



ISSUE BRIEF

Public Investment in Disaster Risk Reduction

Ministerial Roundtable

I. Stocktaking

The impact of disasters have been on the rise over the last decades primarily due to the high level of exposure and vulnerability of a rapidly increasing number of people located in areas that are prone to natural hazards. The impact of disasters creates not only human suffering but impacts economic growth, puts a heavy strain on public finances, and disproportionately affects the poorest and most marginalized and their livelihoods.

While the positive cost-benefit ratio of disaster risk reduction has been repeatedly acknowledged, the right incentives are still not in place for the systematic incorporation of risk reduction into national and sector-level public investment strategies. In fact, it is still the case in a significant number of countries – 62% according to some data¹ – that disaster risk reduction is delivered through stand-alone investments and projects. By and large, budget figures for hazard-proofing development investments cannot be found, either because they are not there or because they are difficult to capture due to varying terminology or accounting practices.

Two perceptions exacerbate this issue. First, that there still exists a tendency to consider the management of disasters as exogenous shocks rather than endogenous risks. Second, that disaster risk reduction budgets compete with other priorities for scarce resources instead of being seen as an enabler of sustainable development.

More decisive actions to strengthen risk reduction measures are needed to increase the sustainability of investments. For example, infrastructure that is now being damaged by disasters was once the result of public or private investment decision. In this context, public investment strategies for disaster risk reduction are an indispensable building block to reducing the human, economic, and environmental losses caused by future disasters.² Similarly, social investments in communities, whether they be in technologies that help people connect, measures that ensure social and economic inclusion, or capacity-building among communities, can reap benefits in terms of increased resilience to cope with disaster impacts.

Since the last decade, the occurrence of intensive and extensive disasters in many countries around the world, the Hyogo Framework for Action, and international disaster risk reduction advocacy efforts have generated a higher interest in disaster risk reduction by countries, particularly those that have been repeatedly affected by disasters and incurred significant losses. Ministries of Economy

¹ “Exploring Existing Methodologies for Allocating and Tracking Disaster Risk Reduction in National Public Investment”, UNISDR, 2013.

² “Disaster Risk Reduction and Public Investment Decisions: The Peruvian Case. Lima: Project Public Investment and Climate Change Adaptation BMU/GIZ, FLACSO”, Allan Lavell, 2013

and Finance have started looking closer into this issue of disaster risk reduction vis-à-vis public investment decisions. In a few countries, for example Peru, the use of risk analysis in public investment processes has been standardized and made obligatory for both new and revised development projects³.

Some countries of Central Asia and South Caucasus, too, have strong legislation that makes risk analysis obligatory for new and existing infrastructure and systems. In 1996-2000, for example, Uzbekistan has implemented the program of school safety, having evaluated and strengthened structural and non-structural safety of 10,000 schools nationwide. Construction of strategic highways and communications in Tajikistan includes additional risk reduction measures, and several countries of Central Asia and South Caucasus have invested in river bank reinforcement systems based on the results of flood risk assessment and analysis.

Progress achieved by several countries in this area has been possible thanks to efforts made to raise the level of consciousness of decision-makers, enhancement of social networking involving key stakeholders, conceptual and methodological development and specifications, the establishment of norms controlling the process of investment analysis and the training of project investment specialists and risk analysts and assessors.

Conceptual and methodological frameworks have been developed for the process of pre-investment disaster risk and cost benefit and cost efficiency analysis. The consistency and homogeneity of the conceptual framework have been considered a key factor in ensuring the success of initiatives aimed at integrating disaster risk considerations into public investment.

II. Overview

Public infrastructure and services are critical for the development and economic solvency of nations and their people. Without them, economic sectors could not function properly and basic services for the society and its development wouldn't be available. Critical infrastructure has the potential to reduce the loss of life and property during and after a disaster, and what is critical depends in the situation and the hazard. But critical is not a synonym of its importance in normal times, and the choice requires informed judgment.⁴

If countries are to engineer a shift to proactive risk reduction, a better understanding of economic and social losses that governments, including ministries of finance (as the institution with overall fiduciary responsibility) are facing, and what losses they are able to bear, is required. Political leadership, better information on impact and costs, and international experience sharing of best practices to increase budgetary allocations by nations will also be required to enhance public investment and generate political will to invest in and integrate disaster risk reduction into investment planning.⁵

Main challenges for advancing the implementation of development-based disaster risk reduction initiatives include the short-sighted nature of political time horizons. As a consequence, at times political leaders focus on the immediate demands and needs of key constituents and voters. The potential benefits of disaster risk reduction tend to be distant and less apparent thus are likely to be

³ Lavell (Op. cit.)

