortage of disaster management personnel to staff national disaster offices. A few countries, such as the Solomon Islands, have used external assistance to specifically train personnel for this purpose but, more generally, there is a need to develop and implement training programmes that are tailored to South Pacific conditions.

VII. PRESENTATION ON DISASTER MANAGERS HANDBOOK

Mr Nick Carter, Consultant to the Asian Development Bank presented the Disaster Managers' Handbook which was designed as a practical reference manual for governments and organizations dealing with natural disasters. The handbook which was sponsored by the Asian Development Bank as part of its programme to enhance disaster management in Asia and the Pacific; emanated from his 12 years of working experience within the region. The need for such a guide had been proposed by delegates at a regional disaster mitigation seminar held in October 1990, at ADPC, Bangkok.

The handbook draws on disaster management practices in South Pacific countries and, therefore, provides a realistic consideration of the needs of disaster management in the region. The handbook was designed as a practical reference manual which covers the broad disaster management field and offers guidelines on the major topics. The theme of the handbook is that modern disaster management is very much an ongoing national requirement.

Mr Carter completed the first draft of the handbook in December 1990 and advice and comments were currently being sought from various experts on the draft. The handbook would be published by mid July 1991.

VIII. PRESENTATIONS BY INTERNATIONAL AGENCIES, DONOR COUNTRIES AND NON-GOVERNMENT ORGANIZATIONS (NGOs)

(a) AODRO

Presented by Mr Barry Blake, Executive Director, Australian Overseas Disaster Response Organization

AODRO is an affiliation of Australian non governmental organizations (NGOs) that provide assistance or support to the victims of disasters in other countries. While AODRO's primary role is to coordinate Australian NGOs' disaster assistance to countries outside Australia, AODRO also provides management assistance such as preparedness planning and training. In the South Pacific, AODRO has concentrated on preparedness assistance, primarily to integrate NGOs into national counter disaster planning. It has also responded to requests for assistance in other areas, such as recovery programmes and in prevention and mitigation. In relation to prevention and mitigation, AODRO has published a handbook on the construction of disaster resistant houses using traditional bush materials: "Disaster-Resistant Construction for Traditional Bush Houses" by Charles Boyle, Dip.Arch ARIBA, November 1988.

Mr Blake welcomed the arrival of UNDR0 in the South Pacific and hoped that its new South Pacific Programme Office would identify gaps in what was currently being done to enhance disaster management in the region and that it would coordinate with countries in the region in seeking appropriate ways to fill these gaps.

(b) European Community (EC)

Presented by Mr Robert Baldwin, EC Representative

The European Community finances disaster management projects through its cooperative agreements with eight Pacific ACP countries. Each of these countries can earmark part of their National Indicative Programme for disaster management, or they together might request regional projects for disaster management. A regional project on disaster management is being considered under the fourth Lomé Convention.

Mr Baldwin gave examples of disaster mitigation activities which have been funded by the European Community outside of the Pacific. These include the Food Early Warning System set up in Somalia, a project to improve regional meteorological cooperation concerning tropical cyclones in the Indian Ocean and a series of regional workshops by the Asian Disaster Preparedness Center on "Improving Cyclone Warning Response and Mitigation in the Asian-Pacific Region". One of these workshops was held in Suva at the beginning of April 1991.

(c) **Japan**

Presented by Mr Satoshi Nakajima, First Secretary of the Embassy of Japan

Since the proclamation of the 1990s as the International Decade for Natural Disaster Reduction, an increasing number of countries had established national committees to promote and implement disaster activities and programmes. Japan hoped all nations in the region would include disaster mitigation as part of their national programmes and that the national committees would play an important role in this regard. Mr Nakajima further stated that Japan believed the activities of the Decade should be closely coordinated with the existing organizations concerned, particularly UNDRO.

For some time, Japan has supported efforts in disaster prevention in the South Pacific, where natural disasters occur frequently. In this regard Japan made a contribution of \$150,000 to the UNDRO South Pacific Disaster Mitigation Programme. It was Japan's understanding that the Forum Secretariat would undertake a greater coordination role in cooperation with UNDRO/SPPO. Japan had also provided assistance in the forecasting of tropical cyclones through the use of observational data from stationary weather satellite. The Japanese Government will give positive consideration to requests for cooperation concerning the expansion and upgrading of the warning network being run as Fiji's weather meteorological office and other UNDP projects. Japan has programmes related to natural disasters under a trainee acceptance scheme of Japan International Cooperation Agency.

Mr Nakajima said in the event of a disaster the Japanese Government stands ready to cooperate in relief activities through the provision of emergency supplies and funds and the dispatch of its international emergency assistance team.

(d) **Food and Agriculture Organization (FAO)**

Presented by Mr D.H.J. Abeyagoonasekera of Food & Agricultural Organization of the United Nations

FAO has specific programmes and projects related to disaster prevention and mitigation which may be of relevance to the region. The programmes and projects cover a number of areas including assistance in agro-meteorology, plant protection, crop conditions and food supply, national food security policies and programmes, and fisheries and forestry sectors. Mr Abeyagoonasekera explained that FAO concentrates its assistance in areas other than the Pacific. However, he welcomed the setting up of an UNDRO office in the South Pacific for this office would provide a focal point for FAO to liaise with the identification and formulation of projects in the agricultural, forestry and fisheries sectors.

(e) **New Zealand**

Presented by Mr Don Will of the New Zealand Embassy, Suva, Fiji

Mr Will confirmed New Zealand's commitment to working with UNDRP and other organizations in the areas of disaster preparedness, recovery, relief, warning systems, long term rehabilitation and mitigation. The New Zealand Government's Ministry of External Relations & Trade coordinates New Zealand's response to a disaster. An Emergency Task Force was recently established by the Ministry to provide a defined structure to be brought into operation in the event of a disaster. The Coordinator of the Task Force has responsibility for ensuring that New Zealand provides an effective response to affected countries. The Task Force works closely with the New Zealand Defence Force. New Zealand also places considerable emphasis on helping with long term rehabilitation through its aid programmes to assist the world's developing countries.

New Zealand has been involved in a variety of measures within the region to minimize the loss of lives and damage caused by disasters. This country assisted the Tropical Cyclone Warning Center in Nadi through technical assistance, and the New Zealand Meteorological Service provided a back-up for the Nadi Centre should the Nadi Centre be incapacitated during a cyclone. Radio New Zealand International receives weather bulletins from Nadi and broadcasts these to the region.

New Zealand has assisted with a number of development projects related to disaster reduction, such as a project in Tonga to build modular houses able to withstand cyclone-force winds.

(f) **League of Red Cross Society**

Presented by Mr Xiaohua Wang of League of Red Cross Society, Regional Office, Sydney

The League's function is to contribute to the development of the humanitarian activities of its national societies, to coordinate the relief operations for disaster victims of national societies, and to care for refugees outside of conflict and, in so doing, to promote peace in the world. Mr Wang said a crucial part of the League's work is providing and coordinating assistance to victims of disasters through its member society in that locality. Based on information and requests the League receives from the afflicted areas, the League appeals to other national societies for assistance. In countries that regularly are at risk from particular kinds of disaster the League helps national societies develop disaster preparedness plans. The League also assists the development of new National Societies, to be officially recognized.

There are six National Red Cross Societies in the South Pacific, two of which are Donor Societies. Mr Wang said there are six other national societies now being formed in

the region. The League has always attached a very high degree of importance to the development of Red Cross activities in the Pacific region. It has established an office, the League Pacific Delegation, in Sydney for the development of Red Cross activities in the region.

Mr Wang stated that in planning and implementing the League's programmes in the region, the League Pacific Delegation will seek and maintain a close and fruitful cooperation with the International Committee for the Red Cross (which has the prime responsibility for man-made disasters) and other organizations, including UN Agencies.

(g) **USAID**

Presented by Mr Kirk Dahlgren, Programme Officer for the US Agency for International Development (USAID), Regional Development Office, South Pacific.

Of US\$125 million provided by USAID to the South Pacific region since 1977, US\$8 million has been allocated to disaster response and preparedness activities. Mr Dahlgren explained that a recent World Bank draft report showed that growth in the region had been sluggish despite massive aid per capita in the region. The Report took note of the effect of disasters on growth, but since a crucial table had been left out of the draft, Mr Dahlgren suggested that UNDRO or the Forum Secretariat might request the World Bank to provide background materials relating to that portion of the report. UNDRO or the Forum Secretariat might review the possibility of studying the wider impact of disaster on economic growth. The result of such a study might further convince donors of the wisdom of investing in mitigation activities.

(h) **OFDA**

Presented by Ms. Joanne Burke of the Office of the US Foreign Disaster Assistance (OFDA), Washington, D.C.

