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PROCEEDINGS OF THE AODRO SEMINAR ON THE SOCIAL, CULTURAL AND ECONOMIC IMPACT OF DISASTER EMERGENCY AID ON DEVELOPING COUNTRIES

This special edition of the AODRO NEWSLETTER contains the full text of papers presented at the AODRO Non-Government Organisation seminar, held in Sydney, 4 August 1986. Representatives from Australian, Pacific and International non-governmental and governmental agencies, disaster research institutes and disaster management services, and representatives from disaster-impacted countries addressed and/or attended the meeting.

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INTRODUCTION

"Sometimes I felt during Hurricane Isaac that our relief programme was directed more by the aid that was offered than by what we thought was necessary" (Chairman's closing remarks at Seminar on Natural Disaster held at Nuku'alofa, Tonga November 1982.)

"Will Tongans, on both a national and local level, have the cultural resilience to absorb the food aid, foreign technology and sustained patronage and still bounce back and be willing and able to fend for themselves in the future?" (Thaman, 1982).

Human life-styles and economic and social activities evolve in relation to the complex influences of natural and cultural environments. Extreme events every so often punctuate the more "normal" or anticipated environmental setting. Tropical cyclones are one such threat and are sometimes categorised as "sudden onset" hazards. For

many of the island countries of the south-west Pacific they are an expected part of life. They occur at irregular intervals, striking different areas with varying ferocity and their occurrence can only be predicted with a lead time of one to at the most a few days. They have the potential to wreak death, injury or destruction through the varying mix of severe winds, heavy rain and, on coastal lowlands, storm surge and wave action. All the possible forms of disruption before the event cannot be envisaged. The immediate chaos they generate undoubtedly causes hardship, imposes upon all levels of organization excessive overloads and prevents temporarily the maintenance of orderly life-styles. At the time of the emergency and for some days after, the response must focus on humanitarian aid and require co-operative and communal participation at all levels - family, village, district, national and international. Pre-disaster preparedness or preventative measures can do much to soften the impact. Post-disaster rehabilitation and reconstruction, thought out prior to the disaster, can smooth the path of recovery.

THE CYCLONE THREAT

Cyclone Isaac, which moved from north-north east of Vava'u, through the central island of Ha'apai to the west of Tongatapu on 3rd March 1982 (for further detail see Oliver and Reardon, 1982), was one of four damaging cyclones that had affected one or other island group of Tonga between 1973 and 1982. From 1830 to 1982, as far as information is available, 108 cyclones, of varying intensities, affected this region which extends over 8.5° latitude and 4° longitude. Communities living in this area have had centuries of cyclone experience and have a degree of in-built resilience.

THE CULTURAL ENVIRONMENT

Natural threats become disasters when they interact adversely with human culture in the affected area. Tonga's population of about 100,000 is scattered over 36 of the 169

islands that are inhabited. Apart from the national capital of Nuku'alofa (on Tongatapu) and the regional capitals of Ha'apai and Vava'u, coastal villages are the main settlement pattern. The society is based upon strong family and communal links. Although Tonga has no formal welfare system the family and local community fill much of the gap. Democratically elected Town Officers, assisted by village committees, guide the social and economic activities at this level. District Officers represent loose groupings of 4 or 5 villages. Power is strongly centralised in the central government at Nuku'alofa. The institutional and organizational structure has the capability to deal with disaster. Overall the social structure is basically feudal with a traditional focus of power on a hierarchical system headed by the nobility and Crown. The outlook is traditional and conservative and not always conducive to the flexibility that dealing with disaster situations may sometimes need, particularly where communication difficulties demand quick local decisions and transport problems require reliance on local resources. On the other hand the organizational structure is stable, capable and determined.