⁴ "Natural hazards, Unnatural disasters: the economics of effective prevention", The World Bank and The United Nations, 2010

⁵ "Building capacity for increased public investment in climate change adaptation (CCA) and disaster risk reduction (DRR) – Latina America: Report to the Meeting of the Regional Platform, Guayaquil, May 27-29, 2014", UNISDR, The World Bank, 2014

of less interest to most politicians.⁶ Another challenge is related to political costs and opportunity costs as allocation of resources to a particular disaster risk reduction activities have uneven impact and may affect specific constituencies that may be critical to a politician's support base. Additionally, in many cases, the widespread public benefits of reducing disaster risk are not easily grasped by citizens and thus politicians may have little incentive to provide them and, as is often the case, they will privilege more visible and politically profitable investments.

The influence that business interest and other pressure groups can exert over political leaders to carry-out developments in highly exposed areas thus creating new risks or by using building practices that can actually increase the risk of disasters constitute an additional challenge. As a result of this, frequent examples of this type of behaviour are abundant around the world where urban and industrial developments are located in areas prone to flooding, landslides, earthquakes, tsunami, cyclones, sea level rise and technological threats, or in some cases, even a combination of two or more of these threats.

There are also some issues in regards to analytical procedures, decision making criteria and information sources. Criticism and doubts surrounding the cost benefit approaches in measuring the efficiency and need for disaster risk reduction refer to the quantitative measurement of costs, the value given to intangibles, limited knowledge as to hazards and vulnerability patterns at local level, uncertainties as to the internal discount rates that should be applied. Some problems are also recognized as to operational and value judgement aspects.⁷

In spite of the above-mentioned challenges, a number of countries have been successful in establishing or strengthening public investment systems and develop the tools, guidelines and systematize their experiences with the aim at promoting disaster risk analysis for both existing and new investment projects following corrective and prospective disaster risk management practice. Through disaster risk analysis, risk is both identified and evaluated, and can therefore be addressed.

The methodology that is being applied in varying degrees in countries like Peru, Colombia, Guatemala, Costa Rica, Mexico, Panama, Uzbekistan, Pakistan, India, Sri Lanka, Uzbekistan, South Korea and others comprises six aspects: hazard analysis, vulnerability analysis, risk estimation, cost estimates for alternative risk reduction measures, evaluation of alternatives and best option selection. While progress is being made, enforcement is still not totally comprehensive. Ideally, these activities would be fully embedded within project cycles.

There is also a general trend with respect to efforts undertaken to classify and measure the budget allocated to disaster risk reduction. Experiences range from studies that track DRR historical spending to the implementation of new budget programmes and categories that have been developed in Colombia and Guatemala, respectively.⁸

In terms of particular innovation in countries, several interesting experiences deserve to be highlighted including the Adaptation Fund created by Colombia as a competitive fund for reconstruction spending which has served as a laboratory for risk analysis in pre-investment based on an integrated watershed management and territorial planning approach. Sri Lanka has also included some disaster risk reduction components in the approval process for urban housing construction.

⁶"The economics of investing in disaster risk reduction", Francis Vorhies, 2012

⁷Lavell (Op. cit.)

⁸ UNISDR, The World Bank (Op.cit.)

Factors that enhance a country's capacity to put in place disaster risk reduction measures and development-based disaster risk reduction initiatives in planning and development institutions include the need to count with strong institutions and political competition; better informed electorate to make governments more responsive, especially if the technical information is translated into language that is understandable and accessible to the population. Also critical is the degree to which citizens are informed and the ability of politicians to make credible commitments to their constituencies.