Apart from relief and response OFDA activities, OFDA is developing a worldwide programme in disaster prevention, mitigation and preparedness, and seeks to coordinate its activities with other agencies. The programme will support the application of proven or promising technologies, approaches or techniques for prevention, mitigation or preparing for known or probable disasters. To develop the program, OFDA has recently completed a world-wide analysis of hazard vulnerability. Also, OFDA has identified countries most vulnerable to natural disasters and priority areas where the program will be concentrated. The program will clarify the linkages between disasters and development and a substantial share of the program will provide direct support to USAID bilateral programs.

(i) **Special Presentation by H.R. Dovale, - National Disaster Coordinator for St. Maarten, Caribbean**

Mr Rudy Dovale's presentation centered upon the problems he had experienced in the Caribbean, in relation to public and private sector support for disaster management. There were commonalities of experience between the Caribbean and the South Pacific, he suggested, with regard to disaster management in small and developing island countries.

He had found disaster mitigation and prevention programmes often were difficult to "sell" at the political level. An awareness to these issues needs to be raised first and the cost/benefit aspect has to be thoroughly examined. Mr Dovale also made mention to the four C's of aviation - Climb, Communicate, Confess, and Comply - of which communicate and comply were referenced to as a vital component for effective disaster and stress management during crisis periods. Mr Dovale's central message was that there should be a concerted effort not to repeat or duplicate the same old procedures, but to find new and more effective solutions which are more practical, given national or regional conditions, for improving disaster management and, particularly, mitigation.

IX. PANEL PRESENTATIONS

There were four panelists, each addressing specific issues of disaster management:

(a) **Ms. Annmaree O'Keeffe Director of Refugee and Disaster Co-ordination Section, AIDAB, Canberra, "Financing Disaster Projects: AIDAB's Experience in the Region".**

Ms O'Keeffe spoke of the global changes which are occurring due to catastrophic events of both natural and man-made nature and gave a range of supporting examples, extending from Iraq and Africa and the South Pacific. She explained that AIDAB, as the aid agency of the Australian Government, responded to requests for assistance requests in a number of ways, from shipping relief supplies to funding programmes for rehabilitation purposes. The number of pressing requests for assistance over the last decade had put a considerable financial strain on AIDAB's budget for aid and assistance. This had prompted AIDAB to rethink certain aspects of their approach.

AIDAB's definition of disaster and emergency was that an emergency encompasses everything while a disaster may be a short-term extreme emergency situation. AIDAB's measures to reduce the effects of disaster include disaster prevention and mitigation measures, preparedness measures, relief, and recovery measures. Not all of these measures were handled through the same procedural network since some were more long-term than others. In order for AIDAB's assistance to be effective, priorities had to be set, the levels of assistance determined, and priority recipients identified. The Pacific region is at the top of AIDAB's priority list for physical, financial, and technical assistance.

Assistance should be implemented using all available methods of information exchange and cooperation. This is facilitated by the good relations between Pacific island recipients and AIDAB, the proximity of the region to Australia, and Australia's understanding of regional problems. To provide the most effective assistance, history, economics, social aspects, in-country capabilities, political aspects, and particular risks need to be considered. Such knowledge assists a donor agency to give people timely and necessary assistance.

Ms. O'Keeffe referred to AIDAB's history of assistance to the region, its plans for future activity, and its willingness to cooperate in any way possible. However, AIDAB had some concerns regarding UNDRO's role as a coordinating agency for the region. Regional coordination in the past has been very difficult to accomplish and this experience needed to be examined. She proposed that it would be more appropriate for an agency such as UNDRO to act as a communications and cooperation "clearinghouse" and that co-ordination may eventually result. It should not, however, be the initial objective. Australia appreciated UNDRO's tentative approach in floating the concept of its presence in the region. She welcomed the convening of the seminar as a way of exchanging views on UNDRO's proposal.

(b) Mr Brian Ward, Director, ADPC, Bangkok. "Training in Disaster Management".

Mr Ward discussed the need for training and emphasized the necessity to improve professionalism with regard to disaster management in the South Pacific. As to where these needs lay most, Mr Ward described the need for compromise in training. He agreed that in some cases, as was pointed out by Dr Kavaliku, the "less than perfect" approach might be most effective, especially in small countries of limited resources and capability. A good disaster manager has to be a good overall manager, with the extra crisis management skills and the right tools to work with. In some small country cases, a highly-qualified professional might even be somewhat of a burden. The need was to upgrade existing knowledge, not teach new or foreign concepts which may be impractical. For training to be effective it has to be properly thought out and applied to specific country needs.

Mr Ward examined four points relating to training for disasters: disaster management training, policy sensitization, skills training, and public awareness. He discussed at length the important aspects of each point, and how this four point approach could be applied to the South Pacific. He further identified four handicaps of the South Pacific region with regard to training: the shortage of experienced teachers, the paucity of proper teaching materials, lack of an appropriate institutional base, and limited opportunities for information exchange.

Concern was expressed about the concept of training trainers. There were several reasons why it may not succeed. The most obvious was that of time constraint. It is one thing to send an official for training and another to expect him to come back and pass it on, thus adding to his existent work load. In addition, the person receiving training may not be capable of teaching others effectively.

Mr Ward emphasized that management training needed to be taught by practice, simulation of events, and through translation to localized needs. Local resources should be examined for their viability as a training station, prior to looking at overseas options. Again it was pointed out that in small countries with limited resources this would be a difficult task.

Mr Ward expressed his support for UNDRO in the region and made mention of the importance of information exchange in what he called "the three way process" - sharing laterally between regional countries and local counterparts; sharing from donor to recipient; sharing from recipient to donor.

(c) **Mr J.B. Blake, Director, AODRO, Sydney. "Roles of NGOs in Disaster Management":**

Mr Blake defined 3 categories of Non-Governmental Organizations (NGOs): locally born "Grass Root" NGOs (women's groups, social organizations); international NGOs (Red Cross); and churches.

He stressed that even though local born NGOs may not have outside country contacts, they possess certain level of useful and effective resources. The "grass root" NGOs have strong ties at the community level, but as they move upward, these ties weaken. With international NGOs, it is the opposite. The question then is how do we get these "grass root" NGOs and the more formal international NGOs to a common ground? The focal point needs to be achieved for these two groups to function more effectively.

Mr Blake explained a formula he used to define disaster and pinpoint the capacity of NGOs to assist:

$D=H+C \rightarrow Cr$; i.e. Disaster (D) is Hazards (H) interacting with Community (C) to create Crisis (Cr).

He pointed out that NGOs must be able to cope with crisis to be effective. If such organization can not function in this area, they may simply get in the way of other relief or rehabilitation actions. NGOs should also be able to deal with the hazard and function at the community level. NGOs could also usefully work at the integration of mitigation measures into their community programmes, to initiate grass-roots mitigation, although this may be difficult to do where resources available to the NGOs are limited.

(d) **Ratu Meli Bainimarama, Permanent Secretary for Fijian Affairs & Rural Development. "Roles of National Disaster Council in Disaster Management: "The Fiji Experience".**

Ratu Meli Bainimarama, gave a brief descriptive account of the role of the National Disaster Council in Fiji and of the problems encountered by EMSEC during Cyclone Sina.

Ratu Meli stated that NDC and EMSEC are considering ways in which they might expand their activities to include disaster prevention, preparedness and mitigation. A major re-organization of these organizations is being planned.

The Fiji Government noted after Cyclone Sina, in November 1990, that EMSEC had a number of substantive problems. Information gathering and dissemination was not timely and accurate, nor was it supportive to decision-making. Teams surveying damage were not using uniform procedures. The operational capacity of their Emergency Operation Center was, for the most time, only at monitoring level, if working at all. Staffing problems included people being inadequately trained, improperly briefed, or poorly motivated. Evacuation centers were known to be not fully functional.

Current procedures for managing disasters in Fiji are now out-moded and a total revision to include preparedness and mitigation is in the process of being planned.

X. WORKING GROUP DISCUSSIONS

(a) Function of National Disaster Councils

The working group generally agreed that the roles and functions of NDCs were already clearly set out in seminar documents. Many Pacific island countries already have NDC responsibilities clearly outlined either formally or informally. The lesser form of management in small countries should be continually examined to ensure that it provides the most effective service under prevailing circumstances. NDCs are mostly activated only during disaster periods. The non-regular nature of activities of NDCs, is a negative factor in their effective organization. They should be actively engaged on a continuous basis in training, public awareness programmes, self-reliance programmes and preparedness and mitigation in general.

(b) Roles of NGOs in Disaster Management

The size of NGOs and their capacities for utilization of resources vary by country. The Working Group agreed that this needs to be recognized and considered in the provision of assistance. Some countries already have special NGO coordination bodies, for example, TANGO in Tuvalu. Churches are vital, they have large and useful resource bases. The conclusions of these discussions are included in the Recommendations and Conclusions, on pages 28 and 30 respectively.

