

Post-Tsunami Reconstruction Priorities and Strategies

(A Discussion Paper)

1.0 Introduction

The Sri Lankan Government's *Implementation Plan (GOSL Plan)* released in January 2005, and the *Sri Lanka 2005 Post-Tsunami Recovery Program: Preliminary Damage and Needs Assessment* (draft) released on 2 February 2005 by the Asian Development Bank, the Japan Bank for International Cooperation, and the World Bank (Bank Report), provide the scope of post-tsunami recovery work along with preliminary cost estimates.

The assessed damages are US\$ 1 billion in physical assets and \$330 m in output losses for 2005 and 2006. The GOSL's total recovery estimate is \$3.7 billion while the Bank Report's estimate is \$1.5 billion. The difference is primarily in regard to estimates of strategic national infrastructure components (in the road, rail, water supply and sanitary and power sectors) which are not connected to the tsunami disaster. The latter are included in the GOSL Plan but left out in the Bank Report.

It is remarkable that within a very short period Sri Lankan officials and organizations in the affected areas and in Colombo have produced a preliminary assessment of the damage and the reconstruction work in each of the damaged sectors in the affected areas. The Bank Report, prepared by a joint staff mission of the three banks, provides a comprehensive narrative of the environmental, economic, socio-cultural, political, institutional and technical issues and challenges involved in undertaking post-tsunami reconstruction.

The report emphasizes what several other national and international organizations have been calling for, namely, the central coordination and decentralized decision making, and the involvement of the affected people and the inclusion of non-government agencies in all aspects of planning and implementation at the provincial, district and local levels. This will have to be so for most of the damaged sectors but especially for resettlement involving housing, community facilities and infrastructure.

While emphasizing the need for decentralization and local participation it is also important to recognize some of the immediate action priorities at all locations. These priorities are identified as follows:

- Temporary housing and facilities
- Clearing and disposing of tsunami debris
- Clean-up of wells and agricultural lands
- Coastal land use planning through community participation and strategic environmental assessment
- Resettlement planning through community participation

The purpose of this discussion paper is to emphasize the critical importance of the above-noted priorities based on the sector-based needs assessment and technical information currently being shared among Sri Lankan professionals. It also discusses public consultation and participatory planning processes as well as the need for and the implications of going beyond post-tsunami recovery to build Sri Lanka's major national infrastructure components.

2.0 Tsunami Damage and Recovery Needs Assessment

The asset losses and the recovery costs in the affected sectors included in the Bank Report and the GOSL Plan are tabulated below. As can be seen the difference between the Bank and the GOSL estimates is mainly due to the long term infrastructure (Phase 3) costs and the five (telecommunication, port, industry, enterprise, and law and order) sector costs that are included in the GOSL but not the Bank estimates.

The physical asset loss of US\$ 1 billion amounts to 4.5% of the GDP, while the output-loss estimate of \$330 m in the fisheries and tourism sectors amounts to 1.5% of the GDP. The marginal proportions of the GDP that the tsunami damages account for should not detract from the extent of the impacts on the most vulnerable sections of Sri Lankan society, as well as the impacts on the natural environment of almost two thirds of the island's coastline.

Asset Loss & Needs Assessment								
Preliminary Estimates (\$ millions)								
Sector	Asset Loss (Bank Report)	Needs Assessment						
		Bank Report			GOSL Plan			
		Short Term	Medium Term	Total	Phase 1	Phase 2	Phase 3	Total
Housing	344	50	437	487	20	500	70	590
Roads	60	25	175	200	15	153	640	808
Water /Sanitation	42	64	53	117	26	169	230	425
Railways	15	40	90	130	1	81	415	497
Education	26	13	32	45		133		133
Health	60	17	67	84		48	70	118
Agriculture/Livestock	3	2	2	4				
Fisheries	97	69	49	118	100	214	16	330
Tourism	250	130		130	5	128	195	328
Power	10	27	50	77	30	48	48	126
Environment	10	6	12	18	16	12	47	75
Social Welfare		30		30		85		85
Other	90	30	120	150				
Telecommunication						12	75	87
Port Development					10	12	10	32
Industrial Dev.							16	16
Enterprise Dev.					25	30		55
Law & Order					24	7	14	45
	1007	500	1100	1600	272	1632	1846	3750