Lessons learned from recent initiatives dealing with the issue of public investment in DRR conclude that the aspects that may influence and accelerate the advances made include strategic aspects that take into account the development of an adequate conceptual framework, demand by political actors, training, mainstreaming and multi sector approaches; cooperation and an institutional setup that has an integral vision of disaster risk management and its components and that can assume the challenge and guarantee participation, consensus and constructivist techniques of arriving at solutions; and a long term view with clear objectives and a small promoting team with highly motivated and technically competent staff.

III. Way forward

The post-2015 framework for disaster risk reduction can create an enabling environment for countries to prioritise the implementation of development-based disaster risk reduction initiatives in planning and development institutions and to further develop the work that a number of countries begun during the implementation of the HFA to introduce disaster risk analysis into the different phases of public investment.

Although it may not always be easy or even possible to quantify the various benefits and costs associated with a potential investment in disaster risk reduction, it should always be possible to produce a list of key benefits and costs of investment, some of which can indeed be quantified in monetary terms.

Trillions of dollars will be invested over the next decades in infrastructure and services around the world offering a great opportunity to ensure that a prospective approach to public investment be adopted by national governments and the private sector in such a way as to minimize building of new risks and revert the current trend of continuously growing economic losses due to disasters, and human inaction or omission.

A complete listing of key stakeholders related to a potential decision on disaster risk reduction or investment can help make clear who is an interested party. Further qualitative or quantitative assessment of the likely distribution of economic impacts will highlight the impacts across various communities and business sectors. This kind of stakeholder analysis can clarify where collaborations and consultations are needed, and ensure a more inclusive decision-making process.

It must be recognized that cost-benefit analyses require the collection of extensive and reliable data and are usually costly. They also require that strategic decisions are made on a number of critical variables including the interest rate used for discounting future streams of benefits and costs and the risk premium. Hence in many cases, countries may be able to improve the effectiveness of their decision-making by learning from the economic assessments of other countries and by applying the results of research made elsewhere. To facilitate this learning, a more systematic collection and dissemination of relevant applied research and economic analysis needs to be put in place.

Initiatives such as the ones being developed in Latin America, where a Network of Ministries of Finance on Disaster Risk Reduction is emerging as the platform for information exchange and capacity building for integrating disaster risk into public finance. In the Indian Ocean Region a similar approach is being contemplated through a regional collaboration of Ministries of Finance which would also hold potential for mutual learning accelerating the integration of cost-benefit analyses into public investment and risk financing strategies for disaster risk reduction.

As governments and other stakeholder look to the implementation of the post-2015 framework for disaster risk reduction, the following factors may be taken into consideration:

1. Budget allocation tracking, or systematic tracking of DRR spending will be an important step and precursor to any kind of assessment of the effectiveness of such investments. Such tracking must also compare budget allocations with actual expenditures, and against targets and actual accomplishments.
 2. Cost-benefit analysis at the pre-investment stage that incorporates disaster risk analysis, and to the degree possible, incorporates probabilistic risk in the conceptual and design phases of public investment planning should be promoted.
 3. Towards this end, training and capacity building with guidelines for officials from individual spending units and planning bureaus in the classification of DRM expenditure (particularly for embedded investments) and introduction to probabilistic risk assessment tools that give simple quantifiable indicators showing fiscal impacts would be needed.
 4. Consideration must also be given to replicating budget allocation tracking systems at the local level to examine DRR resource availability and use. In addition, off-budget expenditure, for example grants from development partners or public-private partnerships, should be documented to assist the government ensure pertinence in investment planning.
 5. Apart from economic investments in disaster risk reduction, social investments in the resilience of communities must be made. Socially cohesive and inclusive communities are better able to cope with disaster impacts. The building of trust, participation and collaboration are important elements for the success of the DRR. In this context, for example, investments in technologies that help communities connect, education and capacity building and inclusive policies should be promoted.
1. All government agencies should be incentivized to include DRM principles in their short, medium and long term strategic plans. Together with ministries of finance, different ministries should investigate thresholds of average annual loss, and at what percentage of GDP lost would prospective DRR be considered a priority in national public investment.