(c) Training for Disasters

Several aspects of training were identified as requiring comprehensive assessment. These were:

- the need for country specific and event specific training;
- a requirement for special training for air and maritime disasters;
- the development of in country public awareness and skills training;
- the need for international assistance;
- development of resources for video training programmes; and
- the establishment of roving training teams of regional people.

The inclusion of regional academic institutions such as USP and others into training programme development was also considered to be appropriate.

(d) The Financing of Disaster Management Projects & Activities

It was generally agreed that the identification and financing of projects was not a problem. Rather, this was for projects to be presented in appropriate ways and information exchange fostered. Discussions centered on the need to develop a pre-disaster attitude towards projects. Most projects which are financed are related to the post-disaster situation. More emphasis needs to be placed on integrating mitigation into project design and formulation. To this end the lessons of past experiences need to be considered. UNDRO/SPPO could usefully act as an information "clearinghouse", as a catalyst to make recipients and donors more aware of the total disaster management climate. In this way, SPPO would assist donors and countries to integrate mitigation measures into disaster planning and with providing assistance.

UNDRO/SPPO should play a leading role in promoting mitigation awareness, as the focal point for information gathering, compilation, and dissemination to the region. A complementary role for UNDRO/SPPO would be, as a resource center for technical assistance.

(e) Disaster Development and Insurance

Discussants agreed that there was an urgent need to generate proper levels of risk awareness for decision makers. This would include arrangements to pool resources, to study loss expectancy, studying probability patterns of events which lead up to disasters, formulating suggestions for rules and codes and for reviewing existing codes, and developing detailed recommendations related to disasters, development and insurance. It was considered important that donors do not hold the attitude that projects should conform to their needs, rather projects need to conform to the needs of the recipients. The need for better information exchange and coordinated cooperation was of paramount importance and UNDRO/SPPO should be given the responsibility to undertake this role.

(f) A Combined Pacific Island Countries Statement

The island countries jointly expressed their support for UNDRO/SPPO's presence in the region. However, of common concern was the situation that the office had been established after a UN mission to the region which did not directly involve the countries of the region. They pointed out that this approach had been unsuccessfully tried in the past and gave several examples which illustrated this point. They stressed that if UNDRO was to be successful, liaison with the island countries was essential.

The island countries requested that the issues raised by Dr Kavaliku to be seriously and strongly considered and stressed that they were very much in agreement with his views. They also emphasized to the Donors and NGOs their common desire to active and positive support UNDRO/SPPO, so it could effectively become the "clearing house" that participants at the workshop had, together, endorsed. Finally, the island countries asked why the UNDRO office was called a Project office and stated that they could more easily understand and work with UNDRO under the umbrella of a programme office.

XI. REVIEW OF SOME DISASTER MITIGATION ACTIVITIES IN THE REGION

(a) Dr David Parkinson, WHO Representative, Western Pacific Regional Office

Dr Parkinson presented a paper on Integrated Health Management and spoke on health issues related to disasters. When disasters occur in the Pacific, the response is to get people back on their feet. However, there is no really typical situation and each disaster requires an individual approach. It is important to undertake certain activities well in advance of disasters so that everyone in the community knows what might be expected of them. It is important to have a disaster preparedness plan in place to avoid wastage of resource and to respond effectively.

Dr Parkinson outlined a demonstration model designed to operate within the infrastructure of the health services of Western Samoa, to cope with health issues related to disasters. It was hoped that health-care systems would be developed that would be relevant not only to Western Samoa but could also be modified to be relevant to other Pacific island countries. There was an important need for collaboration of various international, national governmental and non governmental agencies in the management of health related aspects of disaster mitigation, preparedness and relief.

(b) Mr Roland Lin, Principal Engineer, River Engineering Programme, Ministry of Primary Industries and Cooperatives

Mr Lin made a presentation on Fiji's River Improvement Master Plan. The project, which emanated out of Cyclone Wally, aims not only to propose the most cost effective and economically viable flood mitigation method for the Rewa River but also to develop

methodologies for similar exercises with Fiji's other rivers. The biggest constraints to the project are data quality and lack of trained staff to analyze data.

(c) **Mr Trevor Lawson, Senior Engineering Geologist Ministry of Land & Mineral Resources**

Mr Lawson outlined the South-East Viti Levu Landslide Project. Phase One of the project which is now underway, focuses on the collection and analysis of information on landslides, reconnaissance mapping and limited drilling and materials testing. Phase Two will consist of developing case studies. Phase Three is planned to involve the development of systems of risk zonation, slope design, landuse practice and the installation of an effective warning system. This 3rd Phase will depend heavily on funding from external aid sources.

(d) **Dr John Skoda, Chief Technical Officer, Water Resources in the Pacific Project, UNDP**

Dr Skoda spoke on flood and landslide hazard mapping in the Solomon Islands. This work followed on a reconnaissance assessment of the impact of Cyclone Namu and a preliminary assessment of hazards in a single watershed. Hazard assessment depends on the availability of fairly long term weather and stream flow records which are presently unavailable. While information can be obtained from a study of geological deposits, the results could only be approximations as conditions of watersheds and of the stream change.

Flooding and landslides may improve the fertility of an area, but people should be advised not to live in risk areas. In the study area, most villages are located in areas mapped as safe. However, where schools or other structures are not located in safe areas, an assessment need to be made regarding cost of removal, its replacement or protection, and or the strengthening of the structure and providing means for communication for evacuation. The next logical phase is dissemination of information about the hazards so to better locate centers and plan for response to disasters. Training should focus on the trainee being able to operate within his own environment with regard to water supplies, several sources of water should be developed.

XII. SEMINAR CONCLUSIONS

In his summary of the proceedings of the three-day seminar, Air Vice Marshall, Nick Carter, concluded that the seminar had been successful. This was due in large part to excellent organization and an effective mix of highly experienced disaster management speakers and presenters, and appropriately selected subject areas.

He found that, in the Pacific, there was a good understanding of disasters and the problems of response, the requirements for meeting the problems, and the roles of island Governments in this process. However, because the effects of disasters were usually

unpredictable and far-reaching, there was no place for complacency and a great deal of effort should be directed towards mitigation and preparedness activities.

The fact that disasters affect development makes it imperative that island country development plans have disaster mitigation requirements built in to them. This would reduce the costs of rehabilitation of the population and recommissioning of infrastructure afterwards. Mr. Carter reiterated the points emphasized by Dr Langi Kavaliku and Dr Kilifoti Eteuati that, in the final analysis, national disaster policies and the *modus operandi* in practically dealing with the critical elements of disasters were the prerogative of each sovereign state. He advised that disaster planners should pay more attention to the national experience which encompasses culture, tradition and other skills in dealing with disasters, as clearly illustrated by the case study on Cyclone Ofa presented by Dr Kilifoti Eteuati.

Although there was a great deal of experience in dealing with disasters, Mr Carter concluded that regional countries continue to face difficulties which cannot be removed overnight. These difficulties include the availability of resources, the maintenance of preparedness and awareness levels, financial support for disaster management development and the attitudes of governments to mitigation and preparedness activities. Because these difficulties will not be solved immediately, Dr Kavaliku had pointed to the crux of the problem when he asked whether or not there was some form of minimal system which could be devised and to be used as a basis for disaster management, which could then be expanded upon when the need arose.

He noted with interest that, throughout the seminar, there had been no serious reference made to regionalization or to the co-ordination of a regional response to aid agencies. Dr Kavaliku had insisted that co-operation is possible without international or regional co-ordinating bodies. Ms O'Keeffe of AIDAB had re-inforced this view by saying that while communication and co-operation were acceptable and necessary from the viewpoint of a donor country, co-ordination was much more difficult to negotiate and put in place. Mr Carter argued that this did not, however, detract from the fact that there is a great deal of validity and immense value in regional programmes by U.N. agencies and other established bodies such as Red Cross.

Because we live in an interdependent world, particularly in terms of the environment, international assistance with regard to disaster management could not be considered to be demeaning to Pacific countries. However, the proper utilization of such assistance is a two-way exercise and is dependent on such parameters as a clear definition of programme aims, professional inputs from assistance agencies, in-country disaster management structures, the absorptive capacity of recipient countries, and so on. There continues to be a tremendous amount of good-will amongst donor agencies and regional governments which encourages Pacific disaster problems to be approached in a spirit of sensible national and international co-operation. The scope of the opportunities available for disaster-related assistance for island countries from various UN and bilateral agencies and other international sources was therefore very wide. However, Mr Carter advised regional countries should adopt an astute

approach especially to multi-sectoral development opportunities which also offered possibilities of improving disaster management. The firm base for further development of national capabilities for dealing positively with natural disaster, through donor assistance, as already, therefore, in existence.

