Executive Summary

1. At the request of the Government of India (GOI), the Asian Development Bank, the United Nations and the World Bank put together a joint team which undertook an assessment of the socioeconomic and environmental impact of the December 26, 2004 tsunami in the states of Andhra Pradesh, Kerala and Tamil Nadu and the Union Territory (UT) of Pondicherry. As advised by the GOI, the joint assessment mission (JAM) did not include an evaluation of the impact and losses sustained in the union territory of the Andaman and Nicobar Islands.

2. A group of experts and specialists from different sectors and disciplines analyzed the damage and losses[1] as well as the needs expressed by the relevant state authorities, and UT administration, made field visits to the most seriously affected districts, and undertook - on a sample basis - consultations with local experts, members of civil society and NGOs. The damage and losses presented here reflect the available information, compiled during the Mission's duration (February 1-15, 2005), and the visits undertaken by the JAM to selected affected areas. This is not a final assessment of the damage (see Table 1) and needs (see Table 2) since it reflects information available at the time of the JAM, taking into account that at this time a number of surveys and specialist sectoral analysis are still underway.

Table 1. Preliminary Summary of Damage and Losses ($ million)

	Damage and losses			Effects on Livelihoods
	Damage	Losses	Total	
Andhra Pradesh	29.7	15.0	44.7	21.2
Kerala	61.7	39.1	100.8	36.3
Tamil Nadu	437.8	377.2	815.0	358.3
Pondicherry	45.3	6.5	51.8	5.9
TOTAL (by sectors)	**574.5**	**448.3**	**1,022.8**	**421.7**
Housing	193.1	35.4	228.5	
Health and education	10.7	12.9	23.6	
Agriculture and livestock	15.1	22.4	37.5	26.0
Fisheries	229.6	338.2	567.8	338.2
Livelihoods (Microenterprises and other)	20.0	37.5	57.5	57.5
Rural and municipal infrastructure	28.0	1.6	29.6	
Transportation	35.2	0.3	35.5	
Coastal protection	42.8	0	42.8	
Relief **a/**		200.7	200.7	

a/ Relief provided by the local, state and national governments (not included in Total (by sectors)).
Source: JAM estimates on the basis of information made available by the governments and direct observation.

3. Overall damages are estimated to be $574.5 million, and losses are estimated to be $448.3 million. Whilst the largest proportion of the damages are concentrated in fisheries, housing and infrastructure, material private asset damages related to coastal fisheries, agriculture

[1] Damage (direct impact) refers to the impact on assets, stock, property valued at agreed replacement (as opposed to reconstruction cost) unit prices. Losses (indirect impact) refers to flows that will be effected, such as reduced income, increased expenditure over the time period until asset are recovered.

and micro enterprise livelihoods have been incorporated into the respective sectors. Losses related to livelihoods in these sectors are of particular significance because they accentuate the pre existing vulnerability to poverty of these coastal fisheries communities, agriculture and microenterpises.

4. The JAM's quantification of damages and losses neither supersede nor disregard assessments of damage and needs made locally. It presents a consolidated view, on the basis of relevant information received and the expertise of the multi-institutional and interdisciplinary JAM team. Certain observations on damages and losses suffered are apparent:

a. the disaster is having a significant impact on the states' livelihoods (about 38% of the total damage and losses imposes negative consequences on livelihoods) in the coastal environment and the local economy. In particular, it provides a measure of the economic impact of the tsunami on the fisheries sector and related livelihood in coastal communities of the affected states and union territory. An effort has been made by the JAM to highlight some relevant social issues for the reconstruction process, in the context of the states' and national development strategies;
b. at this juncture, the affected areas have already moved from relief to reconstruction – although for some sectors and groups of affected people, relief will still continue for several months. During this transition, the protection of the most vulnerable segments of the displaced population and the improvement of their living conditions in temporary shelters over the coming months deserves special attention;
c. the JAM recommends that national and state authorities pursue a risk mitigating reconstruction process in the face of damages resulting from specific recurrent hazards that the tsunami has just put in clearer perspective. Disaster of this nature is a "wake up call" to better evaluate vulnerability and improve risk management;
d. Such a risk mitigating reconstruction process can reduce vulnerability in the medium term, increase resilience to specific local multi-hazards, and inserts itself in the larger district, state and national development strategies. Seen in this context, disaster can be an opportunity to improve and accelerate the entire development process;
e. given the damages to housing and infrastructure, the provision of permanent solutions to housing and restoration of infrastructure are an immediate priority and require commitment of resources that may not be delayed. Investment in these and location of the new infrastructure (in terms of relocation of housing, restoration or construction of urban and rural infrastructure and resilience increasing measures such as locally adapted and environmentally sound coastal protection) are tied to overarching policy decisions in terms of appropriate coastal regulation and risk management, some of which have significant costs and social and financial implications in the districts and states affected; and
f. the impact of the disaster varies from state to state both in absolute terms and in terms of the relative weight it has on each of the local economies.

5. Table 2 reflects the short term needs (within one year) and medium term needs (up to three years). This table does not include longer term reconstruction needs which are significant in areas such as housing, rural and municipal infrastructure, transportation, and coastal protection; these can only be undertaken reliably after further detailed studies.

Table 2. Preliminary Post Tsunami Reconstruction Needs ($ million)

	Reconstruction needs		
	Short term reconstruction	**Medium term reconstruction**	**Total**
Andhra Pradesh	26.0	46.6	72.6
Kerala	83.8	73.9	157.7
Tamil Nadu	248.6	619.7	868.3
Pondicherry	41.6	72.8	114.4
TOTAL (by sectors)	**400.0**	**813.0**	**1,213.0**
Housing	160.0	329.0	489.0
Health and education	11.9	5.5	17.4
Agriculture and livestock	10.4	11.3	21.7
Fisheries	54.5	229.6	284.1
Livelihoods (Microenterprises and other)	70.6	108.1	178.7
Rural and municipal infrastructure	23.5	74.0	97.5
Transportation	41.5	27.7	69.2
Coastal protection	19.5	18.6	38.1
Hazard risk management	8.1	9.2	17.3

Source: JAM estimates on the basis of states' statements and memoranda.

6. Overall rehabilitation and reconstruction needs are estimated at $1.2 billion, requiring financing over the short and medium term. The estimates take into account that damaged assets need to be replaced with new ones, not only of equal value, but with upgrades to services and infrastructure in order to reduce the previous inherent vulnerability.

7. The sudden and unexpected tsunami has highlighted underlying vulnerabilities to recurrent hazards and the major negative social consequences of such disasters on the livelihoods of the poorest population groups. The negative impact on the livelihoods of the worst affected productive sectors (fisheries and, to a lesser extent, agriculture) spill over to the rest of the community, beyond the actually physically affected areas.

8. The JAM analysis highlights the cross-cutting nature of the disaster's impact, and thus the multi-sectoral, inter-institutional, and multidisciplinary approach needed for the reconstruction process. The disaster points out the need to undertake cross cutting interventions, with a participatory, equitable, flexible, decentralized, and transparent approach beyond livelihood restoration. Better management of the coastal environment and reinforced risk reduction should be seen as part of the overall social and economic strategy, resulting in adoption of realistic, attainable goals in the short and medium term. Effective hazard risk management in the future should be less dependent on relief and assistance, which draws valuable resources from other development goals. Instead, there is a need to promote increased participation of the community in risk transfer insurance, community level risk management and disaster prevention, while giving assistance to those affected.