Executive summary

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Disasters can hamper economic growth, affect poverty levels and cause human suffering. Without significant action, the extent and impact of economic and social damage associated with disasters will get worse over the next 20 years, largely as a result of growing exposure of people and assets. This has the potential to reverse development progress in hard-hit areas. Including measures to promote disaster risk management (DRM) in the post-2015 development goals is needed to incentivise investment in advance of shocks to protect lives and livelihoods – but also save money.

The report examines options for including DRM in the post-2015 development framework. Its eight chapters, each authored by leading international experts, combine to explore three scenarios for how it could be included:

1. A standalone goal on disasters, supported by targets. The report assesses targets on reducing mortality, reducing economic losses, preventing impoverishment and protecting and improving health systems;
2. A target on disasters within a goal on 'resilience', 'security' or 'tackling obstacles to development'; drawing on the detailed assessments of the targets mentioned above.
3. Integration of DRM into other goals. The report particularly highlights how DRM could be included in poverty reduction and education goals.

Ultimately, which scenario or combination of scenarios unfolds depends on the purpose and form of the overall framework. Will there be just a few goals or many? Will they apply equally to all countries? Will countries be able to set their own targets and choose their own indicators? Will the goals be focused more on poverty reduction, environmental sustainability or both?

The reports of the UN's Thematic Consultation process, the Secretary-General's High-Level Panel on the Post-2015 Development Agenda and the Open Working Group on Sustainable Development Goals will help determine the answers to these questions over the coming months. Hence, the options presented in this report and the detailed targets and indicators discussed in each of the chapters remain flexible and preliminary at this stage and the scenarios detailed are not mutually exclusive.

Considering goals, targets and indicators for DRM

The report probes the most suitable targets and indicators in each of the scenarios detailed based on a set of criteria developed by an expert group. These criteria are set out below:

Options for goals	Options for targets	Options for Indicators
• Is it understood the same way by all stakeholders? • Can it be communicated clearly? • Is it politically acceptable for key constituencies? • Does it motivate the right actions?	• Is it a priority for poor people? • Would concerted action on the target actually make a positive difference? • Is there a good basis on which to calibrate the target (ambitious but achievable)? • Is the target meaningful at all scales? • Does it reinforce human rights? • Is it simple and easy to understand?	• Can progress be measured every year? • Do reliable, comparable, disaggregated data already exist or can they be developed? • Is measurement likely to be relatively transparent/ corruption free? • Is there capacity to measure progress everywhere or can it be developed easily? • Does the indicator link to the target?

What is quickly apparent is that few targets and indicators can satisfy all criteria. Significant trade-offs emerge – often between incentivising the right kind of disaster-relevant activities, ensuring measurability and being attractive to policymaking audiences. The implications of this are that selected targets may in some cases be suboptimal in promoting effective DRM. Not only that, but if poorly selected, or skewed too heavily towards one of criteria listed above, some may serve to encourage weak practices or perverse incentives (and in the worst cases could lead to increased vulnerability). Consequently, proceeding with care is paramount, but there are viable options as detailed below.

Scenario 1: A standalone DRM goal

Drawing on material in the chapters, an example of a standalone goal, target and indicator set on DRM could be as follows:

Goal	Targets	Indicators
• Reduce the risk of disasters	• By 2030, reduce by 20% the economic loss from disasters • By 2030, halve the number of people killed by disasters • By 2030, no additional people enter poverty • By 2030, all new hospitals and health facilities are built to withstand local hazards	• Number of men, women, children killed by age, location, hazard type and socioeconomic group as proportion of population exposed (combining actual and modelled data) • Direct economic losses as a % of gross domestic product (GDP) (combining actual and modelled data) • % of budget allocated to disaster risk reduction/preparedness • Proportion of people living in poverty in areas exposed to natural hazards (combining actual and modelled data) • Proportion of new health care facilities built in compliance with building codes and standards to withstand hazards

Scenario 2: DRM within a 'resilience'-type goal

Under scenario 2, there is insufficient space or lack of prioritisation of DRM for a standalone goal on disasters. Alternatively, consensus emerges that a disasters target could usefully sit alongside targets on violence, food security or environmental degradation for example, as a way of fostering better integration of risk management approaches to development shocks and stresses. One potential formulation is as follows:

Goals	Targets	Indicators
Enhance community resilience	• By 2030, halve the number of people killed by disasters • Other resilience-related targets, for example : • By 2030, halve violence against women and girls • By 2030, achieve 100% access to adequate food all year round	• Number of men, women, children killed by age, location, hazard type and socioeconomic group as proportion of population exposed (combining actual and modelled data) • % of budget allocated to DRR/preparedness • Other indicators relating to non-disasters target

Scenario 3: DRM mainstreamed in other goals

In combination with either of the first two scenarios, or if DRM is considered primarily as a cross-cutting concern in an effort to prevent DRM from being siloed, Scenario 3 involves the integration of DRM (or resilience-related) targets and indicators across other goal areas. Selected examples from poverty and education goals could be as follows:

Goals	Targets	Indicators
Goal on poverty reduction	Reduce by 1 billion, the number of people 'at risk' [of falling into poverty]	● Proportion of the population above/below the 'security poverty line' of $10 PPP per capita at which the risk of falling back into poverty falls drastically
Goal on education	By 2030, halve the number of children killed in schools by disasters, with no children killed by disasters in new schools built after 2015	● % of newly built early childhood development, primary and secondary educational facilities certified to be in conformity with locally appropriate hazard-resistant building standards, codes and norms ● # of children killed in schools by disasters, with no children killed by disaster in new schools built after 2015 (disaggregated by sex, age and disability)

Detailed analysis of potential goals, targets and indicators across each of the scenarios are explored in the report. The report highlights some important findings.