Turning to the future, Mr Carter re-emphasized the advice given by Dr Langi Kavaliku, that the success of this seminar could only be measured by the extent to which action was taken on its recommendations. He urged the international and other donor agencies to continue to build on their programmes in the region, and at the same time, to clearly identify and respect the absorptive capacities of regional countries. The IDNDR and the setting up of the UNDRO/SPPO provided opportunities and the impetus for donor agencies and regional countries to progressively improve national capabilities in the wide spectrum of disaster management. The encouragement of dialogue between governments and donor agencies would help to strengthen links and facilitate necessary emergency assistance.

Throughout the seminar, donor agencies and country delegates alike had remarked upon the need to develop a communication and co-operative capability amongst countries in the region, and between them and the various aid donors. Mr Carter therefore encouraged the Seminar participants to accept Dr Kavaliku's advice to establish an annual meeting of Heads of Disaster Management. Such a meeting could also include agencies, and work towards information exchange and provide opportunity to discuss problems and their possible solutions. To establish such a meeting would require the intervention of the Forum Secretariat at a future Heads of Governments Meeting.

To further, the objective of communication and co-operation, Forum island countries, and donor agencies were encouraged to support and work with, UNDRO/SPPO. The function UNDRO/SPPO was to co-operate with regional countries in the development of disaster management capabilities, and to act as a clearing house for information for national governments and donor agencies on all aspects of disaster management, particularly with mitigation and preparedness. To facilitate this role UNDRO/SPPO should develop a close liaison with the Forum Secretariat which would offer a useful access to regional governments. UNDRO/SPPO would further offer another important option for assistance to regional countries, supporting rather than intruding upon those available. It would provide a direct line to UNDRO, Geneva and even more importantly, to the wider international community.

XIII. RECOMMENDATIONS

Institutional

(i) Small Pacific Island countries will continue to experience difficulties in disaster management capabilities in the foreseeable future. Challenges to development include available resources, establishing appropriate management structures, maintaining cadres of trained personnel, raising public awareness levels, increasing assistance absorptive

capabilities, ensuring accountability and so on. There was therefore, a need to develop a communications and co-operative relationship amongst countries, and between them and the various aid donors. This would be for the purpose of information exchange and formulate practical solutions to particular problems. To achieve this objective, the seminar strongly recommends the establishment of an annual Heads of Disaster Management meeting under the auspices of the Forum Secretariat in close co-operation with UNDRO/SPPO.

(ii) The Seminar further recommends that because of the urgent need for the speedy establishment of disaster management facilities in South Pacific countries, that the Forum Secretariat places this recommendation before the next convenient meeting of the Heads of Forum Island Countries.

(iii) UNDRO has been active in the provision of relief during disasters in the Pacific for a number of years. During this time it has operated from the offices of the UNDP. UNDRO has now set up a South Pacific Programme Office in Suva with a new focus, especially during IDNDR, on mitigation and preparedness. Pacific Island countries are urged to view UNDRO/SPPO as a clearing house for disaster-related information, to support its role in mitigation and preparedness in the various countries, and to co-operate with it in its negotiations with the international community for the resources needed to improve effective management of disasters.

(iv) Because IDNDR has been promulgated and accepted as a UN development theme over this decade, Governments of the small countries in the region are urged to charge their respective NDC's and planning offices with the responsibility to examine all future development plans in the light of disaster mitigation requirements. Although some regional countries are more prone to disaster than others, and that in others, the overall disaster threat tends to fluctuate, disaster reduction developments maintain their disaster-resistant characteristic whether they are subjected to immediate threat. UNDRO/SPPO is available to provide valuable support role to national IDNDR disaster management activities.

(v) The island countries expressed their support for UNDRO's presence in the region through the establishment of SPPO, but expressed some concern that the office was set up after a UN Mission to the region without the direct involvement of all the countries of the region. It was clearly stated that without close liaison with regional countries, very little could be done by SPPO. Because of the valuable "clearing house" function that UNDRO/SPPO would perform, the island countries emphasized that donors and NGOs should actively and positively support this office. Furthermore, it was recommended that because of the particular role that the SPPO was assigned to play, that it be referred to as a "programme" rather than a "project".

(vi) UNDRO/SPPO should establish a regular newsletter which would serve as a vehicle for the dissemination and exchange of disaster related information. It should provide issues that are specific and relevant for the Pacific region.

Training

(i) Training needs to be directed specifically towards the types of hazards that affect each country. It should cover all relevant disciplines and be structured for all levels of the disaster management structure. Before the types of training needed can be determined, however, it is necessary that a comprehensive inventory of training needs, resources and training institutions be prepared. UNDRO/SPPO should co-operate with countries in the preparation of such inventories.

(ii) Once training needs have been established, roving teams of trainers consisting of one Expert Team Leader and local trainers should be set up to provide in-country training to disaster management personnel up to certain skill levels. Other management training will still have to be undertaken at appropriate overseas institutions. UNDRO/SPPO would be expected to co-operate in soliciting assistance for this exercise once countries are ready to receive training.

(iii) Appropriate and ongoing public awareness programmes must be developed for each country using effective mass presentation systems available in the country. These programmes should not only be directed at the general population but also form a part of the curriculum in schools. UNDRO/SPPO to co-operate with countries in the mounting of such programmes.

National Disaster Committee

(i) In the interest of effective disaster management, countries which do not already have National Disaster Committees are strongly urged to establish them. Resources needed for this exercise can be solicited through UNDRO/SPPO. This also applies to reviews of existing NDC's and operational facilities.

(ii) Many small island countries do not have the resources to establish permanent disaster management teams. Under these circumstances "floating teams" consisting of personnel from key line ministries could be established as an alternative, and assembled under the office responsible for disaster management during time of disasters. Appropriate training should be identified and provided to enable these teams to function efficiently and effectively. Again UNDRO/SPPO can have a major role to play in the provision of this assistance.

(iii) National Disaster Committees will experience difficulties in disaster management unless countries have specific disaster-related legislation in place. Legislation provides a formal basis for counter-disaster action generally and allocates major responsibility in legal form. Legislation can further ensure that all levels of the national counter-disaster response receive the full benefit of its support. Such legislation does not need to be complicated to be effective, but should not conflict with other legislation such as emergency powers. Since disasters, the environment and development are heavily interlinked mitigation requirements could very well be written into disaster legislation where appropriate. The Cook

Islands and Papua New Guinea have disaster legislation in place and other small island countries are strongly encouraged to follow suit. Here again UNDR0/SPPO can be expected to provide the necessary technical assistance to support the implementation of such a project.

(iv) Some countries do not have national disaster plans, and those existing now require substantive review. UNDR0 has been able to provide the necessary technical assistance for the preparation of counter-disaster plans and can be expected to support assistance where required.

Financing

(i) The Financing of disaster related projects is not generally a problem since there are a number of bilateral, multilateral and international schemes in place for the provision of appropriate grants and loans. The problem is more disseminating information on the various schemes available and the type of assistance provided by each, and how to apply for the type of assistance needed. In its role as a clearing house for information, it is contingent upon UNDR0/SPPO to collate all the information on disaster-related financing schemes and to disseminate it to all the countries of the region. Furthermore, UNDR0/SPPO should provide assistance in the identification of the appropriate donor agencies for countries which require such assistance.

(ii) While countries commonly request financing for projects which have a post-disaster theme, there is an urgent need for attention to change towards the development of a pre-disaster situation. Disasters should be considered as integral negative elements in the process of development. All development plans for key sectors of the economy should have disaster mitigation plans built into them. Because such plans serve to protect investments, they would have a greater success in further.

Disaster, Development and Insurance

Disasters are closely linked to development. Insurance is a modern approach to the protection of investment in development. While it may be possible to obtain insurance cover for houses, factories and such structures, obtaining insurance cover for crops, livestock, would be very expensive and virtually impossible to obtain in the small island states. Nevertheless, avoid heavy investment losses in investment, small island countries are urged to seriously consider the following:

(i) The level of risk awareness must be raised amongst decision-makers and development planners. A Risk-analysis of all development projects must be considered of priority. Hazard or vulnerability mapping of the entire country relative to the types of disaster to which it is prone is a matter of urgency.

(ii) A detailed study of losses in previous disasters, including human lives, should be compiled. This would serve to provide a "guestimate" of losses to be expected after the future disasters. Studies of the return period patterns of such disastrous events should be undertaken to provide a "guestimate" of the timing of the next visitation. Detailed development recommendations related to insurance and assistance can only be obtained from insurers once the data on damage and the other probability aspects of the disasters has been investigated.

(c) As a result of the findings of risk analysis studies, governments are encouraged to develop rules and codes that would mitigate against the effects of disasters. A building code would increase the cost of a building but it would still be less expensive than having to rebuild the entire structure after it had been destroyed. Similarly, it is possible to protect investments by more systematic location, for example, building on a part of the valley which is not flood prone will render investments safe from that hazard.

