



Social and Economic Impact of December 2004 Tsunami

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On December 26th
the Earth heaved,
the Sea rose
and
The World Changed



December 26, 2004

Indian Ocean **Tsunami**, affected 10 countries, more than **220,000** people died and many more missing.

Asia has seen such events before

November, 1970

The greatest tropical **Cyclone** this century occurred in Bangladesh in November 1970. Winds coupled with a storm surge killed between **300,000- 500,000** people..

July 28, 1976

A $M_{7.8}$ **Earthquake** occurred in Tangshan, Hebei Province, China, **255000** Died and **164000** people were seriously injured.

1997 Smoke Fire and Haze in several countries of South East Asia



.....But
never in
living
memory
in the
blink of
an eye

Ibrahim Rahmat was out fishing at sea when the tsunami hit his village of Kampung Baru in the coastal sub district of Peukan Bada in Indonesia. Two days later when he returned home, only two of the more than 800 people in the village that day were still alive.

This is not new

The paroxysmal explosion and collapse of the volcano of **Krakatoa in 1883** generated formidable tsunami waves that were up to 37 m in height.



These waves destroyed 295 towns and villages in the Sunda Strait in Western and Southern Sumatra. A total of **36417** people were drowned. The tsunami, volcanic origin (a point source) was only destructive locally in Indonesia.

We commemorated the 120th anniversary in 2003

But we did not really remember.....

Some did use indigenous knowledge and heeds the sign of nature.....

Traditional Wisdom

Indigenous people on the Andaman and Nicobar islands are thought to have escaped the tsunami thanks to traditional warning systems that **interpret bird and marine animal behaviour**. They fled for safety at the first indications — such as changes in bird calls — that something was wrong.

Sea Withdrawing

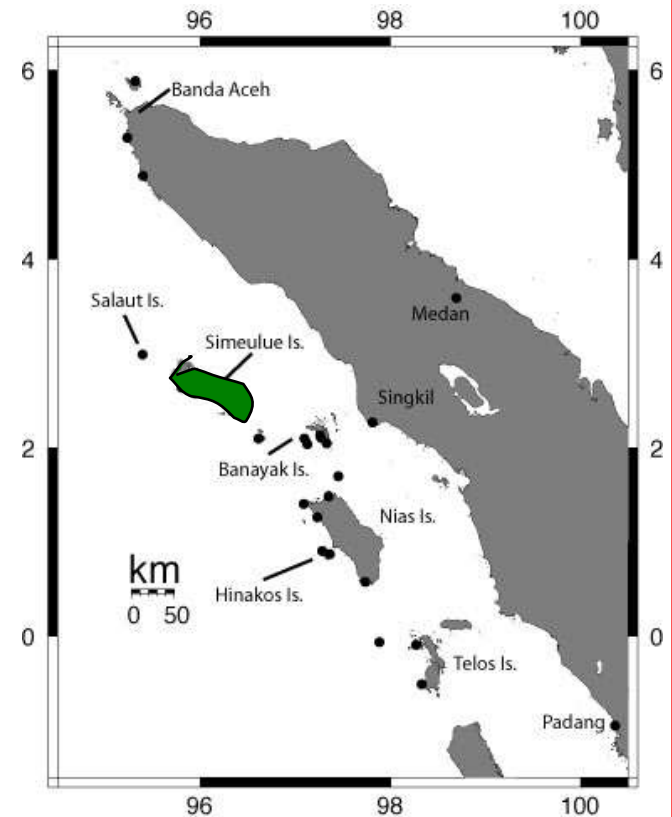
In minutes preceding a tsunami strike the sea often recedes temporarily from the coast.



Others were prepared

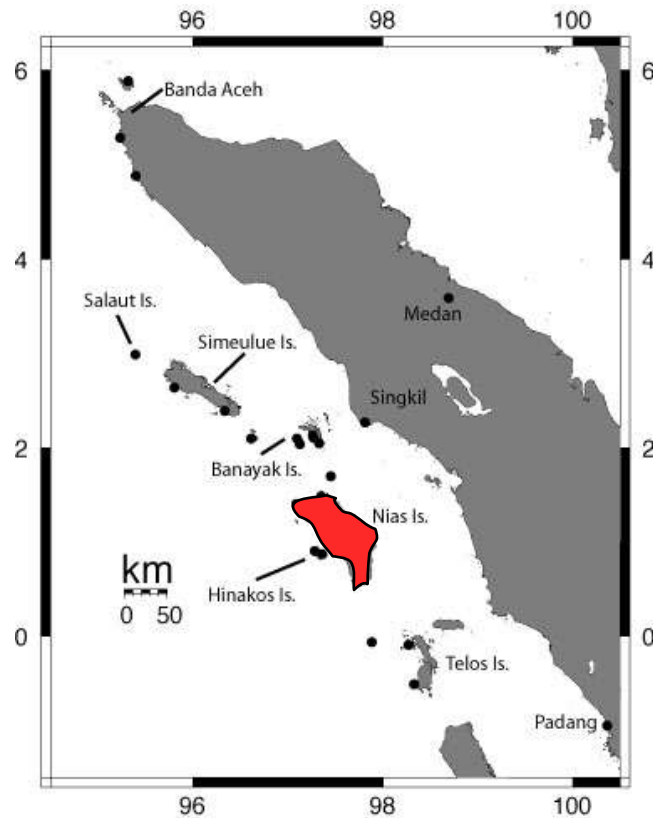
Island of Simeulue off Aceh --- only 40 km away from epicenter but deaths only 7

Islanders remembered the earthquake and tsunami in 1907 which killed over 2000, hold annual practice drills and so fled to inland hills after the initial shaking — before the tsunami struck .



