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SPECIAL ECONOMIC DISASTER RELIEF ASSISTANCE

**Special assistance to Maldives for disaster relief
and strengthening of its coastal defences**

Report of the Secretary-General

I. INTRODUCTION

1. The General Assembly in resolution 42/202, expressed its deep concern over the damage caused to the archipelago of Maldives by tidal waves in April, June and September of 1987. The resolution underscored the threat posed by such occurrences to the low-lying islands of Maldives, and the imperative need for long-term action. The attention of the international community was drawn to the resources required to meet this need, and an appeal was made for the international community to contribute generously in providing them.

2. Resolution 42/202 requested the Secretary-General to mobilize international support and assistance in favour of the efforts of the Government of Maldives to address the problem of coastal defence. The resolution also requested the Secretary-General to report on the implementation of the present resolution to the General Assembly at its forty-third session. The present report is submitted accordingly.

II. BACKGROUND

3. The chain of 19 atolls comprising Maldives stretches for a distance of nearly 900 kilometres. The atolls are coral reefs with 1,190 islands, of which about 200 are inhabited. The islands generally do not rise more than two metres above sea level, and are thus highly vulnerable to rises in sea level such as those brought on by combinations of heavy swells and high tides, as occurred in 1987. The average height of waves in the April 1987 floods was estimated to have ranged from

2.5 to 5 metres - the highest in human memory. The worst of this damage occurred in April when the floods affected a third of the main island, Male, and thirteen out of the nineteen atolls.

4. The Islands of Maldives lie away from cyclone paths. Brief annual monsoonal disturbances and occasional high tidal swells had not posed serious problems until 1987. In April, and again in June and September of that year, tidal waves extensively damaged coastal defence constructions, breakwaters and harbour installations, swept away newly reclaimed land, and caused salt-water pollution of crops, vegetation, and subsurface fresh water tables. The international airport and runway, running the full length of Hulule island, suffered severe damage. This facility is of utmost importance from an economic point of view as a lifeline for tourism, which accounts for well over half of visible export receipts. Protective breakwaters and containment walls for the airport were either fully destroyed or extensively damaged, and landing equipment was rendered inoperative.

5. Reclaimed land proved especially vulnerable. Reclamation has been required in Maldives, especially on Male, to accommodate housing and public facilities for the country's increasing population of over 200,000. In 1987, in one reclaimed area of about 70 hectares off the island of Male, roughly 300,000 m³ out of a total of 1,000,000 m³ disappeared.

6. While no loss of life was reported in connection with these events, housing was destroyed and utility services were severely affected, creating pressing sanitation requirements, notably in the April floods. At that time an appeal for relief goods was conveyed to the international community in UNDR0's situation reports. As reported to UNDR0, this met with international relief from 20 donor sources, which combined with the national response satisfactorily covered immediate needs.

7. The physical damage to the preventive works has caused particular concern, as reflected in resolution 42/202. The 1987 floods showed up the inadequacies of the existing coastal defences, demonstrating the need to strengthen existing protective structures and to anticipate more effective, more extensive - and more costly - defences for needed human settlement and development projects that would be inherently vulnerable to tidal wave action.

8. Those projects include the conversion of two tourist resorts near Male into residential areas for Maldivians, and the designation of seven other islands on outer atolls as growth centres, in line with the Government's decentralization policy to check the ongoing population inflow into Male, which has become seriously overpopulated. Economically critical development projects include an estimated \$22 million expansion of Hulule International Airport and the creation of a deep-sea harbour in Male.

III. IMPLEMENTATION OF ASSISTANCE

9. Implementation of the resolution to date has focused on making the necessary resources available to conduct technical analysis and formulate a plan of action for the strengthening of coastal defence. In accordance with the procedure set out in resolution 41/192, concerning special programmes of economic assistance, the United Nations Resident Co-ordinator and UNDP/UNDRO Resident Representative has ensured, at the field level, the necessary contacts with the Government of Maldives and donor and agencies represented in the country as well as the participation of the relevant entities of the United Nations system in this endeavour.

10. In 1987, UNDRO, with financial support from the Government of the Netherlands, provided a civil engineer to the Government of Maldives to review damage suffered, repairs required and formulate an outline plan for improvement of coastal defences.

11. This initial step is being continued in 1988-1990 as UNDP supports a two-year project, implemented by Maldives Government Department of Public Works and Labour, to develop the necessary technical capacity to advise on coastal defence and harbour planning, construction and maintenance, to evaluate and prioritise external assistance projects for coastal defence and harbour planning, and identify priority areas for assistance, and to develop management systems for future maintenance of coastal defence and harbour facilities.

12. An UNDRO consultant, with the support of UNDP, has been working with the Government since September 1988, to review overall past and anticipated national and international mitigation efforts, so as to take stock of resources in hand, committed or pledged, and identify outstanding assistance needed on the basis of the tidal wave hazard, the likelihood of recurrence, and the population, property and resources at risk and vulnerable.

13. The conclusions reached, as overall risk and vulnerability are assessed, a national plan of action defined, and the related needs in technical assistance, expertise, material and financial resources identified, will be available for consideration at the UNDP Round Table for Maldives scheduled for February/March 1989.

14. These technical assessments will take into account the already substantial engagement in this area by a major donor, the Government of Japan, which has already initiated work on a three-year operation of coastal defence projects with a total cost estimated at \$US 6 to 7 million.

IV. CONCLUDING REMARKS

15. The tidal wave hazard, the physical vulnerability of Maldives as an island country rising barely above sea-level, and the socio-economic vulnerability of a least developed country with a high population concentration, call for national and international foresight and commitment in protecting national achievements to date and in safeguarding future growth. The problem of coastal defence should therefore be viewed as an integral part of global development issues in Maldives, which will be addressed at the forthcoming UNDP roundtable.

16. Given the low topography of Maldives, initiatives in this direction are all the more compelling given the expected rise in sea level as global warming progresses and the world's oceans expand in consequence. A recent UNEP report estimates that an increase of 1.5°C to 5.5°C would raise that level by between 20 and 165 cm. With a rise of that magnitude, a storm surge comparable to the 1987 events would be catastrophic unless the necessary preventive steps are taken now.

17. The socio-economic benefits of loss-reduction strategies, and the increasing body of knowledge available worldwide about them that can benefit countries such as Maldives, are recognized in the proposal of the General Assembly to designate the years 1990-2000 as an International Decade for Natural Disaster Reduction. The 1987 tidal waves provided a clear sign of the need for more effective and extensive coastal defences for Maldives. International expertise and support to the Government will be needed in this effort, and firm commitments will be called for as the technical, financial and material requirements are identified in the context of the national plan of action.