UNDRO/SPPO can be expected to solicit the assistance needed by any of the small island states for studies to be undertaken in the areas mentioned in this recommendation.

Roles of NGOs

(i) While recognizing that particular disaster situations will largely dictate priorities, NGOs should generally develop their capabilities to operate effectively in relief and recovery operations and mitigation and preparedness activities.

(ii) NGOs should urgently address problems which limit their effective involvement in disaster management. Such problems include a lack of understanding by Governments of their potential, to assist, the lack of their own adequacy to cope with disasters, a policy amongst certain NGOs to provide assistance only to their own "flock", and an understanding by NGOs of the positive contribution they can make towards activities.

(iii) It is essential that NGOs with an interest in disaster-related activities seek to improve the effectiveness of their involvement with disaster management by obtaining representation on official disaster committees, seeking early and quick release from import duties of emergency aid provided by overseas donors, the provision of training for members, the conduct of simulation exercises, and the development of operational plans for disaster responses.

(iv) NGOs should seek to obtain private sector support by raising awareness amongst the business community of their important role in disaster management, by acknowledging commercial sponsors on all public awareness material produced, and by encouraging a philosophy of self-help and mutual support in the community.

(v) NGOs should be geared to offer help in fostering community support and public awareness about disaster management.

(vi) NGOs should develop guidelines to strengthen their roles in the preparedness and mitigation aspects of disaster management.

While the Seminar Recommendations, were wide ranging, a theme throughout was that UNDRO/SPPO was a welcome participant in the task of strengthening disaster management in the South Pacific region, and that there were a number of immediate useful tasks SPPO could perform. The seminar therefore, fulfilled its original objectives in all aspects. In bringing together country representatives from the region, donor agencies and NGOs, the seminar provided a useful forum for discussion of priority issues in disaster management. It further contributed to an exchange of information between representatives of NDCs and the consensus that emerged from these discussions was that SPPO would have a useful, positive role in promoting disaster management in the South Pacific region.

APPENDIX A

OPENING ADDRESS BY LT. COL. VATILIAI NAVUNISARAVI MINISTER FOR FIJIAN AFFAIRS AND RURAL DEVELOPMENT

INTRODUCTION

I must first of all welcome each and everyone of you who have gathered here today and hope that your interaction in the course of the programme would be meaningful and at the same time enjoyable. But let me sound out a word of warning - please beware of the Fiji hospitality, otherwise you will not be able to cope as the programme gets underway.

In the past, we in the region tend to regard natural disaster as part of our life simply because our countries are vulnerable to a number of natural hazards such as cyclones and floods. This often develops a tendency that governments will always have the capacity to provide assistance following natural disasters inspite of their intensities.

However, there seems to be a global trend in which natural disasters are now occurring at destructive levels and which is overtaking our ability to cope with them. This has contributed to colossal loss of life and property, causing economic disruption, social disorder and in some cases, even to the extent of political instability. This seminar on "Strengthening Disaster Management in the South Pacific", therefore, has come to an opportune time to address this global problem that has crippled so many countries, and the South Pacific region is no exception.

In early 1990, UNDRO sent a "South Pacific Mitigation Needs Assessment Mission" to the region. The mission, in consultation with governments in the region, identified the need to strengthen disaster management at the national and regional levels so as to enable countries to cope with the adverse effects of natural disasters on the island economies and their people. To better assist island governments to mitigate and prepare for disasters, UNDRO set up a regional office in Suva, known as the South Pacific Project Office. (SPPO).

I also wish to thank the Forum Secretariat, UNDP, as well, as other regional and international agencies here today, for their continued support and commitment in this area.

To the visiting resource persons, we are all here to learn from you and whatever knowledge acquired in the course of this programme would go a long way in addressing this

very important subject. To those who will be participating in this programme, frank exchange of views and ideas as you relate personal experience and disaster management systems operating in your country, should be a big plus for the seminar.

We in Fiji have had our fair share of problems with natural disasters, with cyclones and floods which, apart from taking a toll of lives, brought disruptive effects to the economic and social well-being of the country. Cyclone Bebe in 1972 was the most devastating. It left twenty people dead and total loss of government was estimated at \$20 million. It took several years to restore the economy to pre-1972 level. In 1986 alone, the country was devastated by four consecutive cyclones leaving a death toll of 19 and total loss to the government was estimated at \$19 million. In so far as national development is concerned, planners, economists and developers are increasingly conscious of the impact of natural disasters on the development process and therefore are now integrating disaster management system into the overall national development programme.

With a view to strengthen Fiji's disaster management capacity, the emergency services function dealing with natural disaster was transferred from the Ministry of Home Affairs to the Ministry of Rural Development at the beginning of last year. Government emphasis in the past was very much centered around emergency response and post disaster relief and rehabilitation. With the change in emphasis, focussing on the whole disaster spectrum, it was considered appropriate that the Ministry of Rural Development handle this task, given its resources and organizational capability. However, our disaster management capability is very limited because of resources constraint and the absence of local expertise and know-how on disaster management systems and practices.

Last year two Study Missions visited the region to look into the disaster related needs of island states. Mission members were specialists and highly regarded in disaster management circles and it was through their vision that we are all here today. I am happy and no doubt most of us in this room share the same feeling, to again welcome mission members who are also here for this seminar, most of them coming all the way from the other side of the globe. Your visit last year has been very fruitful as you can witness today.

This seminar, I believe, is in line with the goals and objective of the international decade for natural disaster reduction (IDNDR). It is therefore important for small island states to take full advantage of assistance provided by international agencies similar to the one SPPO has organized for us, if we are to make positive contribution to the decade.

Now that UNDRO has set up a regional office for the South Pacific, with their first seminar ready to get underway, I believe that the outcome of the seminar will greatly enhance UNDRO's role in the region and should provide SPPO the direction in the development of their disaster management related projects for the region.

This seminar is important because at the end of it, country representatives should be able to set priorities and outline a framework of action for their own countries. With your

experience in the various disciplines you represent, I am sure you can achieve this. Furthermore, I am sure bilateral and multilateral agencies present here today will be able to co-ordinate and consolidate their assistance programme to ensure countries receives maximum benefits.

To effectively cope with natural disaster, it is essential that we have in place effective disaster management systems that provides for the safety and stability of it's people and economy. To this end you have an important part to play in the socio and economic development of your respective countries, in the realization of initiation and implementation of appropriate disaster management systems and practices.

Distinguished participants, the theme and basic objectives of this seminar is to "strengthen disaster management". Based on your findings in the course of this seminar, I hope that we will be able to formulate a common and coordinated approach and plan activities that will achieve this objective. This seminar, as I see it, is just the right forum for this.

With those few words, I have pleasure and the honor to officially open this seminar, and I wish you all the success in your deliberations.

Thank you.

APPENDIX B

CHIEF KEYNOTE ADDRESS

BY

**Dr LANGI KAVALIKU
MINISTER FOR
EDUCATION, CIVIL AVIATION & WORKS**

I am honored to be asked to address this Regional Disaster Management Seminar. At the same time, however, I have been wondering as to why I have been invited and what qualifications do I have to justify my being invited.

After due consideration, I have come to the conclusion that the only qualifications I have, is that unlike all of you have today, I am a layman who has lived through failures and a few success in disaster management and not a professional and therefore, unlike you, I am not too sure about what really should be done. I hope therefore that you will bear with me if I tend to be "thinking out aloud" about the problems and issues in disaster management rather than informing you about what should be done. What should be done, I presume, is why you professionals are here this week and not laymen like myself.

Pacific island countries experience the impact of natural disasters quite regularly. They show a high degree of vulnerability to natural disasters which further complicate the complex mosaic of physical, social, economic and political patterns of living and development in these diverse island communities.

But in this the Pacific islands are not the only ones - many or indeed most countries in the world are vulnerable to a lesser greater degree to natural disasters.

This is why, I am sure, amongst many objectives established by the UN for the final decade of the 20th century, is that of the International Decade for Natural Disaster Reduction (IDNDR).

This objective also reflects the highly visible dramatic and traumatic effect that natural disaster has on all peoples both in the industrialized and developing countries; the worldwide concern with the real and great impact of natural disasters on physical, social, economic and political life of countries; and the recognition that for most natural disaster experienced there must be both national and international cooperation to provide any hope of either reducing its impact or allow for recovery let alone continuing development.

Whatever else is the impact of natural disaster on countries, they affect two major critical areas: (1) lives - lives in hundreds and thousands, (2) resources - resources in the millions and billions. And because of the great impact of natural disasters on two critical areas, one could not keep but talk management. Indeed, disaster management has become the essential catalyst for any hope of success with mitigation, preparedness, response, recovery and development.