Island of Nias

Only 150 km from Simeulue but the wave claimed **900 lives**



Economic impact of Tsunami



ADPC study for World Bank and ProVention Consortium

The Effects of Disasters

- Damage
- Losses



Macro-Economic Impact

Definition of Damage (Acc to ECLAC Methodology)

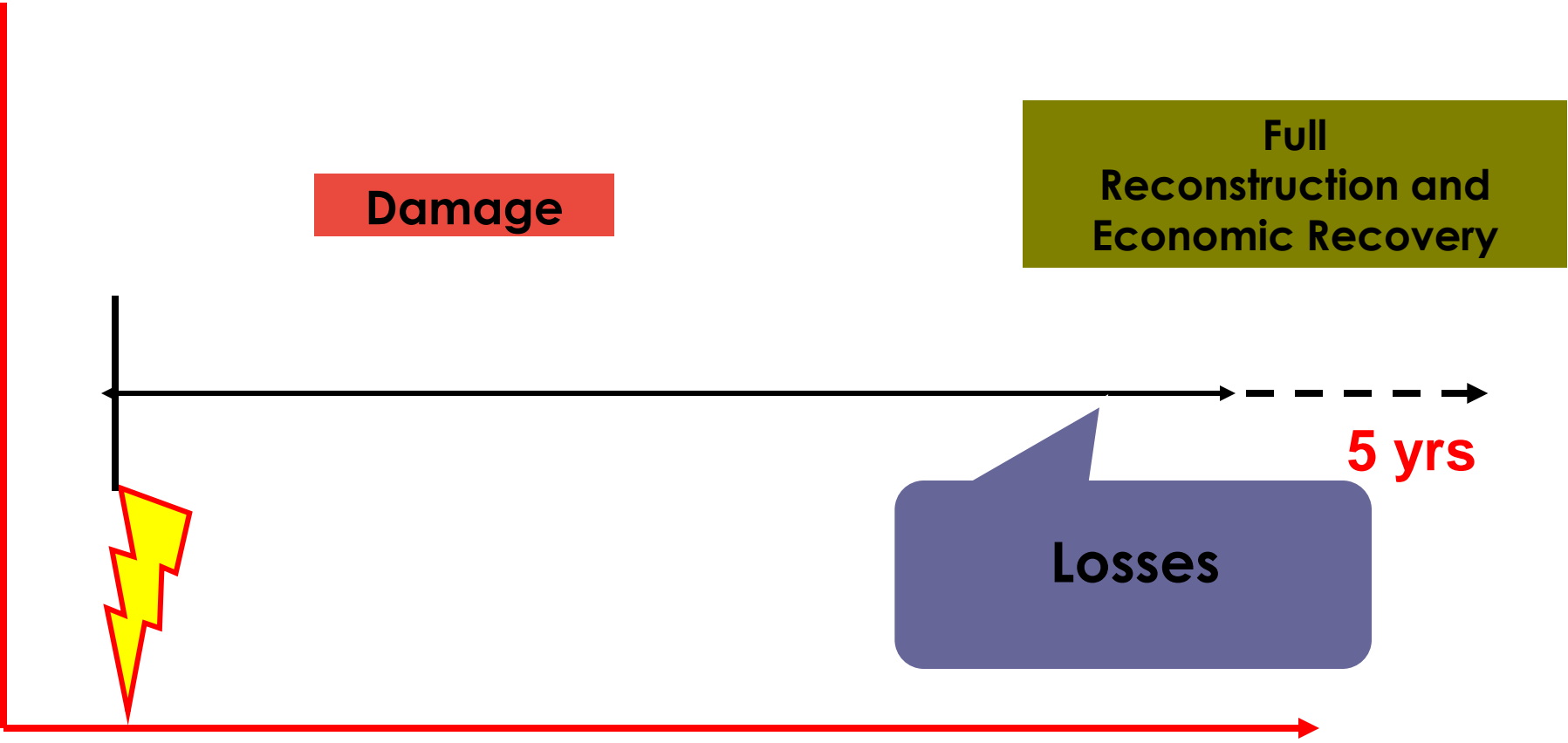
- Total or partial destruction of assets, including buildings, infrastructure, stocks, natural resources, etcetera
- Damage occurs during or immediately after the disaster
- Damage is measured in physical terms, and a monetary replacement value is assigned to it



Definition of Losses (Acc to ECLAC Methodology)

- Changes in economic flows caused by the disaster
- They include:
 - Production not obtained, and corresponding higher production costs
 - Higher operational costs and lower revenues in the provision of essential services
 - Unexpected expenditures (humanitarian assistance, demolition and debris removal, relocation of human settlements)
 - They occur from the time of the disaster until full reconstruction and economic recovery are achieved
- They are measured in monetary terms at current prices

