(iv) District reconstruction plans should be used to guide a balanced allocation of resources between different parts of the country. This could well be the mechanism to match resources with needs. Such plans would be compiled in close cooperation with district authorities, municipal and provincial structures, and other stakeholders, moving beyond a narrow technical assessment to include social development, livelihood, gender, environment, governance and conflict dimensions.

(v) The international development community would work in close consultation with the Government and other stakeholders to design appropriate funding mechanisms to ensure the coordinated allocation of international development assistance for the reconstruction process. Possible trust fund mechanisms should be anchored within a national framework for recovery where the use of private and NGO resources would be synchronized.

Overview of Financing Needs

78. The assessment team proposes that a phased recovery strategy be employed in order to prioritize and execute activities. Phase one refers to immediate recovery assistance (about 12 months) to address urgent activities. This phase has already begun in many places. Phase two shifts into medium to longer term recovery assistance (up to 3 years) for other works and major mitigation efforts. This recovery strategy must take into account and complement other post-tsunami recovery plans currently under discussion, as well as efforts of Sri Lanka's development partners.

G. LONG TERM HAZARD RISK REDUCTION ISSUES

79. Prior to the tsunami disaster, the risks from natural hazards to Sri Lanka were considered low. Sri Lanka experiences mostly weather-related hazards, resulting in localized and seasonal floods, landslides, cyclones and droughts. Monsoon-associated landslides also occur in the districts of Badulla, Nuwara Eliya, Ratnapura, Kegalle, Kalutara, Kandy, and Matale.

80. In Sri Lanka, vulnerability to hazards is related to physical, environmental and legal-institutional weaknesses. Land use patterns, human settlement developments and construction practices that are not sensitive to weather related hazards are the most significant contributors to creating unsafe conditions. Recurrent patterns include encroachments into flood plains and substandard construction on unstable slopes. Land use practices that do not respect natural resource protection, as well as environmental factors (such as depletion of forests and mangroves, coastal erosion, siltation, and inadequate water and water-shed management) may further exacerbate the impacts of natural hazards. It is anticipated that changes in demography and climate, and the continuation of unsound environmental practices and development patterns may increase frequency and losses from disasters.

81. Recognizing the challenges exposed by the recent tsunami, Sri Lanka should develop a risk management approach, based on the principles that:

- The post-tsunami reconstruction program, and in general, all development programs, should be guided by multi hazard risk considerations;
- Improved institutional capacities are required for improved management of emergency response, particularly at the local level;
- The interest expressed by the international community to support an advanced early warning system in the region should be seized, as it provides an opportunity for better forecasting and early warning of disasters to save lives and livelihoods.
- Risk transfer mechanisms should be considered to mitigate the financial impact of disasters on the economy and future development activities.

Risk Identification

82. **Multi-hazard risk assessment.** A nationwide, multi-hazard risk mapping from existing data and further local assessments could inform reconstruction planning and help set future risk reduction priorities. Local risk mapping involving local stakeholders can enhance awareness of risks and inform district preparedness plans. In addition, as many disasters in Sri Lanka are weather related, environmental factors should also be a part of risk assessment.

Emergency Preparedness

83. **Early warning systems (EWS).** The interest expressed by the international community to support an advanced Indian Ocean Tsunami Early Warning System provides an opportunity for better forecasting and early warning of disaster to save lives and livelihoods. There is a need to strengthen and integrate within the proposed regional system the national systems that already exist to monitor regular hazards needs.

84. **Emergency information and communication systems.** Bringing the right information to the public and authorities is crucial to mounting a swift emergency response operation in order to save lives and property. The technical improvement of the EWS needs to be backed up by an information dissemination system that provides timely, accurate and coordinated information flow to emergency management agencies, press, local administration and the public.

85. **Decentralized emergency preparedness.** Communities and the local level administration have always been the front line responders to localized disasters in Sri Lanka, and the tsunami despite its scale was no exception. The enhancement of emergency response capacity of these local actors for future would therefore require preparedness planning primarily at these levels. Community based disaster preparedness plans and actions in high disaster risk areas would be the most effective way of improving public resilience and rapid action in disasters. Community-based disaster preparedness plans and actions in high risk locations would be the most effective way of improving public resilience and response to disasters.

Investment in Risk Reduction

86. **Reducing risks in post-tsunami reconstruction.** Post-tsunami reconstruction is a major investment in rebuilding the country. The opportunity to protect this investment from future disasters Sri Lanka may face should not be missed. Lessons combined fro m the tsunami and findings from the rapid multi hazard risk assessment should be fed into reconstruction planning and future risks reduced through improved building standards and design considerations.

87. **Protection of public infrastructure.** Medical and educational facilities built in high risk areas should incorporate improved standards to reduce their risks to hazard impacts. Educational buildings rebuilt after the tsunami should also be located in safe locations and use design specifications to double as cyclone and tsunami evacuation centers for the affected population, particularly in low lying cyclone areas.

88. **Legislations and standards for future safety.** A significant number of ordinances, acts and laws exist in Sri Lanka that relate to land use planning, human settlements, development and conservation of natural resources. Review of existing legislations and standards from a risk reduction perspective, simplification of procedures for their implementation and clarification of institutional arrangements for their enforcement should go hand in hand with reconstruction efforts.

89. **Local risk management strategies.** As hazards in Sri Lanka are very localized, risk reduction measures should be carefully tailored to local areas rather than imposed in a blanket fashion.

Institutional Capacity Building

90. **Disaster Management Authority and a system for coordination.** The lessons and experiences of the tsunami relief and recovery coordination should be distilled in developing an appropriate disaster management mechanism and an authority that reflects the risks faced by Sri Lanka. A National Disaster Management Plan would clarify roles, responsibilities and streamline coordination across administrative levels and various stakeholders. An emergency relief fund could support the plan for the speed of action during emergencies.

91. **Education and training.** Training and exercising of disaster management plans help to maintain a well functioning system to respond and should involve national, provincial and municipal staff, NGOs and the public. Both the public and the authorities will need to understand the basic principles if disaster risk reduction is to take root in the country. Professional education, short training courses, and primary and secondary school books should create awareness and knowledge of hazard risk reduction. National and local authorities should be routinely trained in emergency management as part of their civil servant training and networked to share their experiences.

92. **Creating a culture of safety through awareness-raising.** While public awareness of disaster risks is high due to the tsunami, in general there is limited public understanding of the local risks, or the actions that can be taken to reduce their impact. A major public awareness campaign on various hazards should start while the memory of the tsunami is still recent.

93. **Knowledge sharing.** International exchange of best practices and knowledge sharing among practitioners, authorities and NGOs, particularly from the region, can significantly contribute to capacity building at all levels.

Mechanisms for Risk Transfer and Financing

94. To ensure that both the local people and the national economy can recover quickly following a disaster, it is important to consider the benefits of risk transfer and financing mechanisms. In Sri Lanka, larger businesses in tourism and industry are insured, middle class families have some insurance policies covering certain assets such as cars; however, insurance penetration is inconsistent and individual housing and livelihood insurance against losses caused by natural disasters is not widespread.