The expert in management will argue that there are basic principles of management regardless of socio-cultural differences that we must adopt if we are to succeed. I do not believe that any of us will doubt that. But the very fact that we are here today - and we were here yesterday and I assume we will be there in the future - implies that the above principles are correct but not enough. It also implies that perhaps, we should also question the very principles of organization and management themselves not so much that they are wrong per se but perhaps the choices amongst many of the principles should be reassessed and changed.

It also implies that perhaps, we should also question the relevance of the "perfect Disaster Management" organization and objectives and learn to live with "less perfect disaster management" because for some countries, they may be the best with the resources available. Perhaps what should also be asked - is there a minimum unit to be established or what I call a floating organization?

Whatever else is implied, and whatever else must be added or subtracted from the principles of management "a la Drucker et al," it is a fact Sui generis the successful patterns of social organization must take into account in its formulation, operation, the complex mosaics woven between physical and social bases of life in any given country.

I assume that this is why the organization of this seminar asked me to say a few words on "Disaster Management Issues in the South Pacific" from a layman's point of view.

The characteristics of the Pacific island regions and Pacific island countries are often described as one of relative isolation and remoteness; widely scattered geographical not only between island countries but also within island countries, limited natural and financial resource base, small and scattered but densely populated communities, limited and yet undeveloped manpower resources, persistent traditional pattern of economic activities and complex and diverse cultural pattern not only between but also within island countries. The combination of these compounded by external factors which rarely influence activity patterns and their success at local, national, regional and international levels. These are the general issues that affect not only organization and management but also its implementation of disaster programmes.

There has been several learned articles, reports and studies on disaster management in the Pacific island countries. Many of these has been done through the auspices of the UN, the World Bank and Asian Development Bank; institution like PIDP, Asian Disaster Preparedness Center organizations like AIDAB and AODRO, country studies and other and

other studies by NGO's, are by experts like a Air Vice Marshall Nick Carter and many of you here today. Indeed the documents distributed for this Seminar makes me wonder whether there is a need for me to speak at all - they are rich in ideas, based on real and diverse experiences and firm theoretical bases.

It seems therefore that many, if not all, of the issues affecting disaster management in the Pacific island countries has already been stated quite succinctly and it seems that my task is to try and list them and hopefully add a few. I can only generalize, but I would like to think that more detail discussions of them will be carried out in the various working groups.

1. PHYSICAL ENVIRONMENT:

The most obvious of the issues affecting disaster management is the physical environment

- geographically remote from each other and Pacific regions;
- geographically scattered;
- many are small island states and relatively large with difficult terrain; and
- except for a few 2-4 Pacific countries has very limited physical resource base.

The physical and geographical environment poses certain problems for disaster management. It poses problems in relation to:

- transport and communication;
- counter-post activities and economies of scale;
- vulnerable eco-systems;
- balancing of the decision-making process between national, district and local levels; and
- difficulties in immediate response phase, to name but a few.

I remember almost 10 years ago - no communications and no transport for four days after a cyclone struck and no preliminary report for three weeks. Transport cost was prohibited - we sought assistance e.g. helicopters, STOL aircrafts and ships. (Last year it took two days to find out what happened and no response possible until ten days in a small way and aid on the scale for population in 6 weeks time). The delays were not appreciated and the population unfortunately were not prepared for such delays.

2. LIMITED RESOURCE:

The second issue for most island countries, is one of rather limited resources.

(i) Natural Resource

- limits scope of local and national activities not only to recover but to continue to develop.
- greater attention to possible uses of destroyed or damaged resources e.g. coconut trees, food crops, trees, coconut thatch houses (traditional) as first response to shelter, preservation of local food crops.
- planned rehabilitation/recovery programmes in agriculture including quick maturing food crops.
- equitable distribution of opportunities. Also high cost of immediate emergency supplies, for example, the cost of water relief supply for Hurricane Isaac was well over \$200 per person.

(ii) Financial Resources:

- cost of response and recovery and development;
- cooperative schemes for housing, food production, cash crops etc.;
- cost/benefit and opportunity cost;
- aspirations, needs and the realities of life - hand-out mentality;
- cooperation and coordination on projects with aid donors;
- heavy reliance on external sources for response, mitigation, preparedness, recovery and development;
- question of political choice - infrastructure/economic/social/food, health etc.;
- ability to move and respond before extra funding is available; and
- inability to find funds:
 - (a) Cyclone Ofa - inability to move food contributed to people from other islands because no money was available.

- (b) UN and UNDRO preferred countries to spend funds and then to reimburse then funds tied down with other purchase of food e.g. cereal, beef, baby food, sugar, flour, etc.; and
 - (c) After two years still no funding available to replace primary schools severely damaged and replace school buildings in two secondary schools.
- re-construct roads.
- (iii) Human Resources:
- Skill manpower requirements from limited human resource base;
 - capacity of trained manpower and labor force to cope with heavy dosage of aid both in money terms and in kind;
 - equity of distribution, assessment and assistance;
 - dealing not only with economic but also with socio-psychological issues;
 - accountability, responsibility and integrity of personnel;
 - decision-making local, national and international level;
 - planning and implementation;
 - natural disaster awareness training programmes;
 - choices in use of limited trained manpower between normal work and disaster management and implementation;
 - national pride in use of local use outside personnel;
 - upkeep and salaries etc. of overseas personnel; and
 - ability to deal in fair terms and real situations with the National Office and the media.

3. TRANSPORT AND COMMUNICATIONS:

- remoteness and geographically scattered or very difficult terrain;
- high cost of either having own transport vs high transport cost if one is hiring;
- delays in response, assessment e.g. after 14 days by courtesy of Australian helicopters able to visit two islands;
- dependent on weather conditions e.g.
 - (a) We tried only boat available - took us 12 hours to travel 48 miles to next island - while trip so rough that it took almost 48 hours for the assessment team to recover. The boat was capable of cruising on 25 miles per hour - it was one of the patrol boats;
 - (b) Nukualofa case - two months boat went five times before able to load and local food wasted as well as planting material;
- lack customs and immigration and quarantine facilities outside of two centers adds cost because of transshipment requirements;
- delay in decision-making process if overly centralized;
- delay in overseas shipping;
- limited port facilities and airport facilities;
- millions of aid money - but fair proportion goes into transport and communications; and
- cost of upkeep of personnel away from home base.

4. TIME FACTOR:

- if disaster strikes often in many ways it ensures a continuing commitment;
- if disaster is not often, interest does not last in spite of socio-political and economic arguments.

5. NATIONAL GOALS AND PRIORITIES:

- ability to be flexible in order to:
 - (a) re-establish priorities;
 - (b) re-allocate funding in budget;
 - (c) ability to respond quickly; and
 - (d) shifting of emphasis of the work of key ministries.
- to marshal all necessary forces for the disaster's post-disaster recovery process.

6. CREATION OF NEW VALUES AND ASPIRATIONS:

- hand out mentality e.g. in some communities they wait for government for food, shelter, clothes etc.;
- use of assistance to meet social obligations and responsibilities, e.g. ship them to non disaster - sell to shops for cash for school fees and church contributions;
- use them for weddings, funerals and church feasts;
- creating new and experience tastes more suitable to cash economy rather than the traditional economy more manifested in small or isolated communities. e.g. tinned meat, rice, milk, tinned fish, stew, fruit salad, more expensive housing style and nationals. I am not saying that they should not get them. They need them. But after several months of these raw things and when the recovery programme is completed, in many cases they try and continue with no cash - children become frustrated, parents saying they do not have enough etc.; and
- occasionally aid in kind before acceptance or know what to do with needs long education process e.g. corn meal, high heel shoes, skate boards, engineer with no spaces and no maintenance training.

7. CULTURAL FACTORS:

- where older people and chiefs have standing and respect, it may be best to have them in the committee (locals or district etc.) for at times public relations and persuasion are necessary - leads to more rapid acceptance.

- value placed on educated and/or big men - it is important that they should be brought in one form or another;
- conflict between equity of distribution based on essence needs and/or traditional patterns of distribution;
- value of ensuring no loss of face in custom even and inspite of democratic outlook (a small gift);
- things you do and say in mixed company and things important but for discussions with women only or with men only;
- traditional welcome ceremonies, hospitality and cooperation;
- those being paid by disaster management assist work - those not paid wait for Government. You must provide some thing e.g. extra rations for those who work hard! They will not expect it in a disaster situation but they will appreciate it - appearance of being just and fair whether high or small; and
- in some cases aid donors and the educated elite and management use the assistance programme to change some tradition and customs. Natural disaster assistance is not to be used as means of changing a society. The society changes from it but it should not be used as such. We are dealing with people who have suffered and their survival and recovery. There are other means for that.