The Timing of Disaster Effects

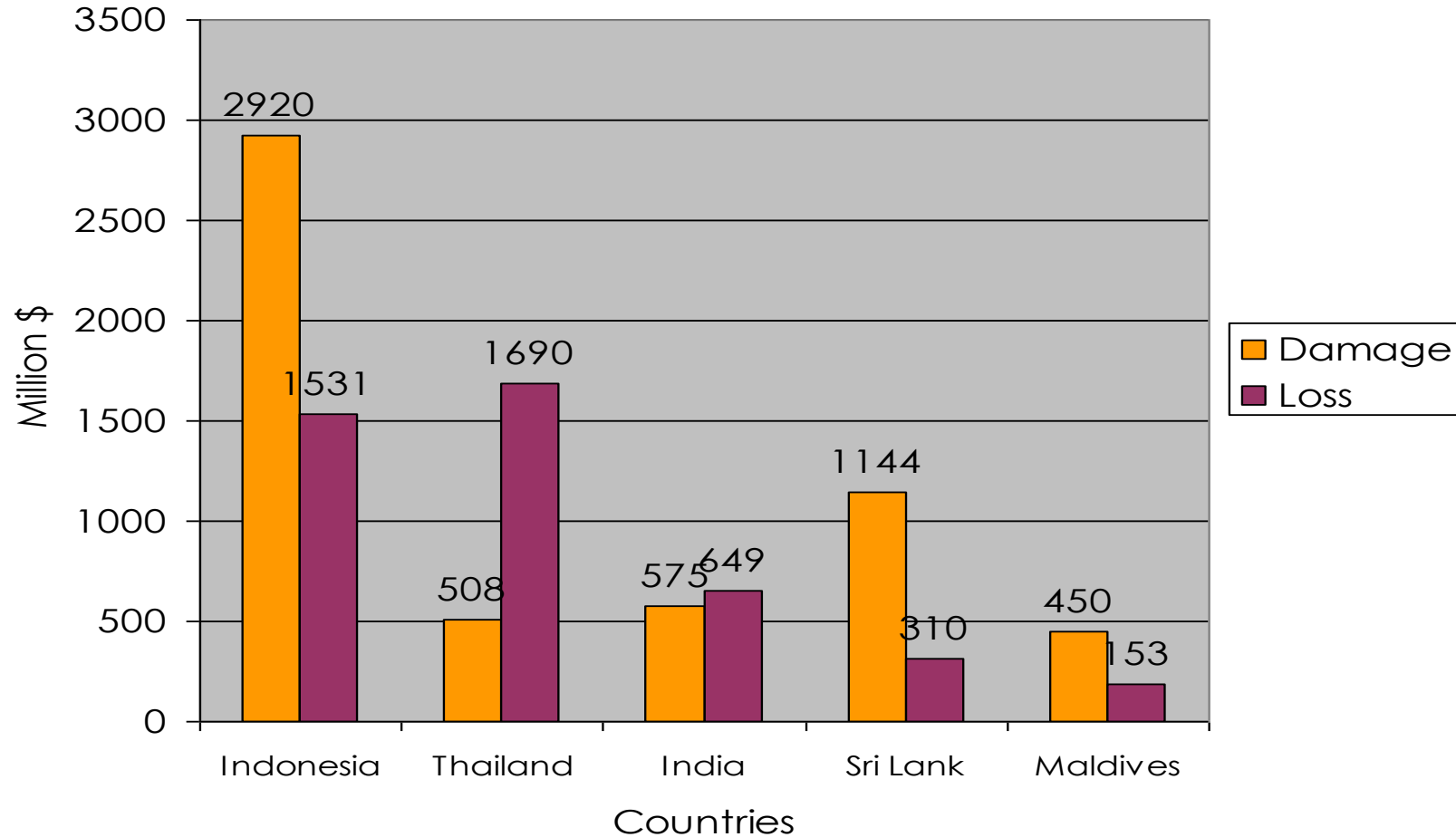


Total Impact of Tsunami (Million US \$)

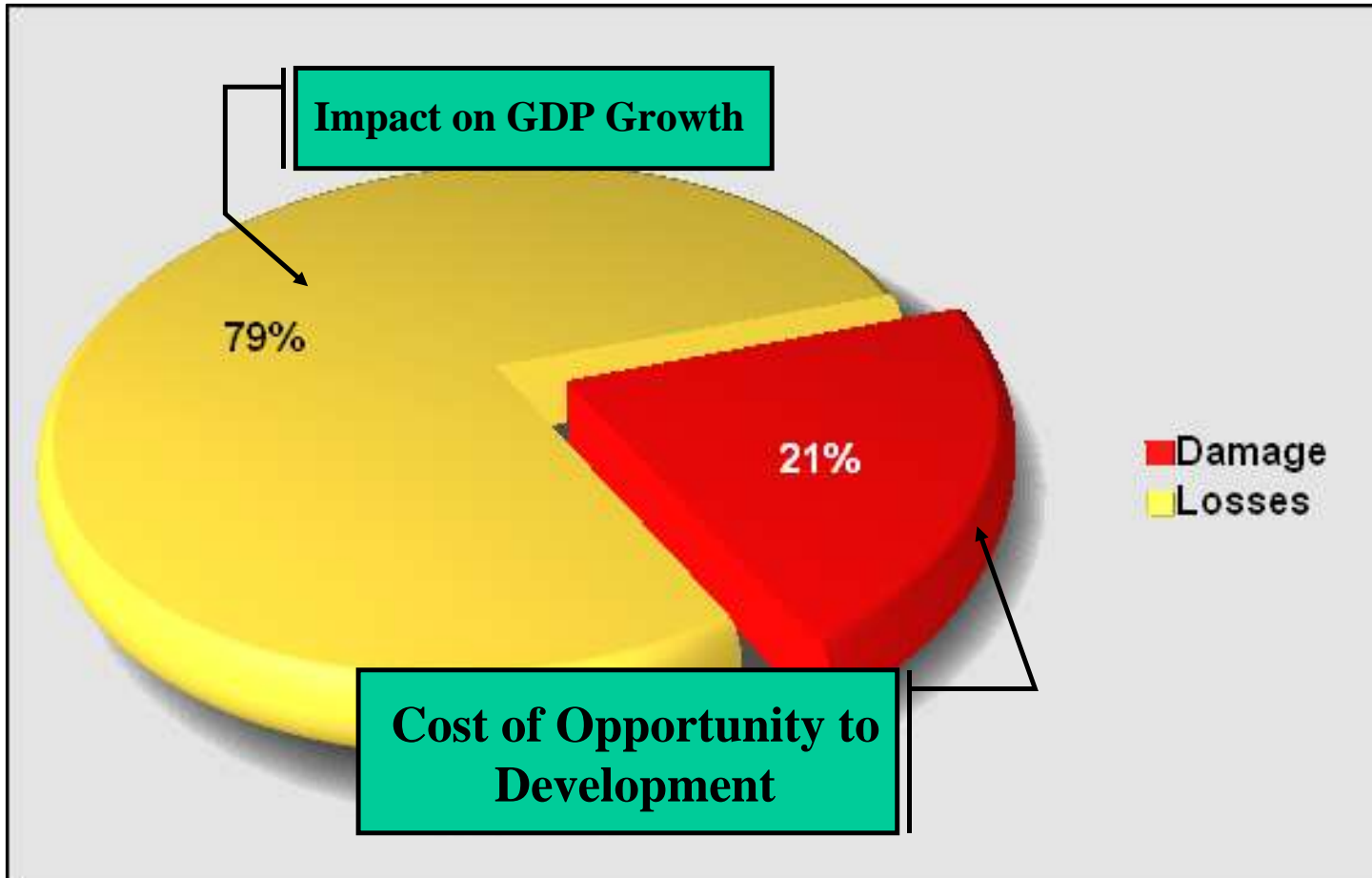
	Damage	Loss	Total
Indonesia	2920	1531	4451
Thailand	508	1690	2198
India	575	649	1224
Sri Lanka	1144	310	1454
Maldives	450	153	603
Total	5597	4333	9930