The Bank Report highlights the main aspects of the tsunami disaster and outlines the guiding principles for undertaking the recovery work. The main aspects of the disaster are:

- **Social Impacts:** The social impacts include more than 31,000 deaths and 15,000 injuries, nearly 150,000 houses destroyed or damaged, 450,000 people displaced, and damage to livelihoods including 200,000 job losses. Children, women, and the elderly are the most vulnerable of the tsunami victims, with more than 900 children having become orphans or been separated from their parents.
- **Economic Impacts:** The fisheries sector suffered the most, socially and economically, accounting for nearly 90% of all deaths, 55% of displaced families and destroyed houses, and 50% of the estimated job losses. 65% of the national boat fleet was also lost. The tourist sector also suffered both property and job losses, along with agriculture, coir industry and small businesses.
- **Environmental Impacts:** The impacts on the coastal environment vary from place to place, but generally include severe scouring, impacts on flora, biodiversity, coral reefs and the marine ecosystem, contamination of surface and groundwater, and the pile up of debris.
- **Infrastructure Impacts:** These include damage to water supply and sanitary, power distribution, roads,

railway, ports and fishery harbours, and government offices and buildings.

- **Regional Distribution:** The affected areas are spread over five of the island's nine provinces, involving 13 of the total 22 administrative districts. Overall, the "North East is the region worst affected by the tsunami", compounding the earlier damages during the ethnic conflict. In the South, the districts of Hambantota, Matara, Galle have "pockets of severe damage". The Report indicates the following provincial distribution of financing needs: North East: 58%; South: 29%; West: 12.6%, and North West less than one percent.

3.0 Reconstruction Priorities

The sector-based reconstruction work has to be undertaken throughout the affected areas. An overall reconstruction work programme should be developed for each of the affected districts, guided by the implementation principles outlined in the Bank Report (see Section 4 below). In the meantime, priority should be given to undertaking the following activities in all of the affected districts the North, East and South Provinces:

- a) Temporary housing and facilities
- b) Clearing and disposing of tsunami debris
- c) Clean-up of wells, waterways and agricultural lands
- d) Coastal land use planning through community participation and strategic environmental assessment
- e) Resettlement planning through community participation

a) Temporary Housing and Facilities

Temporary housing is likely to be an issue for sometime given the extent of the permanent housing that has to be provided. The tsunami destroyed close to 100,000 houses and severely damaged a further 45,000 houses, representing in all 13% of the housing stock in the affected areas. 160,000 families involving 443,000 individuals were displaced and were immediately housed by extended families and friends or in the 800 welfare centres. According to the Bank Report, there were already 40,000 families involving 180,000 displaced people living in welfare centres as a result of the ethnic conflict before the tsunami disaster. The Report indicates that about 58% of the housing stock in the conflict areas requires rebuilding or renovation. Nationally, there are an estimated 4.6 million dwelling units, 29% of which are considered "temporary" (built with non-durable materials). It is reasonable to estimate that Sri Lanka requires over 200,000 new housing units, or 5% of the national housing stock, a demand that cannot be easily met in a short period of time.

Temporary housing with amenities therefore becomes a priority to supplement the welfare centres and the hospitality of the extended families, and can be provided within the overall funding estimates. It will prevent the displaced people from putting up shanties on their own and add to the already high proportion of "temporary" dwelling units in the national housing stock. In the Hambantota District, 38% of the dwelling units had been classified "temporary" even before the tsunami. It will also allow the planning and development of permanent settlements to proceed in an *orderly, consultative and participatory* manner. Temporary housing with amenities and basic infrastructure can be provided in a very short period of time, with international help if necessary by undertaking the following steps:

- Provide immediate temporary living accommodation of an adequate quality standard with a design life of 5 years.
- These can be similar to temporary facilities that are set up on construction project sites or mobile home sites. There are many organizations around the world with the expertise to mobilize and provide such facilities rapidly.
- They should be located in estates with sanitary facilities, potable water, transport infrastructure and

other essential services.