The economy is in the pre-industrial stage with a self-sufficient agricultural and fisheries base and a limited capacity to earn foreign exchange based primarily upon the export of copra with a much smaller contribution from exports of vanilla and bananas. Tourism makes a small, potentially developing contribution to income from outside, while remittances from about 60,000 Tongans living abroad are important. Distances between small villages located on individual islands, except on Tongatapu, mean that local self-sufficiency or local exchange of food and other necessities is the prevailing pattern. Land pressure is a major problem and "urban migration" to Nuku'alofa (for employment and educational opportunities) has resulted in low-grade suburban development at Sopu (western margins of Nuku'alofa) on low-lying swampy and storm surge-prone land. Resettlement of people from disaster-prone areas is difficult because of the nature of the land tenure system.

THE IMPACT OF CYCLONE ISAAC

Apart from the northern islands, the central and southern islands mostly received reasonable warning of the approaching storm, though the lead time was often very short and few details were available. Over

half the population are said to have cheap transistor radios, obtainable from the Tonga Broadcasting Commission in Nuku'alofa, from which all available news was received (until the power failed mid-day 3rd March). The main causes of damage were violent winds with storm surge destruction (accentuated by high waves unless fringing coral reefs gave some protection) on some of the low-lying Ha'apai islands and especially on the central and west coasts of north Tongatapu. From the disaster response viewpoint, the Sopu locality presented the biggest social and welfare problems.

Six deaths and about 150 injuries were caused. The hospital and medical facilities were mainly able to cope though there were problems in getting some injured from isolated islands to hospitals or medical centres. Health problems were not a major difficulty though the Tongan health authorities feared the possibility of typhoid and dysentery in flooded areas. Population densities are low and the people generally healthy. Water problems were acute, especially on some of the small islands, where, without underground water sources, rain is collected from house roofs and collected in individual reinforced concrete cisterns. Loss of roofs, gutters or feeder pipes cut off the supply. Polluting vegetation or sea-spray ruined water in cisterns without covers, and other cisterns were wrecked. Transport of water (by helicopter or boat to some small islands) and distribution of water purification chemicals were undertaken. Sanitation problems developed in the Sopu area where sewerage escaped from soakage latrines in the surge area. Flooded (mainly surge) areas experienced mosquito plagues and spraying was needed. Health inspectors from Australia and New Zealand with backpack sprays made a significant aid contribution in this respect.

Extensive damage to buildings was caused especially in the Ha'apai islands and east of Nuku'alofa and in the north-west of Tongatapu. Over 2000 houses required replacement, while nearby others needed considerable repairs (building damage was estimated at about AUD 16m). Emergency shelter was a major requirement and tents were a significant aid item. There are many aspects of rehousing which cannot be considered here (see Reardon and Oliver 1983). Most housing materials (timber, cement, cladding and roofing sheets) have to be imported. For the villager finance is limited or not available and reserves of

materials or tools likewise. Saws, hammers, tin-snips and nails were significant aid items. Timber and roofing iron were salvaged, but their re-use stores up the potential of even less cyclone resistant buildings in the future. The mass production of an approved design of pre-fabricated house, referred to later, was got under way within a few weeks of the cyclone.

Wind damage to crops produced major problems. Some coconut palms were completely destroyed, but more serious was the fall of the nuts which meant a soon impending shortage for domestic needs and a critical drop in copra exports. Root crops and tree fruits are a major part of the daily diet. Bananas are easily damaged by wind, cassava tubers rot quickly when the plant is destroyed, as indeed do the important staples of taro and yams (if the leaves are badly damaged), while there were big losses of other food sources such as breadfruit, custard apple, paw paw. For many of the normal foodstuffs replanting was required with varying times to cropping (eg. yams 4-6 months, bananas 6-9 months, coconuts 2 years and 5-7 years for full yields). Drought in 1983 was a further difficulty.

Fish and shellfish provide coastal villages with an important source of employment and earning capacity, and a protein supplement to the diet. The cyclone damaged many boats, outboard motors (where not removed from risk of salt water damage), fishing gear and fish traps. Rehabilitation of the fisheries required finance and new gear, once a proper inventory of losses could be carried out. In this respect the disaster aid is almost indistinguishable from development aid. It is primarily a matter of replacing equipment initially provided through development aid.