Total Impact of Tsunami (9930 million US \$ for 5 countries)

Total Impact of Tsunami (Million US\$)



Damage vs Losses In Thailand



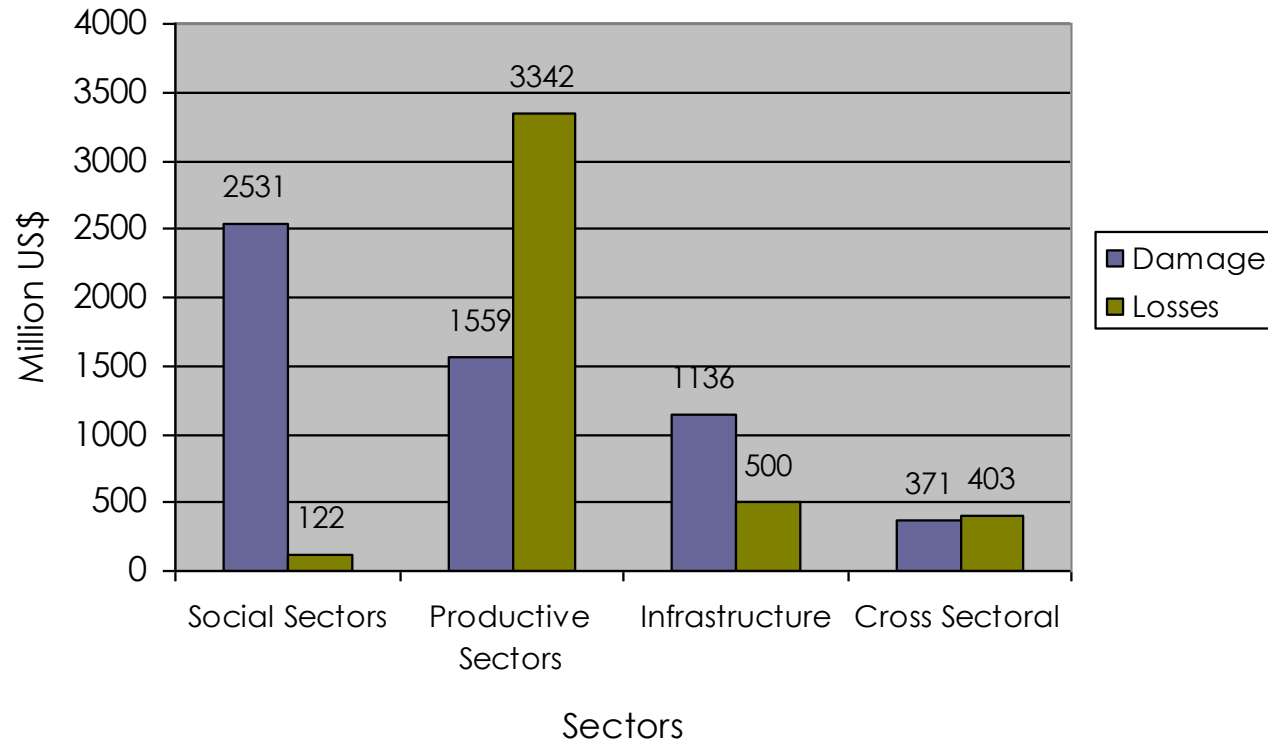
Thailand Unique Case, Ratio of Damage : Loss is 1: 3 mainly due to losses in Tourism and Fisheries

Impact Sector wise

- **Social Sectors**
(Housing/ Health/ Education/ Cultural and Religion)
- **Infrastructure**
(Transport/ Communications / Energy/ Water and Sanitation / Flood control, irrigation works)
- **Productive**
(Agriculture and Livestock / Fisheries / Industry and Trade)
- **Cross Sectoral**
(Environment Governance and administration Bank and Finance)

Losses in Productive Sector (which is largely Private owned) is double the Damage,