- Upgrading some of the damaged schools and hospitals along with temporary housing will help to restore some semblance of community life.
- A resultant benefit will be that these communities will have the opportunity to work on the reconstruction of the permanent settlements thereby gaining new skills and enhancing their livelihood.

b) Clearing and Disposing of Tsunami Debris

The Bank Report comments on the significance of clearing and disposing the tsunami debris in an environmentally acceptable way and estimates a budget of \$1.5 million. The debris includes everything that has been uprooted or overturned by the tsunami: vegetation, building and infrastructure debris, and municipal, hospital and septic-tank wastes.

Dr. A. M. Wasantha Lal , Water Resources Engineer in Florida, has also highlighted the significance of this problem in his report (“Environmental Damage and Need Assessment in Southern Sri Lanka”) after a short visit to the affected southwestern coastal areas.

The reported practice of clearing the debris from reconstruction sites and leaving it in adjacent piles should not continue. There has to be orderly removal of debris and disposal at pre-identified waste sites under technical supervision. Failure to do this will impact groundwater sources and lead to community health problems in the long run.

Geethanjalie Selvendran, Professional Geologist in the Florida Department of Environmental Protection, has recommended (see “Tsunami Debris Management”) guidelines for the selection of disposal sites, and for collection and disposal of the tsunami debris, to avoid groundwater contamination.

Given the geographical extent of the operation, resources including equipment and technical supervision should be mobilized at the district or local level and work carried out under guidelines prepared by the CEA. The selection of dump sites should be carried out by the CEA with a view to turning them into future landfill sites. CEA should also train local personnel for carrying out on-site inspection and decision making. Even before the tsunami, hospital wastes were becoming a general problem while solid wastes associated with the coastal tourist resorts posed a problem in the southwest coastal areas.

The present opportunity should be used to develop and implement a solid waste management plan for each of the affected local government bodies or districts under the standards and guidelines prepared by the CEA. Where possible, as the Bank Report suggests, the recycling of rubble and building material for future road and other construction should be considered both to save on future material costs as well as reduce the amount of waste disposal.

c) Clean-up of Wells, Waterways and Agricultural Lands

The tsunami waters have increased the level of salinity in groundwater and other inland waterways, as well as agricultural lands. The Bank Report pays particular attention to this problem, while remedial measures for groundwater have been suggested, as for example by Dr. Wasantha Lal in his report referred to earlier. Dr. Lal has also alluded to potentially toxic deposits that the tsunami might have left in its wake. As the Bank Report notes, high levels of salinity will have implications for drinking water and the livelihood of those who depend on land cultivation. It may not be possible to deal with this problem in the short term, but priority should be given to initiating the work at the local level with technical support and coordination from the centre.

d) Coastal Land Use Planning Through Community Participation And Strategic Environmental Assessment

Apart from remedying the tsunami damage to the coastal environment, considerable attention is being given to protecting the coastal environment from human activities. Of particular concern is regulating land use or development activity along the coastline. The Bank Report provides useful guidelines for approaching this problem.

Dr. Janaka Wijetunga of the Peradeniya University has outlined the essential elements of a coastal land use plan in his article, “Future Directions for Coastal Land Use” (*The Daily News* of 27 January 05).

General design guidance is available in the handbook, *Designing for Tsunamis: Seven Principles for Planning and Designing for Tsunami Hazards*, published by the US National Tsunami Hazard Mitigation Program.

Cameron Sinclair’s Architecture for Humanity, a New York based group, provides design services to communities affected by natural disasters, emphasizing local traditions, materials and solutions in redevelopment design.

There is controversy over the stipulation of a construction-free zone along the coast – as reported, 100 m along the southwest coast and 200-300 m on the northeast coast based on the inland reach of the tsunami waves. The enforcement of these controls will have implications for the displaced communities, especially the fishing communities, and the tourist sector. It is not our purpose here to discuss the pros and cons of this proposal but to suggest a general approach to dealing with this issue:

- Post-disaster situations are unlike normal land use planning situations. In normal situations professionals can recommend zoning or other restrictive land use regulations based on a reasonable expectation of community consensus. In post-disaster situations, active community consultation and acceptance is necessary before decisions regarding land use regulation and resettlement are made.
- As has been the experience elsewhere, when resettlement is imposed on affected communities without consultation they respond with quiet non-compliance and/or open revolt. There have been signs of the latter already in Sri Lanka.
- Durable settlements are better ensured through participation of the affected communities rather than through coastal survey markers and policing.
- Professionals should work directly with affected communities at every locality in identifying constraints to coastal resettlement and developing local solutions to deal with them.
- The Central Government Agencies should coordinate the identification of constraints at each local level based on flood plain mapping, tsunami ‘trails’, coastal erosion conditions, and other natural environmental significance.
- The Central Government Agencies should develop general directions and guidelines for deciding at the local level the type of land use allowed, shoreline setbacks and building specifications.