The Nuku'alofa area presented different and more familiar problems. It was fortunate that the cyclone impact was less severe in the town. It was important, especially since the in-country disaster response infrastructure is so centralised there, to restore the urban facilities - road clearance and transport, power, telephones, food supplies (dependent on outside sources) and water. Such technology and equipment as there are available are concentrated in the town and rapid progress was possible in these aspects. The question of evacuating Sopa and finding alternative accommodation was more difficult and not quickly resolved.

The prevailing system of land tenure makes it difficult to find land for resettlement.

The aggregate value of losses greatly exceeded the total annual budget of Tonga (already reliant on overseas aid). Under these circumstances aid was essential not only to get the society and economy back on their feet, but to ensure that development programmes did not come to a halt.

RESPONSE TO THE CYCLONE WITHIN TONGA

1. Tonga's Emergency Infrastructure

Disaster preparedness was initially stimulated by the disruption caused by cyclone Juliette (1973). This was followed by the appointment of James Lewis as a disaster consultant and led to his report (1978) which analysed the specific problems natural disasters raised for Tonga and proposed a disaster management structure. This was implemented on paper, but not fully thought through nor established when Isaac struck. At this time no disaster plan existed, nor had any significant action been directed to prevention, preparedness nor mitigation. Tonga has few people with the necessary disaster management skills and some of these are now working in areas unrelated to this area.

2. Immediate Disaster Response In Tonga

From 3rd to 7th March response was largely uncoordinated. On 8th March a new disaster management structure was introduced which included the National Council for Disaster Relief, Rehabilitation and Reconstruction (formulating policy), a Central Operations unit (policy implementation) and Emergency Operations and Communications Centres. To attempt to set up an organization after the event causes infinite problems and pressures.

Damage assessment is an immediate post-disaster need so that the correct counter-disaster steps (hopefully considered before disaster) can be initiated and the correct agencies or personnel activated. A system for this assessment was not in place. Firm information outside of Tongatapu was lacking. Low level aerial photography was carried out on 5th March by an Orion aircraft from the NZ Airforce, but the understanding and skill needed to maximise the use of the data was lacking locally. Regional Relief Committees were only slowly activated in Ha'apai and Vava'u, while communications and transport to outlying

islands were deficient. The provision of helicopters and transport aircraft from Australia and New Zealand was of the utmost value, but terminated after 15th March with the ending of the emergency phase. After that date the pre-disaster bureaucratic departmental structure was quickly re-established.

THE ORGANIZATION AND DELIVERY OF OVERSEAS EMERGENCY AID

Each overseas disaster relief operation in a Third World area reveals deficiencies, sometimes repeating errors already recognised. Experience also offers opportunities to make improvements in the next. Cyclone Isaac in Tonga is no exception.

Before making decisions on sending aid, reliable information on the needs derived from Tongan Government or local NGO sources should have been sought. The Government preferred to seek or take only aid it felt to be required. It would like to see this aid distributed equitably in a way that would encourage self-help and local initiative. There is a fear that too much free aid will stimulate a "crisis of dependency" (Bayliss-Smith 1977) on charity. It is not always easy to avoid paternalism in relief delivery. Aid that strengthens local "coping mechanisms" is best.

1. The Management of Relief Aid

A large number of offers of aid from many international, national and agency sources were forthcoming. Some offers were unilaterally determined by the donors. Reference to the Tongan Government might well have improved the decisions on the most appropriate form of relief to send. In some instances where requests were made from Tonga, in the area of medical supplies for example, the distinction between aid to meet the immediate needs of the disaster and that for improving longer term resources or capabilities was blurred. The usefulness of some form of clearing house for aid delivery was demonstrated by the unsparing efforts that were made by the Australian High Commissioner to assist the smooth and effective flow of external aid through the several Relief Co-ordination meetings she chaired in nine days following the cyclone. In the rush to despatch relief items a "clearing house" is needed to integrate the overall offers and to avoid duplication or over-provision.

2. The Appropriateness of Disaster Aid

Emergency response deals with the short term (few days after the event) actions to minimise hardship and to assist the initial steps in rehabilitation. Humanitarian objectives predominate but political, economic or promotional interests may exist in a concealed form.