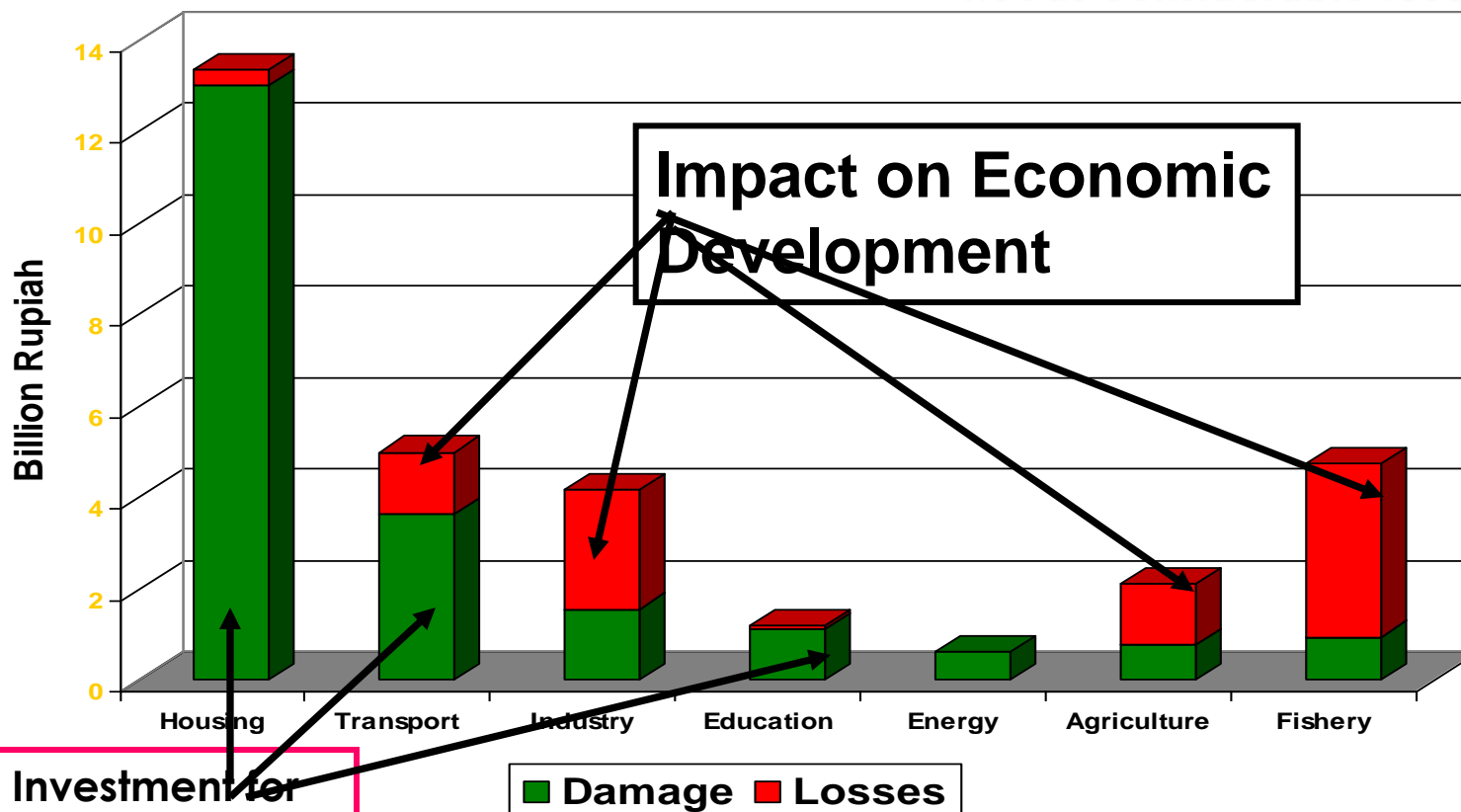
Sectorwise Damage and Losses for Region (Million US\$)



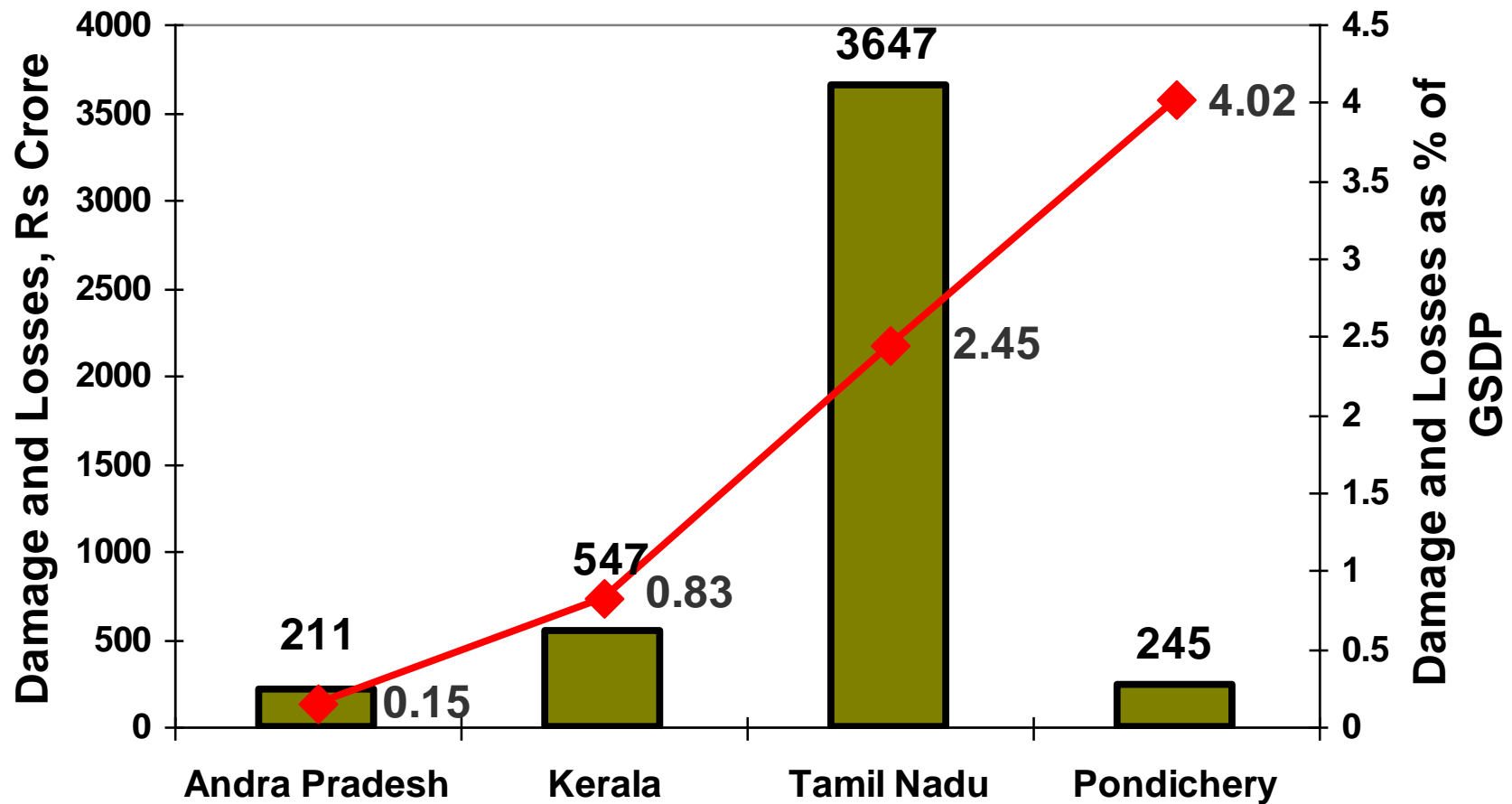
Individual Sectorwise Impact of Tsunami in Indonesia