e) Resettlement planning through community participation

“We are not beggars” was the recurrent sentiment that the Bank Mission heard from the affected communities (Bank Report: Annex I, Social Impacts, p. 5). That sums up the mindset of the victims and how they would react to any top-down resettlement plan that is imposed on them without prior consultation. The Bank Report’s advice is clear and worth reiterating:

- Where possible *in-situ* resettlement should be allowed, facilitating affected households themselves to undertake reconstruction themselves with cash grants, loans and other supports. Where relocation is inevitable, the guiding principle is to keep the old community intact while allowing those who want to opt out. Relocation decisions must be made in consultation with the affected communities
- Even with relocation, households should be free to undertake the building of their own houses with assistance and support.
- Where housing is built for the victims, be they single detached or flats, community input should be obtained in regard to type of housing and construction supervision.

Needless to say, given the dispersed nature of reconstruction and the requirement for community participation there is no alternative to strengthening the state, private sector and civil society organizations at the local level and providing them with resources and technical support.

In regard to the specific nature of reconstruction and the provision of amenities and infrastructure we suggest the following:

- As far as possible old and new settlements should be provided with pipe-borne water supply and sanitation. The use of septic tanks should be avoided given their long term implications for groundwater sources. The central government should try to get funding support for sewage treatment plants in urban areas, while open oxidation ponds could be used in rural areas.
- Where new settlements are built, grading, drainage, road and underground (water supply and sanitation) works should precede housing construction.
- Resettlement should not become a license for low cost housing, which in turn is a euphemism for creating shanties. Low cost and inferior dwellings without basic amenities and infrastructure are proven failures that will incur direct and indirect future costs due to community instability and environmental degradation.

4.0 Reconstruction Strategy

As the Bank Report rightly notes the immediate post-tsunami relief operations were remarkably sustained by the tide of civil society and private sector response within Sri Lanka and the unprecedented response of the international community. The involvement of local civil society and private sector organizations as well as international agencies in the recovery work should continue, but more importantly the affected communities themselves should participate in the planning and implementation of their own recovery. The geographical spread and the multi-sector nature of the recovery work makes decentralization and local decision making unavoidable. The Bank Report also stresses the importance of using the tsunami recovery strategy to strengthen the stalled peace process between the GOSL and the LTTE. These considerations inform the guiding principles outlined in the Bank Report. Some of the key principles are summarized herein:

- ***Fairness:*** The allocation of domestic and international resources should be “strictly guided by the identified needs and local priorities”.
- ***“Subsidiarity”:*** Each reconstruction activity should be carried out at the “**lowest competent tier of government**” – mostly at the District and Pradeshiya Sabha levels. The recovery work provides an opportunity to substantiate and strengthen Provincial and Local Government structures. The Central Government should “play the lead role in setting standards, policies and principles”.
- ***Consultation:*** The recovery strategy should focus on “enhanced and solid consultation with affected communities and stakeholders” to address the medium and long term needs of the victims.
- ***Communication:*** Mechanisms should be strengthened to make information available readily

especially to the affected communities and to facilitate feedback from them, regarding recovery plans, implementation processes and grievance redress.

- **Coordination:** A coordinated approach is essential and should involve government agencies, donor agencies, all stakeholders and civil society groups, the business community and international NGOs.
- **Transparency:** Priority should be given to providing transparent accounting of all receipts and expenditure of funds. There should be full accounting to parliament, development partners, civil society groups and affected communities. There should also be transparent procedures in regard to the award of contracts and contract payments.

According to the Bank Report the \$1.5 billion reconstruction programme is about 7% of the GDP. The Report suggests that the construction sector will experience 8-10% growth in the next few years, up from 5-5% in recent years. This is expected to push the sector's GDP share from 7.2% to 8% and also increase its labour force share from the current 5.3%. There will be increased demands for merchandise imports, construction machinery and manpower.

