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Introduction

The Asia-Pacific region has witnessed remarkable economic growth and development in recent decades. Since 1990, its aggregate GDP grew three fold – to $17.7 trillion and the share of people living in poverty fell from 49% to 25%. Even at the height of 2008-09 global economic crisis, Asia and Pacific was still the fastest-growing region in the world, supported in large part by fiscal stimulus packages adopted by the region's biggest economies. Further, the outlook for 2010 has improved significantly, with Asia-Pacific region developing economies forecast to grow by 7 per cent, led by China (9.5) and India (8.3).

The Asia-Pacific region is home of 61% of the world's population and 29% of world's GDP and from 1980 to 2009 absorbed an average of 58% of global mortality and 42% of global economic damages caused by disasters. This means that the region has performed better in protecting its human assets than its economic assets, and that despite the commendable economic performance of the region, the region still has a lot to do to improve the resilience of its economies to disasters as compared to the rest of the world.

Between 2002 and 2011, there were 4130 disasters recorded, resulting from natural hazards around the world where 1,117,527 people perished and a minimum of US$1,195 billion was recorded in losses. In the year 2011 alone, 302 disasters claimed 29,782 lives; affected 206 million people and inflicted damages worth a minimum of estimated US$366 billion.

Increasing Disaster Exposure

If there is one thing that we managed to achieve over the many years of prevention is the reduction of the number of deaths due to disasters despite the rise in the number of events. However, what is alarming is the tremendous increase in economic damage due to these same disasters. It is observed that these increases are caused by increased exposure coupled with economic development.

More people and assets are located in areas of high risk. The proportion of world population living in flood-prone river basins has increased by 114%, while those living on cyclone-exposed coastlines have grown by 192% over the past 30 years. Over half of the world's large cities, with populations ranging from 2 to 15 million, are currently located in areas highly vulnerable to seismic activity. Rapid urbanization will further increase exposure to disaster risk.

As a background, the recent Global Assessment Report for Disaster Risk Reduction (GAR) notes the increasing trend for disaster impacts worldwide, is measured in terms of fatalities and economic effects (mostly losses). This trend is driven, according to GAR, by the rapid increase in exposure, both human and economic. The GAR also tells us that vulnerability has improved considerably in the last few decades.

Almost 85% of mortality risk to earthquakes is concentrated in lower-middle income countries, which highlights that while wealthy countries tend to be less risk-prone than poorer countries; most of the recent risks to earthquakes have accumulated in countries, which are rapidly expanding their economies. This means that disaster risk increases if the exposure of people and assets to natural hazards increases faster than countries can strengthen their risk-reducing capacities, including the strengthening of governance capacities, such as the quality of institutions, transparency and accountability.

In the case of floods, mortality risk increased by 13% from 1990 to 2007, but over the same period flood economic loss risk increased by 35%. These increases were found to be due to rapid growth in the people and economic assets concentrated in hazard prone areas. Globally, the number of people exposed to floods increased by 28% in this period, while exposed GDP increased by 98%. Most flood risk is concentrated in countries, such as China, India, and Thailand, which had increased their GDP by 550%, 285% and 218% respectively (based on constant 2000 USD) in the same period.

Also vulnerability declined by 11% in the case of deaths and by 32% in the case of economic loss, reflecting improved development conditions. This means that we are really doing well in our preparedness, early warning, etc. But this decline was insufficient to compensate for the increase in exposure - we simply put more people and economic activities in harms way.

In the case of the recent floods in Thailand, the Chao Phraya basin where all of the floods came from and which drains in Bangkok, covers 30% of Thailand's land area and is where 40% of the population live. However, it is also where 66% of the total GDP is generated and where 78% of the people work. There are projections that the basin will slowly get more urbanized in the coming decade.

In another example, in India, growing cities exposes more assets and people to hazards, with an about 200 million city dwellers likely to be exposed to earthquakes and cyclones by 2050, which is three times more than the 70 million people exposed today.

A new global ranking by Maplecroft, calculating the vulnerability of 170 countries to the impacts of climate change over the next 30 years, identifies some of the world's largest and fastest-growing economies, as facing the greatest risks to their populations, ecosystems and business environments. In this ranking 16 countries are rated with 'extreme risk,' to future climate effects largely due to significant forecasted growth. Bangladesh (1), India (2), Philippines (6), Vietnam (13) and Pakistan (16) all feature in the highest risk category and are of particular importance as they are major contributors to the ongoing global economic recovery and are vital to the future expansion of Western businesses in particular.

And exposure does not necessarily mean physical location. For example, in assessing the implications for the Asia-Pacific region of a slowdown in Japan due to last years tsunami disaster, a recent economics report by ESCAP found that a 1.0 percentage point shrink by from the baseline growth in 2011 of the Japanese economy would have a 0.1 to 0.21 percent impact on growth to China, Malaysia, India, Singapore, and Philippines, including a 0.2 to 0.5 % impact on export growth of these same countries due to disruption in inputs from Japan as part of regional production chains.

Finally, the IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, whose executive summary was released last November 2011, and the full report this February 2012, notes that "settlement patterns, urbanization, and changes in socioeconomic conditions have all influenced observed trends in exposure and vulnerability to climate extremes (high confidence)."

Strategies for Reducing Disaster Exposure

What are practical strategies to reduce exposure from disasters? Exposure to future disasters has the greatest potential to be reduced if disaster risk management approach is incorporated in land use, urban and spatial planning, and in post-disaster reconstruction planning.

The latest worldwide data shows that only 15% of low-income countries report success in using land-use planning and urban development to reduce risk. Land use changes exacerbate the impacts of disasters. Locating large numbers of vulnerable communities or economic assets in flood prone riverbanks, extensive deforestation and mining, and conversion of farmlands into urban development increases the risks of damages due to floods.