(Damage 63%, Loss 37% of Total Impact)

Housing, Fisheries, Industries most affected, so Private Sector needs considerable resources



Impact of Tsunami on GSDP of States in India



Provinces Affected in 5 countries

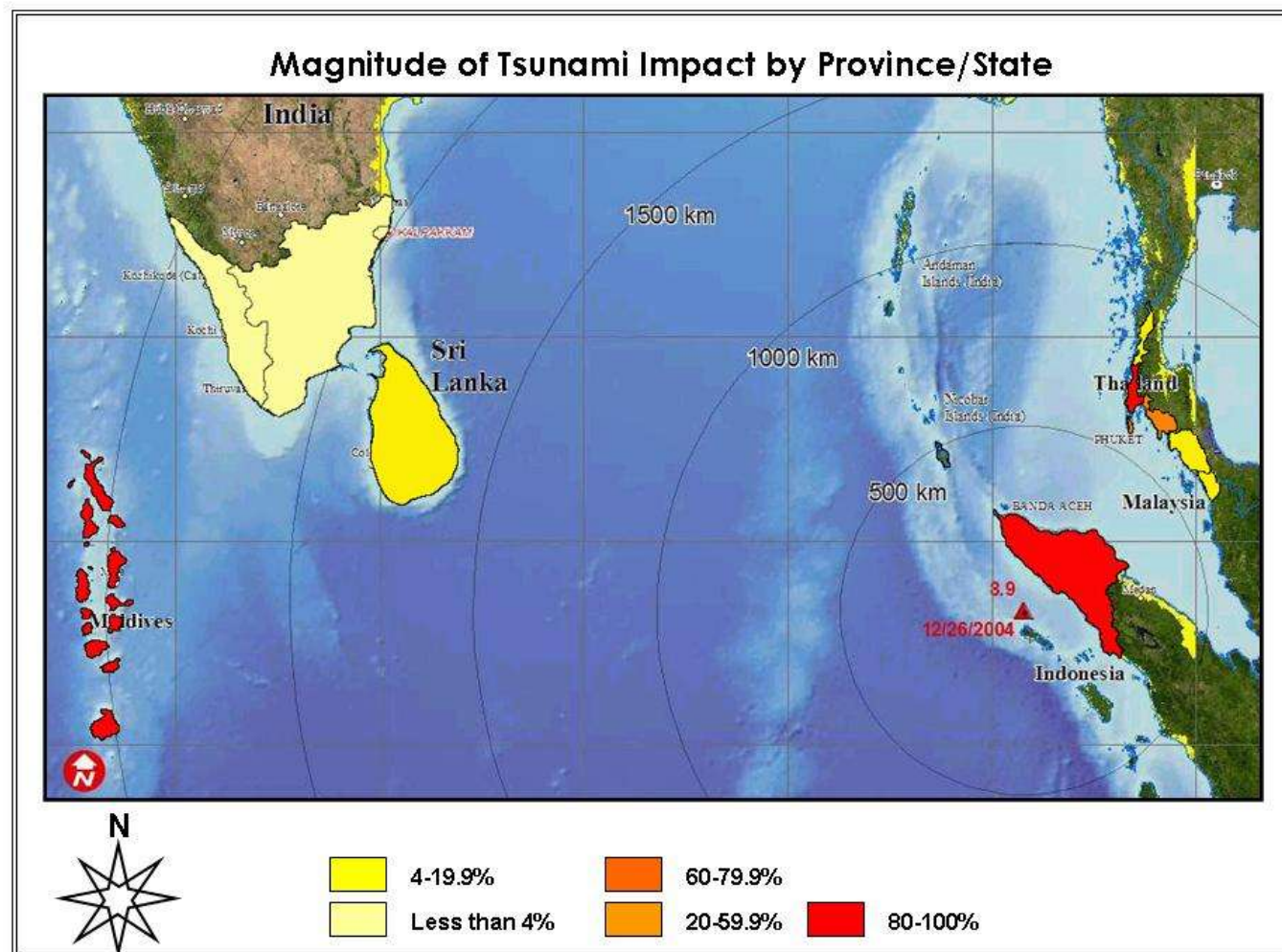
Indonesia	Thailand	India	Sri Lanka	Maldives
Aceh	Krabi	Tamil Nadu	Ampara	
North Sumatra	Trang	Kerala	Batticaloa	
	Phang Nga	Andhra Pradesh	Galle	
	Phuket	Andaman and Nicobar	Hambantota	
	Ranong	Pondicherry	Jaffna	
	Satun		Kalutara	
			Colombo	
			Gampaha	
			Puttamlam	
			Killinochchi	
			Mullaitivu	
			Matara	
			Trincomalee	

Per Capita Impact of Tsunami on affected provinces

	Population, (million)	Per Capita GDP, (US\$)	Total Impact, (million US\$)	Per Capita Impact, (US\$)
India				
Andhra Pradesh	78.88	378	45	1
Kerala	32.74	371	101	3
Tamil Nadu	64.20	518	815	13
Pondicherry	1.03	1248	52	50
Indonesia				
Aceh	4.04	1137	4451	1102
Maldives	0.32	2271	637	2009
Thailand				
Krabi	0.39	1879	504	1292
Trang	0.64	1622	62	98
Phuket	0.28	1826	354	1243
Phang Nga	0.24	5649	1201	5090
Ranong	0.18	1656	48	268
Satun	0.27	1848	31	113
Sri Lanka	19.17	1054	1454	76

Total Economic impact on the Region at Provincial Level (Total Impact vs. Gross Provincial Product :GPP %)