Increased construction activity should be planned to benefit the tsunami victims by providing them both training and employment in the rebuilding of their devastated communities. Civil society organizations are particularly well suited to undertake the actual design and implementation of the new rehabilitation efforts. They would be flexible enough to tailor individual designs to local conditions without being hamstrung by regulations and other constraints that invariably accompany official initiatives.

Of particular importance will be the task of mobilizing the required expert and professional resources, including Architects, Engineers (of various specialisations), Earth Scientists, Planners, and Social Scientists.

Among expatriate Sri Lankan professionals, there is a great deal of interest in participating in the post-tsunami reconstruction exercise. Many of them have previously lived/worked in and are familiar with the affected areas. They could be mobilized to work for reasonable lengths of time on a rotating basis through arrangements between Sri Lanka and donor countries like Australia, Canada, New Zealand, United Kingdom and the United States, where most Sri Lankan professionals live.

5.0 Reconstruction Plus

The GOSL Plan includes the development of island's strategic infrastructure components, which are excluded from the Bank Report's need assessment as they are not tsunami related. There have been criticisms that the GOSL Plan allocates nearly 40% of its assessment to road and rail infrastructure, and that spending such an amount is "immoral" considering that most of the aid is primarily intended for human rehabilitation. This criticism has some merit insofar as it highlights the human dimension of post-tsunami reconstruction.

On other hand, building infrastructure also serves many human purposes, and the purpose of tsunami recovery should be not merely to restore the conditions that preceded the tsunami but to enhance them in every way. Poverty elimination and infrastructure enhancement are legitimate purposes of post-tsunami recovery.

Oxfam calls it *reconstruction* and *reconstruction plus* (others call it *reconstruction* and *redevelopment*), and has placed on record that at the Jakarta tsunami aid conference the developed countries committed themselves to aiding both.

It is therefore perfectly legitimate for the government to put forward a comprehensive needs assessment for national infrastructure components along with the tsunami reconstruction package. The GOSL Plan should be extended to include the reconstruction of the previously damaged road, rail and power grids in the ethnic

conflict areas. Additional national infrastructure work will more than double the demand on the construction industry and cannot be undertaken in a short timeframe.

All infrastructure projects should be subject to environmental assessment (EA) and public participation, in order to identify/evaluate alternatives and select a preferred solution based on minimum (natural and social) environmental impacts and potential mitigations

The projects should be planned and carried out over many years and used as an instrument for economic regeneration in Sri Lanka. Their contribution to the GDP will be in the range of 15-20% and will extend over a long period. Their impact on the pool of unemployed labour will also be quite significant. This challenge offers a unique opportunity to initiate a new style of economic and social development that draws in the efforts of private citizens to supplement government efforts.

In the present international climate, non-governmental groups of citizens have a very good chance of obtaining substantial funds from international agencies, provided they can show competence in the tasks undertaken and the leading members have a distinguished record of service in the public or private sector. It is also necessary to raise funds locally to show the extent of domestic support; in fact the raising of local funds is necessary before we solicit external funding.

Postscript: Just as we completed this discussion paper on 12 February, the Sri Lankan Government announced the forthcoming release of a revised 3-year reconstruction plan valued at \$1.8 billion that will be consistent with preliminary assessment of the Bank Report. A separate plan will be developed to address the main infrastructure needs valued at \$1.4 billion over the next decade. We welcome the proposed phasing of post-tsunami reconstruction work and national infrastructure development. We would also reiterate the critical importance of the reconstruction priorities discussed in this paper: temporary housing; clearing the tsunami debris; clean-up of water and land resources; and community participation in long-term resettlement planning.

Prepared by Rajan Philips (Civil Engineer/Urban Planner), with comments and input from Nimal J. Perera (Civil/Structural Engineer); G. Chris Rodrigo (Consultant/Economics); R. L. de Silva (Coastal & Fishery Harbour Engineer); Amali Philips (Social Anthropologist); Philip C. Manoharan (Water Resources Engineer); Lareef Zubair (Environmental Engineer/Climate Scientist); Vidhura Ralapanawe (Engineer/Management Consultant); Maximus Perera (Civil/Transportation Engineer).

12 February 2005