The recent floods in Pakistan, Thailand and the Philippines have put focus on the urban development, watershed management and community preparedness systems. There is also some anecdotal data that private investments create new risk through new economic areas and zones, which lead to concentration of population and assets in coastal areas and flood plains.

The private sector, largely accountable for economic growth and financing infrastructure, should share in the responsibility for the risks they create, rather than having the public sector solely paying for them. There has been greater exposure to disasters, yet there is no apparent link between growth and disaster risk reduction.

The following section looks more in depth at the opportunities for reducing disaster exposure during recovery and reconstruction.

Reducing Disaster Risks During Recovery and Reconstruction

The Hyogo Framework for Action highlights the importance of mainstreaming disaster risk reduction efforts within urban planning and reconstruction of building and infrastructure projects.

Post-disaster reconstruction is often seen as a chance to rebuild better, reduce future disaster risk, and improve the quality of life of the affected communities. However, the haste to "recreate the familiar" & "return to normal" tends to skip the concept of "building back better" in the post-disaster reconstruction.

A typical barrier to the adoption of more DRR in recovery and reconstruction include barriers to fundamental land use change (cost, prior investments, property ownership, and commercial interests), lack of community involvement in the recovery and reconstruction planning, and the haste to reconstruct, which in turn results in less reduction of exposure during reconstruction.

Community Focused Recovery

One important aspect of incorporation of risk reduction during reconstruction is community-based approaches in reducing risks. For example, considering cultural dimensions and livelihood patterns of affected communities will ensure that policies and technologies used during reconstruction will cater to the needs of the communities.

Importantly a disaster may offer an opportunity for communities to change the way they think. By involving communities in the very early in the recovery process, it provides an opportunity to build on community's cultural and social resilience. For this to happen, however, communities need to be involved in the planning and execution of the activities in the recovery. Governments can therefore develop standards and strategies for community participation and input, based on an understanding of community strengths and weaknesses.

Proper Resourcing and DRR During Recovery

The International Recovery Platform has found that one of the most important requirements for a resilient recovery is to allocate sufficient time and resources. If the time frame is too short the danger is that the recovery processes may build back vulnerabilities or even increase them, while risk reduction will amount to little more than a series of add-on training programmes.

In addition to sufficient time, the scale of financial resources available for recovery, especially from non-governmental sources, is also an important aspect of the success of the recovery and the success of the inclusion of disaster risk reduction. Resources can come from national, local and community sources within Governments, and through pairing of economically strong and less developed local governments.

Linking loans from donor communities and private sector to risk reduction efforts can also be a means of ensuring that these investments are sustainable and does not create new risks. Donor aid and post disaster loans are a source of cheap funding to help recovery and reconstruction in the aftermath of a disaster, and should be encouraged to also be the source of mitigation and resilience building within recovery and reconstruction period.

Consider Social, Cultural and Natural Heritage in Recovery

The post-disaster recovery reconstruction processes usually focus primarily on providing the essential needs for the local communities and on rehabilitating basic infrastructure. Because of this, the attention paid to the damage caused by this disaster to the cultural and natural heritage becomes limited. However, the reality is much more complex, and social fabric often requires rebuilding of other social structures, including cultural heritage and places for worship.

Improve Post Disaster Land Use and Construction Practice

It is often said that post disaster recovery and reconstruction should not rebuild back risks. However, in the haste to rebuild, sometimes un-intentional risks are re-created both in terms of location and in the structures that are rebuilt.

For example, in 1954 an earthquake caused massive damage in a town in Algeria. Then, just 26 years later following a building boom, an earthquake again devastated the same town. Eighty-five schools were destroyed caused by unsafe reconstruction following the previous earthquake. This means that the rush to rebuild can often result in lower safety standards being adopted during recovery.

In another example, after the destructive cyclone in Bangladesh in the 1970s cyclone shelters were built in areas adjacent to the Bay of Bengal. However, the shelters were poorly designed, ill sited and often located beyond a reasonable distance for people to access in times of need. Twenty years later, after a major cyclone in 1991, Bangladesh redesigned the cyclone shelters, and enlarged, and relocated them in closer proximity to current population centers.

In another example, after the 2004 Indian Ocean Tsunami, many affected countries created “red zones” along the coast moving entire populations out of the way of possible future tsunami. However, displaced communities often need the proximity to the sea because of their livelihood, and thus in the case of Indonesia, lifted the “red zone” area not long after the disaster. It is therefore important to find a balance between relocation and reducing exposure and creating weak communities due to lack of livelihoods.

Need for More Coherent Approaches for Reducing Risks During Recovery

Most governments have not fully developed coordinated and coherent action on disaster risk reduction across different sectors and between central and local governments, and between the phases of the disaster risk management cycle. Institutional arrangements, legislation, policy for disaster risk reduction, and capacities tend to be anchored, when in place, in disaster response which may not have the authority or capacity to influence decisions related to national development planning and investment.

Some of the lessons that need to be considered to ensure that recovery and reconstruction incorporate DRR thus:

- Promote a community-focused recovery

- Proper resourcing and DRR during recovery
- Consider social, cultural and natural heritage in recovery
- Improve post disaster land use and construction practice

In addition to the issues identified above, some lessons from literature on how risk reduction can be incorporated into disaster recovery

- Integrating disaster risk reduction into any prior planning of recovery
- Prior assessment of risks
- Incorporation of risk reduction approaches into the implementation of emergency preparedness and response
- The development or strengthening of institutions, legal mechanisms and capacities
- Building risk reduction values and approaches into the human dimensions of recovery.
- Ensuring the more tangible aspects of risk reduction are applied in the physical reconstruction of new buildings and infrastructure.