Provinces of
Indonesia,
Thailand and
Maldives need
significant
assistance and
time to recover
from the effect
of disaster



Social impact of Tsunami



Disasters bring disruption in the normal social life, create chaos, tear down social structure and destroy social order, so understanding social impact may be viewed as the study of 'social pathology'

(Dynes et al 1978)

“Disasters provide a realistic laboratory for testing the integration, stamina, and recuperative of a large scale social systems. They provide the social scientists with advantages that cannot be matched in the human behaviour in a more normal or stable conditions”

(Frtiz-1961)

Social impact of Tsunami

- **Disrupt Functioning Societies**
- **Have disturbing impact on Social Relations**
- **Enhance Vulnerability of most 'Vulnerable'**
- **Differential Impact on CHILDREN, POOR, WOMEN, AGED**
- **Exacerbate poverty and set back poverty reduction**
- **Reveal new strategies and hidden capacities**
- **Have transformative potential**



Impact on CHILDREN

Thousands of Children being witness to the death of their parents, high levels of loss, human suffering, injury and mistreatment.

Challenges

Trauma-Prolonged anxiety and stress

Care of Orphaned Children

Inheritance right to property and land of orphaned child

Child Abuse

Children work but Contribution to livelihood not recognized

No proper documentation in village of child being moved to institutions

Vulnerabilities of non orphaned child as severe: especially those with unemployed parents



Good Practices

Reducing trauma by encouraging the child to express and talk and facilitating their participation in **in disaster, relief and recovery**.

Setting up of orphanages and Institutionalization of Children should be the **last option** for children affected by the tsunami. Initiatives to support to surviving family members and relatives to help maintain themselves and the child are preferred.

Identify informal care systems that exist in the community for e.g. relatives or neighbors taking care of children.

Priority must be given to **family reunification** in the case of separated children

Protect children's **inheritance right to land and property**, and administration hereof by legal guardian until the child reaches maturity.

Special efforts to **prevent abuse** in camps and families.

Impact on WOMEN



Female-headed households present a particular vulnerability as the women have to deal with their own psycho-social distress, loss of livelihood and the care of their dependents.

Women's death outnumbered Men

284 off 366 in North Aceh, 391 of 537 in Cudalore, India

In the most affected village of Kuala Cangkoy in Indonesia, for every male who died, four females died.

In Pachaankuppam village in Tamil Nadu, the only people to die were women.

(Source: The Tsunamis Impact of Women, Oxfam International)

Causes: Some common; Some specific

Men more often than women are socialized to swim, and climb trees

Women were at home looking after children

In affected coastline of India, women play a major role in fishing and were waiting on the shore for the fishermen to bring in the catch

In Sri Lanka in Batticaloa District, the tsunami hit at the hour women on the east coast usually took their baths in the sea.

Challenges

Safety of women in camps and resettlements areas.

Widows access to husband's **land and assets**.

Serious demographic change, weaken the status of women and increase of domestic violence.

Women's mobility restricted with outnumbered men.

Forcible **early marriage** of young women to early widowers , affecting their education and reproductive health.

Transformation of traditional gender roles or increase in women's workload.



'Palli, was extremely distressed after the loss of his life and would often sit alone wondering what he would do without a job and with two small girls to feed and marry. But we never thought he would go to such extremes and commit suicide.'

Vallia from Pudukupam village in Cuddalore, India

Good Practices

Participation of women in all livelihood and resettlement decisions. Lace making, coconut husks, fish processing.

Assessing the different **needs** of women and men in all rehabilitation programmes, and Using **sex-disaggregated information** for policy making

Gender equality in livelihood especially equal cash for equal work .

Joint registration of new assets (House, Boats etc)

Women's specific **mental health** needs prioritized and adequately met. (Kadal Varaintha Dviyam "Drawing by the Sea")

Protecting women from **sexual violence and exploitation**; ' **We Can End Violence** ' Campaign

Recognize **capacities of women**



Impact on AGED



Paravathi 60 from Nagapattinam, supported her alcohol addict son's family of five from her earnings

Challenges

Age discrimination, not recognizing old people as vulnerable.

Not being included in **Relief** activities and **Reconstruction** need assessment. A lack of consultation means older people excluded from livelihood rehabilitation programme and more dependent either on their family or on government.

Property Rights (Mrs. Yuen, 85 from Phangnga, Thailand had lived on the same plot of land for a long time, but suddenly after the tsunami, a new owner showed and said This is my land and not yours).

Exclusion from credit and income generation programs which exacerbates their isolation.

Social protection

Poor health, have lost medical histories, and walking aids

Trauma and stress

“ I have no where to go and I don't know where the next food is coming from. If there is no alternative I will beg on the streets.”

Ramasamy, 75, Nagapattinam, India



Good Practices

Recognize old people as **vulnerable**, take care of their lack of mobility and health problems.

Recognize old people as experienced capable, and active contributors to family life and livelihood.

Include them in **decision making**, encourage them in taking up roles and task achievement

Restoration of **lost property records** is an urgent need

Link people up with their **families** and loved ones.

Include them in **credit and income generation programmes**.

Impact on LIVELIHOODS



Over 400,000 workers in the affected provinces in Sri Lanka have lost the sole source of livelihood due to the impact of the Tsunami. As a result the country's total number of unemployed may have temporarily risen by 55%.

120000 people have lost jobs in the tourism sector in Thailand (Source UNDP)

Tourism related livelihood

In Thailand Tourism contributes to **5-6% of the country's GDP**

Most of the areas worst hit by the tsunami have economies that depend on tourism e.g. Phang Nga, Phuket and Krabi contribute approx **50% of the country's tourism based GDP.**

An estimated **64.4% of the population's livelihood** depends on tourism and related industries.

An array of **informal and home industries** (fishing, food vendors to handicraft making) are connected to tourism

Hotels, restaurants and souvenir shops have closed leaving **5,000 unemployed**. In Phang Nga alone 3,638 claimed unemployment insurance a paltry 10% of their monthly salaries.