The aid provided can often be inappropriate in type, amount, timing or manner of delivery. It is important that there should be a full understanding of the political, economic and cultural characteristics of the country or area to be helped. The life style of the people and the values and aspirations that underlie their social system play a major role even at times of disaster. It is essential, therefore, before deciding on the nature or the relief to be sent, that the best available guidance on these aspects should be sought. Such advice might most suitably be obtained from within the afflicted country, but it may be provided from someone with an intimate knowledge of the way of life of the disaster area who is quickly accessible in the donor country. There are often occasions when cash aid is preferable to specific aid items. Cash can be used more flexibly and assist local decisions on what is considered the most needed form of help. Some illustrations of aid suitability can be given from Tonga's experience of cyclone Isaac.

a. Food Aid

Many offers of food aid were made. Not all of these suited the customary diet or cooking practices of Tongan villagers. Traditionally root tubers (cassava, yam, taro and sweet potato), fruit (banana, breadfruit, paw paw and custard apple), coconut and vegetables with a fish supplement but a very small meat consumption. Many of these items do not feature in overseas trade, or do not travel or store well. It is of interest, however, that Western Samoa sent a consignment of taro. Some food items such as rice (not normally used in the villages) are of less help than it might have appeared. The promised amount of tinned fish and meat, at normal rates of consumption, was equivalent to several months supply.

b. Clothing and Blankets

Every disaster yields aid supplies of clothing and blankets, often with little

assessment about the need. Clothing suitable for Americans or Europeans is often inappropriate in style and certainly in size for sturdy Tongans. Tropical summer conditions mean a small demand for blankets.

c. Buildings

In a co-operative venture with the Ministry of Works, Dr K.J. Eaton of the Overseas Division of the U.K. Building Research Division, developed a suitable, simple cyclone resistant house design. It was developed to provide homes to those unable to replace or repair their homes unaided. These houses were produced in Tonga by setting up a workshop for their pre-fabrication from imported aid materials. Each house of about 35m² cost about \$T2,900 which included transport and foundations. \$T2,200 of this sum was to come from external aid and \$T700 from the recipient. Meeting this \$700 led in some cases to indebtedness that poorer people found difficult or impossible to service. Labour costs were minimised where possible by encouraging self-help aided by supervision and house erection gangs from the workshop. Inevitably some who did not receive such a replacement house felt disadvantaged. On the whole the project seems to have been very satisfactory, though inevitably the small houses will not meet the requirements of large families and additions to the core structure may well be of lower standard and less cyclone resistant. How acceptable the new house will be has yet to be determined, but the style does not represent a revolutionary change from the houses in many villages before the cyclone. Already timber framed houses using asbestos fibro cladding, or less frequently concrete block, with corrugated sheet roofing had replaced many of the traditional fale which used local materials.

d. Rehabilitation of Local Food Supplies

Advice from local sources on the steps to take to rescue wind damaged crops was important. Prompt action to prune, upright and prop up breadfruit trees makes it possible to save many damaged trees. The sowing of quick yielding vegetables, sweet potatoes, water melons, tomatoes and capsicum offers the opportunity to fill the food supply gap in the critical months before adequate replanting of root crops can be effective. Seeds are a necessary aid item. The replanting of root crops required the provision of vegetative stock and, where the local sources are insufficient, import

is difficult because of quarantine requirements. These, however, are important and should not be relaxed.

3. The Timeliness of Disaster Aid

Speed and volume of aid delivery are not always the most important objectives. An avalanche of aid, especially when intelligence on what has been despatched, how it's being transported and when it is likely to be received is inadequate, can easily add to the problems of the disaster. In some disasters the victims can salvage enough in the early days to sustain life and avoid severe hardship. This once again reinforces the significance of obtaining information on the aid really required before deciding what to send. Large amounts of items in excess of immediate needs stress the local handling and distribution capability. There may not be sufficient personnel or transport to deal with deliveries. Resources really needed for other urgent tasks may have to be diverted to this activity. In many disaster areas the facilities to store relief goods may be insufficient or destroyed by the disaster. A more orderly timing and a steadier "trickle flow" of aid would avoid many of these difficulties. In this context it may be noted that relief agencies can be very keen to despatch relief and to complete the operation in a short period. In turn this often leads to the premature termination of relief. The immediate emergency can be over in a week or two, but other effects of a disaster may require attention and external help for many months thereafter.