8. FORMAL STRUCTURE & DISASTER PLAN:

There needs to be some formal organizational structure, even if they become operative only before a disaster strikes, and it must have the formal approval of Government. This is especially true if, as in many island countries, the officers responsible are likely to be moved to other responsibilities through normal transfer, promotion or move to other more economically lucrative employment. It is critical if a country is able to use all the limited resources at its disposal for disaster work especially at the response and recovery phase. It is also critical if we are to shift part of the emphasis to mitigation and preparedness. This is essential also for NGOs of greatest value in disaster work. NGOs must be involved in management and implementation.

Every organization at the end is dependent upon political will and the personalities involved. I know of a few cases where there are National Committees and plans but because of the personalities involved, officers who have had the greatest experience and most training has been neglected by those making the final decisions. In small communities, these are realities that management has to live with. This is why a formal structure is necessary and duties and responsibilities specified.

9. ACCOUNTABILITY:

It has always been difficult for disaster management to account for all the assistance it received for all phases of disaster work. This is especially true of island countries that has what I call a floating organization and part-time officers.

But it has to be done. The Government and the people want to know. Those providing assistance wants to know. At the end it leads to good and cordial relationship. It also protects those in disaster management. Yet is not something that is emphasized in disaster management. Perhaps it is assumed that since we use the word management, accountability is implied. However, I would like to know just how many countries has provided full reports accounting for:

- (a) the assistance they received;
- (b) how they were distributed or what they spent it on;
- (c) how it was done; and
- (d) who benefitted.

10. SOVEREIGNTY:

- decision-making, policies and implementation are matters of state. What each country wants to do is their business. What aid donors want to provide and for what purpose that is theirs to do. At times they work out and sometimes they don't. It has to be accepted that this is the *sina qua non* of management work.
- advise would be given and, in most cases that I know of, they are more than welcomed BUT it is sovereign states that makes decisions.

Am a little concern with the proposed Steering Committee.

Am also a little concern with Regional Coordinator role.

You will have to understand that for most of us in the Pacific, our social, economic and political life had been for many a years coordinated for us. It is rather difficult now to gain it and find ourselves again being coordinated in our national life by another grouping.

But this does not mean that we do not want to see cooperation and some coordination. But is must be done between equals on a bilateral basis rather than regional. UNDRO could assist with:

- training
- information and clearing house

- the assistance in kind and/or presence
- perhaps also an annual meeting of heads of disaster management including aid donors to keep each other informed and discuss problems, experience and needs.

Cooperation is possible without international and regional coordinating bodies.

I remember in 1982 after Hurricane Issac, we discussed assistance with Australia - Tonga needs timber for recovery project, Western Samoa and Fiji needs to export more of their timber (preference was from timber from NZ and Australia). We agreed, however, to use the assistance for housing from Australia and to buy timber from Western Samoa and Fiji.

I am aware that for most island countries the emphasis has been and still is on response and recovery. It is therefore gratifying that the UN and UNDR0 is trying to shift some of the emphasis to mitigation and preparedness.

The economic importance of mitigation and preparedness has been in many cases qualitatively and quantitatively proven. But it should be recognized that they are also the hardest to sell because they are, and especially mitigation long term issues. When you have a family and is faced with the proposition of 24 x 16 no hurricane proof housing design to resist to some extent, hurricane force winds and a large house that may accommodate all your family for the same price with no hurricane resistance guarantee, the choice is more of ten that not the bigger house because you have to house your family. Their choice becomes more defective when your per capita income is below middle income level. But we can still try.

In terms of food crops there are some difficulties. You cannot provide mitigation measures for bananas - the best time for bananas is the hurricane season. The best time for watermelons, squash and yams is also the hurricane season. Perhaps we should switch to other crops surely something is possible.

I have briefly listed some of the issues affecting Disaster Management in the Pacific. Because of the time factor, their possible effects and value to disaster management are only briefly discussed. They are, however, critical issues and I hope that more detail discussions will be covered in the various working groups.

I am sure that professionals here have had similar experiences and may have solved some of these problems. It is a difficult task. Nonetheless, disaster mitigation and preparedness are important and I hope this seminar will find ways and means of at least allowing national entities to start even if only in a small way.

But before I sit down, I would like to make a few comments reflecting some rather broad generalization which I also hope may serve as food for thought.

Because of our concerns for and convictions of the importance of natural disasters in our life for you and I as individuals; to communities and nations and to the UN there is now a growing concern with what I call the natural disaster syndrome - reducing all aspects of natural disasters to socio-economic concepts, organizations and institutions. We are now in disaster talk of cost/benefit, vulnerability assessment, management studies, marginal and opportunity cost, equitable distribution, etc. We are concerned with planning and efficiency and cost/benefit and management principles.

In the Pacific today, there is also widespread recognition of the importance of disaster management and of pursuing ideas on how to cope more effectively with natural disasters. We have had several conferences and seminars and training courses and it seems that we will continue to do so for some time yet. Natural disasters now seem to be part and parcel of the international conference/seminar cocktail syndrome. Today we seem to be continuing with this syndrome.

I must admit that when I was asked to participate in this seminar, I was to some extent skeptical and some of the people in the Pacific that I know reacted a bit skeptical too. Not another seminar! I was reminded of a comment once made, "here we are again at another meeting at the Hilton" talking about management and assistance for another group "camping out in the bush".

And again what am I going to say - when the same things have been stated before, for at least, in any case - 20 years.

Pacific countries have participated in these round of natural disaster conferences and seminars in the 70's and 80's. I believe it has cost all parties concerned a lot of money. Taken over 20 years, it covers perhaps millions.

The question then is:

- why do we repeat ourselves?
- why for so long?
- why spend so much money on it?
- why local and national, why regional, why international?
- why again and again?

Are we trying to sell UNDRO?

Why have we, as we see it failed after so many years?

Why hasn't the train succeeded?

Has there been any real failures in management?

Are we selling mercedes where all that is wanted is a minimoke or a cart?

Why are we raising expectations?

Do all these meetings mean more assistance? Can this be so? This is what is being perceived by the public. The more meetings the greater expectations. More and more meetings with no visible results - effectiveness of local and national management and image becomes questionable.

Logic demands 100% of performance - but are we asking for 100% where only 50% is practical and bearable economically and that we should be satisfied.

We have studies and recommendations after recommendations of what needs to be improved. But have we really gone in to see:

- where, if any, they have failed?
- where, if any, there would be savings or better use?

Have we really asked whether what we are trying to do, teach or say:

- are already known
- but that nations will only go so far now then bring in those knowledge later when they want to do so.

Is the problem a lack of knowledge and need or a preferred level of activity at a particular time in which case they don't need us.

It may seem that I have a negative attitude to the present exercise, but I believe that these matters that should be asked; they are matters that should be answered if we are to succeed.

Be that as it may, I would like to believe that this Seminar under the auspices of UNDRO in cooperation with the Forum Secretariat, will lay to rest many of these questions and fears. We know it is a difficult task. We know at times that it is also a thankless task.

But I would like to believe that under the leadership of UNDRO and the Forum Secretariat, of our friends from UNDP, EEC, Asian Disaster Preparedness Center, Australia, Japan, USA, New Zealand, AODRO and others as well as those from the Pacific countries,

we will come through with viable, realistic and implementable ideas, plans and organizations that could be adopted and adapted at national levels to meet each countries needs and encourage each others strengths. Disaster management at the end is not a question of what is best according to Hoyle but a question of what a country is able, at its very best, to do. That is the reality that, at the end, this seminar must face squarely and frankly.

Mr Chairman, distinguished participants, I have played my role as the Devil's Advocate. I will now close my remarks so that you could be cheered up by others more succinct more eloquent and more professional than myself.

Thank you.

APPENDIX C

**CLOSING ADDRESS
BY
HIS EXCELLENCY, MR YASUO HORI
AMBASSADOR
EMBASSY OF JAPAN**

Thank you very much Mr Chairman and I do appreciate your premature announcement of my promotion in the course of the introduction. I do appreciate and I pay tribute to the laborious efforts you have put forth to summarize the discussions far ranging and far reaching issues. I think a lot of points have been raised in the course of the seminar and I think this has been really beneficial and stimulating.

As a new comer to this beautiful country I thank you for giving me the floor at this time. I appreciate this occasion to get acquainted with many senior colleagues and counterparts in this particular field as well as in this particular region. Admittedly this is a golden opportunity to give an on-the-job training to a new Ambassador. The only regret of mine is that my English, with a heavy Japanese accent, will strike you as a disaster. Therefore I should like to stay as brief as possible in order to minimize damages on the Tatro Assemblage.