Impact on Tourism Sector (Million \$) in Thailand

	Damage	Loss	Total
Thailand	14648	57324	71972

Beyond market issues the informal sector needs a **financial injection** to procure productive assets and supplies that were swept away by the waves.



Fisheries related livelihoods

The fishing industry is a **main livelihood** source for many **poor households** that were affected by the Tsunami

4913 Large and 3714 Small Boats destroyed
14111 Traps, 1871 Nets damaged

Catch loss estimated at **4% of annual fisheries** catch

Large Damage to **Boats and Nets**

Pre -tsunami debt

Lack of **micro-credit and revolving fund management** capacity by village level fisher organizations



Challenges

Indebtedness to big merchants and informal money lenders with whom many had current borrowings, lack of access to markets and credit, absence of social security nets thus increasing vulnerability

Salt intrusion causing major **environmental changes** will affect the livelihoods based on freshwater aquaculture and agriculture

Difficult to **shift livelihood** because of lack of skill.



Migrants

Migrants deaths unrecognized as they were not Part of **Local Population**

Un registered Burmese migrants afraid to reenter job market

In Thailand, approximately 50% of the 66,021 registered migrants were in fisheries sector (most worked and lived in boats). The migrants are now workers hiding in rubber plantations (homeless and jobless& the industry may be labourless)

Good Practices

Community based **livelihood recovery programme**

Establishment of **community-owned micro-credit** funds for income-generation

Boat Banks and **Village Banks**

Training in alternative livelihoods

Special attention to be given to **economically fragile communities and families**

Establishment of **Fisherman's Cooperatives**

Establishment of **Cold Storages and Solar drying of fish**, Moving up the Value Chain

Promotion of **Eco Tourism**

Impact on ENVIRONMENT



Turtle Nesting Beaches Vanished in Andaman's

In the Maldives, coral reef atolls that were overcome by sea waves are totally without fresh water and could be rendered uninhabitable for decades.

Thousands of rice, mango and banana plantations in Sri Lanka were destroyed almost entirely and will take years to recover.

Challenges

Severe damage to **Ecosystem** such as **Mangroves, coral reefs, forests, coastal wetlands, vegetation, sand dunes** and **rock formations, animal and plant biodiversity** and groundwater.

Spread of **solid and liquid waste** and **industrial chemicals, water pollution** and the destruction of sewage collectors and **treatment plants** threaten the environment even further, in untold ways.

The damage to the environment will make it even more difficult for coastal populations to rebuild their **livelihoods** and resume agricultural or freshwater aquaculture activities.

Opportunities

Recognition of protective power of **natural resources**

Link **Environment and Natural Resource Management** with **Livelihood enhancement and Disaster mitigation**

Impact on Conflict and Peace

- Tsunami hit two areas plagued by prolonged **Civil conflict** and **stalled Peace processes**
- The tsunami – **A Jolt , A Pause, A New Pragmatism**
- A new willingness to **question past certainties**
- Promise of a “**Peace Enhancing**” Recovery
- Challenges of Equity in support to “**Victims**” of Tsunami and Past Conflicts

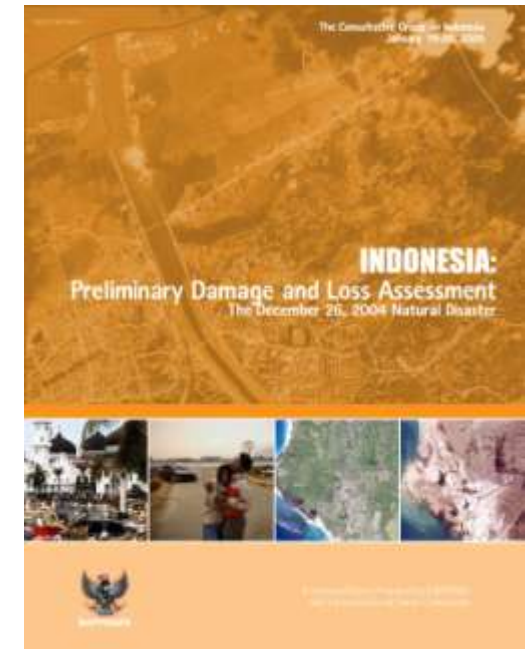
Challenges facing Recovery

Social Aspects of Recovery

- Began at 10am on 26/12/2004
- Psychological scars will be visible until the end of 2085

Poses Challenge to Sanity and Professionalism of all involved

How to get a Recovery program “Right” and restore Shelter and Infrastructure “Safe” to use and protect



Increasing Recognition of....

- Disaster as an opportunity for renewal
- “Blessing in disguise”
- Everyone’s willingness to question past certainties
- “Great danger, great opportunity” (Chinese character)
- “Phoenix” rising from the ashes

But How Do We “Build Back Better” ...

'Better' Recovery Means

- **Disaster resilient (“safer”)**
- **At peace (“unifying”)**
- **Ecologically sound (“greener”)**
- **Respectfully diverse**
- **Gender sensitive (“empowering of women”)**
- **Restorative of livelihoods**
- **Poverty reducing**
- **Reducing social vulnerability**
- **Restorative of childhood (“child friendly”)**
- **Hopeful for the future (“life enhancing”)**

We must Recognize

- **Disasters are not only Tsunamis**
- **More to Disaster Reduction than Tsunami Recovery**
- **Focus on all Hazards**
- **Preparedness and Projection systems are needed to make Early Warning useful**
- **Disaster Risks are Cross Cutting in impact**
- **Mainstreaming Disaster Resilience into Development Planning and Implementation in all sectors**

What Can You Do

- **Support Recovery of all Affected**
- **Support Risk Reduction in all threatened communities**
- **Support Implementation of Hyogo Framework Of Action (HFA) Building Resilience of Communities and Nations 2005-2015**
- **Come and learn how people cope with disaster risks of unimaginable proportions**
- **Contribute your time, professional skills and personally humble convictions**
- **Mobilize and Sensitize your communities and organizations to support implementation of HFA**

THANK YOU