In Tonga the storage space in Nuku'alofa and Pangai (Ha'apai) is very limited and even less was unused. At both places the port handling facilities are minimal and had suffered cyclone damage. The capacity of the transport on the island of Tongatapu and that linking the islands (necessarily by boat) is very limited.

It is frequently assumed that a population is immediately starving after the disaster. A tropical country with a predominantly rural population depending, as does Tonga, upon locally produced root and tree fruit or nut crops, is usually able to use the fallen fruit or root tubers still edible in the soil for two or three weeks. Then the problem of food shortages can become acute. Where there are large towns, dependent on supplies from the rural areas, or upon imports, the situation may be different, though here too there may well be sufficient

unspoilt stocks to last for several days. It is, therefore, very necessary to question the nature and extent of food shortages before sending large amounts of food aid.

4. The Convergence Phenomenon

Tonga experienced the convergence of representatives of relief agencies, of different donor countries, of persons carrying out surveys for different purposes. This situation undoubtedly caused some exasperation in government circles in Tonga which understandably felt that control in some respects was being taken out of their hands. The Government were concerned about a possible divergence between their basic policies and inadvertent consequences of aid.

5. The Economic Consequences of Disaster Aid

The free distribution of food or other consumer items disturbs the local economy. Aid can become an economic competitor. Local business loses its normal market and then cannot purchase any surplus goods, possibly salvaged, in the early post-disaster days. Local producers in Tonga have little or no financial reserves to call on. If the flow of funds to the producer dries up his purchasing power declines. Measures are then needed to restore the pre-existing economic structure.

DISASTER AID VERSUS DEVELOPMENT AID

Once the situation moves beyond immediate rehabilitation the emphasis shifts to longer term social and economic reconstruction, in this case envisaged to have a two-year duration. The aspirations of development planning both of the Tongan Government and development aid donors should be harmonised, and a too rigid definition of what is aid for disaster recovery and for development avoided. In some instances agencies providing disaster aid display too great a concern to put a time limit on when such aid should terminate. In some cases there is an urgent need for aid donors to establish their policy, aims and objectives with respect to the relationship of aid for disasters and development, and to evaluate the long term impact of such aid in these two areas. In this task this opinion seems pertinent: "The effectiveness of external (aid) organizations depends largely on their ability to understand and deal with the cultural restraints within the host society, their view of development and their ability

to communicate effectively with the victims" (Cuny, p.84, 1983). It should be observed that Tonga's fourth 5-year Development Plan did not consider the potential disruption from disaster, nor incorporate into development planning actions to reduce further disaster impact.

In specific directions in Tonga a number of disaster mitigation or preparedness decisions are indicated. There are clearly needs for a clearly defined disaster plan, for the establishment (and testing) of a disaster organization which will retain a permanent identity, for a programme of public awareness and education for disaster response and improvement in the communication and warning system. Building training and information on improved house design at the village level could reduce the vulnerability of houses, as well as help achieve culturally acceptable but higher standard living conditions. The adoption of a more diversified economic system especially in agriculture with an emphasis on less cyclone-prone crops, more facilities for sea and air links to the islands, more devolvement in the disaster response structure and a stimulation of coping capabilities at village level (which in turn would help to overcome communication problems) and better knowledge of disaster prone localities all need attention. "Disaster mitigation is likely to be successful only if efforts are an integral part of everyday life, not something extraneous to normal activities". (Habitat News, 1982).

CONCLUSION

In the interval between overseas disasters, it would appear that providers of overseas aid need to re-examine their aims and objectives and their management structures with the primary goal of doing the most good in the most efficient way for the disaster affected communities, as judged by those communities.

Reminiscent of the quotation at the head of this paper is Cuny's (p.3, 1983) view: "The international response has added importance, however, for it sets the tone and often defines the scope and methods used by the affected countries themselves in dealing with the disaster".

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