I should like to begin my remarks with the account of a great disaster that befell the Japanese people some 70 years ago. In September 1923 a great earthquake with a magnitude of 7.9 - 8.2 took place abruptly in Kanto area, central part of Japan. It was followed by a big fire configuration and both accidents claimed 140,000 lives of the Japanese and burned and destroyed as many as 580,000 houses. This disaster threw the entire Japanese nation into shock and disorder as this was the worst tragedy in modern Japan and it remains vivid in the memory of the Japanese. It has implanted in the Japanese mind constant vigilance to natural disaster and even now September 1 is remembered as the Big Earthquake Day and on this very day every year practice exercises are held on a nationwide basis to alert the people to possible disasters and to keep them in preparedness to prevent and lessen any losses of disasters. Now this type of exercise is exactly what the Decade activity is all about.

Next allow me to dwell on Japan's position with regard to the UNDRO's activities. Japan's basic position is threefold.

First, Japan is a member of the Pacific community and, as such, Japan is committed to the stability and progress of the developing countries in the South Pacific region.

Second, Japan is prone to various natural calamities such as earthquakes, typhoons, tsunamis and floods, and we ourselves become the victims of these disasters annually as I mentioned a minute ago.

Thirdly, fully cognizant of the great magnitude of human sufferings left in the wake of the natural calamities including cyclones here in this region, Japan is genuinely interested in contributing to disaster relief measures of island countries in the South Pacific in bilateral contexts. We recall notably the two years, 1986 and 1989 when cyclones hit this region very greatly and quite a few South Pacific countries fell victims to great cyclones. Then we contributed to the respective affected countries in terms of relief donations.

It was from the same humanitarian motivation that my Government has contributed US\$150,000 to the South Pacific Disaster Mitigation Programme that was initiated by the office of the United Nations Disaster Relief Co-ordinator. We understand that, under the present Programme, the South Pacific Forum and related organizations will play principal roles, within the stipulated framework, in close cooperation with the South Pacific Project Office or Programme Office of UNDRO.

We recall the 21st Meeting of the South Pacific Forum held in Port Vila in July/August, 1990. Japan is in full agreement with paragraph 23 of the Communique adopted at the meeting. This paragraph should be implemented into policies in the near future.

If requests are filed in bilateral terms for concrete projects by certain Governments in this region, Japan will stay responsive to any such requests and we will consider what cooperation will be available in that connection.

As regards the proclamation of the International Decade for Natural Disaster Reduction, the Government of Japan responded promptly to the call, established national committees to promote and implement the Decade activities at home, pledged to contribute to the Trust Fund in the amount of half a million US dollars in 1990 fiscal year and also arranged Japanese experts to attend relevant inter-governmental sessions. We feel confident that the future activities envisaged under the International Decade will benefit the South Pacific countries immensely.

In case disasters cause unfortunate damages, Japan has, to-date, acted competently by means of two schemes: one, by fund contributions in response to the request from the Governments of the affected countries; and two, by the dispatch of Japan Disaster Relief Team together with the provision of necessary goods and equipment. The latter approach proved effective in particular in three separate precedents that is in the years of 1987, '89 and '90 in this region. In a nutshell Japan stands ready to help any developing countries in the region in the event of unfortunate disaster on bilateral basis but at the same time we attach great importance to multilateral approach and Japan takes great pride in her association with the South Pacific Project Office of UNDRO.

After this observation, I am pleased to offer my sincere congratulations to all those concerned on the apparent outstanding success achieved by the present three-day-long seminar. Efforts to summarize the whole proceeding has been really painstaking and I think I was very much struck by this effort. The exchange of views and information has been really stimulating and beneficial and its coverage was deep and extensive and this was also made possible by the generosity of the South Pacific Forum Secretariat that offered their resources at the disposal of this present worthy seminar. I should also like to thank Mr Nelson Delailomaloma for your able Chairmanship.

May I send all my best wishes to all the participants, especially to those who have come a long way from distant countries. As resident here in Suva, I bid farewell, and bon voyage on disaster-free flights.

Thank you.

APPENDIX D

LIST OF PARTICIPANTS

COUNTRIES

COOK ISLANDS	Mr Goldy Goldie	Superintendent of Police
FIJI	Ratu Meli Bainimarama	Permanent Secretary for Fijian Affairs & Rural Development
	Mr Joseva Ratuvuku	Assistant Secretary Department of Rural Development Rural Housing
KIRIBATI	Mr Iotua Tebukei	Commissioner of Police
NIUE	Mr Steve Brady	Chief of Police
PALAU	Mr Abel Suzuki	Co-ordinator National Emergency Management Office
SOLOMON ISLANDS	Mrs. Phyllis Taloikwai	Chairwoman National Disaster Council
TONGA	Mr Maliu M. Takai	Assistant Secretary Ministry of Works
TUVALU	Mr Pokia Tihala	Deputy Secretary to Government
VANUATU	Mrs. Jeanette Bolenga	Chairwoman Disaster Management Committee
WESTERN SAMOA	Leiataua Dr Kilifoti Eteuati	Secretary to Government

AGENCIES

AUSTRALIAN OVERSEAS DISASTER RESPONSE ORGANIZATION (AODRO)	Mr Barry Blake	Executive Director
AUSTRALIAN INT'L DEV. ASSISTANCE BUREAU (AIDAB)	Ms. Annmaree O'Keeffe	Director Refugee & Disaster Co-ordination
AUSTRALIAN INT'L DEV. ASSISTANCE BUREAU (AIDAB)	Mr Greg Brooke	1st Secretary Development Assistance
ASIAN DEVELOPMENT BANK (ADB)	Mr Werner M. Schelzig	Secretary Development Policy Office
ASIAN DISASTER PREPAREDNESS CENTER (ADPC)	Mr Brian Ward	Director
BRITISH DEVELOPMENT DIVISION IN THE SOUTH PACIFIC (BDDP)	Mrs. Gillian Wright	Senior Programme Officer
CONSULTANTS:	Dr Herbert Tiedemann	Engineering Swiss Reinsurance Group
	Mr W. Nick Carter	International Disaster Consultant
	Dr Langi Kavaliku	Minister for Education, Civil Aviation and Works

EUROPEAN ECONOMIC COMMUNITIES (EEC)	Mr Bob Baldwin	Attache
EMBASSY OF JAPAN	His Excellency Mr Yasuo Hori	Ambassador
	Mr Satoshi Nakajima	2nd Secretary
FOOD AND AGRICULTURAL ORGANIZATION (FAO) OF THE UNITED NATIONS	Mr D.H.J. Abeyagoonasekera	Senior Regional Rural Development Officer
FORUM SECRETARIAT	Mr Gary Wiseman	Director Economic Division
	Mr Henry Naisali	Secretary General
LEAGUE OF RED CROSS & RED CRESCENT SOCIETIES	Mr Xiaohua Wang	Asia Pacific Department
NEW ZEALAND EMBASSY	Mr Don Will	1st Secretary
OFFICE OF THE U.S. FOREIGN DISASTER ASSISTANCE (OFDA)	Ms Joanne Burke	Training Officer
UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP) WESTERN SAMOA	Mr Matthew Kahane	Resident Representative
UNITED STATES AGENCY FOR INT'L DEVELOPMENT (USAID)	Mr Kirk Dahlgren	Program Officer
WORLD METEOROLOGICAL OFFICE (WMO)	Mr Rajendra Prasad	Acting Director

WORLD HEALTH ORGANIZATION	Dr David Parkinson	WHO Representative (WHO)
	Dr George Hiller	WHO Representative
WORLD COUNCIL OF CHURCHES	Mr Henry Manuelli	Member of Finance & Personnel Committee Pacific Conference of Churches
 <u>SPEAKERS</u>		
DRAINAGE & IRRIGATION	Mr Roland Lin	Principal Engineer (RE)
	Mr Tin Maung	UNV Consultant River Engineering
FIJIAN AFFAIRS & RURAL DEVELOPMENT	Lt. Col. Vatiliai Navunisaravi	Minister for Fijian Affairs & Rural Development
FORUM SECRETARIAT	Mr Esekia Warvi	Secretary General
MINERAL RESOURCES DEPARTMENT	Mr Trevor Lawson	Senior Engineering Geologist
UN WATER PROJECT	Mr John Skoda	Chief Technical Advisor

UNDRO PARTICIPANTS

UNDRO, GENEVA

Mr Ernst J.A. Lohman

**Senior Coordinating
Officer**

UNDRO/SPPO

Mr Joseph Chung

**Chief Technical
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Mr John Dovale

**Assistant Technical
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OBSERVERS

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**MINERAL RESOURCES
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Senior Seismologist

Mr Alfred Simpson

Director

NETHERLANDS, ANTILLES

Mr Rudy Dovale

**National Disaster Co-
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SUVA CITY COUNCIL

Mr Ray McCarthy

Consultant

FORUM SECRETARIAT

Mr George Kiriau

**Aid Coordination
Officer**

FRENCH EMBASSY

Mr Christophe Jaconin

**Attache
Cultural & Scientific
Cooperation**