The type of metric matters – They must support ex-ante action, including on extensive risks

The type of indicators used to monitor progress will have a significant impact on the type of DRM-related activities that are incentivised and how they are measured. A range of impact, outcome, output and input metrics are relevant for tracking DRM activities, each with their own pros and cons (see table below). Impact- and outcome-based categories have the advantage of being relatively simple to communicate and often generate strong political motivation. Input- and output-based categories are typically easier to measure and act as a useful guide to how DRM-related activities can be promoted. However, on their own, none can deliver the spectrum of activities needed to ensure holistic DRM. Where possible, a range of indicators from across the typology of indicator categories is therefore needed, ones that monitor and incentivise both ex-ante and ex-post actions and ones that support action to reduce extensive (small scale, more common) and intensive (high magnitude, less common, more headline grabbing) disaster risk.

Considering different types of metrics

Impact-based		• # of people falling into poverty as a result of a disaster	Pro: Simple to communicate Con: Does it create right incentives or just transfer too much responsibility to ex-post action?
Outcome-based	Actual losses	• Economic losses • Mortality • Economic losses as a proportion of GDP • Damage to household assets • Government expenditure on disaster relief and recovery • Damage to critical infrastructure	Pro: Simple to communicate, politically motivating Con: Cannot track annual progress as would need averages over decades
	Modelled losses	• Average annual economic loss • Average annual mortality	Pro: Can track modelled losses, to get over inter-annual variability, modelling capacity would help assess effectiveness of investments, models already used in some form in many countries Con: Potentially difficult to gain support, expensive, poor coverage of all areas/ hazards
Output-based	Exposure	• % of assets/population exposed	Pro: Relatively cheaper and easier to measure, can be guide to action Con: Only describes part of system, need additional quality/effectiveness factors, exposure needs modelled environment given dynamic changes (e.g. migration, climate change)
	Vulnerability	• % of population with access to livelihood asset protection measures - insurance and social safety nets • % of buildings complying with hazard-resistant building codes	
Input-based	Government	• % of government expenditure invested in DRR	Pro: Relatively cheaper and easier to measure, good guide to action Con: Poor at assessing potential outcomes, quality/effectiveness more difficult to assess
	Sector/firms	• % of firms adopting international risk management standards	
	Households	• % of population with access to risk information	

An outcome-related target, measured using a blend of observational data and modelled techniques, coupled with a set of input/output indicators to guide action, appears one of the most compelling formulations. This combination would have the advantage of supporting ex-ante risk reduction globally by improving the information base on which to act. Such an advance is long overdue.

Tracking annual progress on DRM requires models

As detailed above, a number of the report's proposed targets present the option of using probabilistic risk models in tracking and measuring progress. Such models simulate the losses from thousands of possible events, allowing for an assessment of the damages expected in a given year. These have many advantages, not least of which is the ability to project the impact (and therefore imply the effectiveness of DRM strategies) of disasters on a given population and over a specific time period. This can look at the effects of disasters on a number of variables, including number of deaths, economic losses and levels of poverty. Models also offer the opportunity of assessing preparedness for high-impact low-probability events, a factor that observational records may struggle to adequately account for given the possible 15-year time period of the post-2015 goals.

However, models are not without their limitations. For one, they are heavily dependent on the quality of data inputs, which presents significant challenges for many developing countries. Models are also inevitably subjective; modellers make certain assumptions (and simplifications) across the interactions of various natural, social and economic variables – many of which will be difficult to test empirically over shorter-term time periods. This is particularly the case for flood and drought events, for which risk models are in their infancy. In addition, issues of trust, transparency and ownership present a number of challenges, especially in the contexts of low technical capacity within many developing countries. Nevertheless, models do add value in complementing other observational measures and targets, and their utility in a post-2015 framework should not be discounted. Rather, policymakers may well wish to take advantages of recent progress in the development and application of risk modelling where relevant, particularly with regard to their role in monitoring year-on-year progress and addressing the variable nature of disaster occurrence. This will likely have a number of spin-off benefits for the way in which countries approach DRM challenges.

Coherence between Post-2015 Development Goals and Successor to Hyogo Framework for Action is crucial

Inclusion of disasters within the framework will ultimately secure a considerable amount of political momentum and interest in the delivery of DRM. However, given intense competition between competing development priorities, disasters will invariably have a limited profile within the framework – whether as a standalone goal or mainstreamed within others. A post-2015 framework must therefore not be seen as the ultimate vehicle for delivering the full range of objectives of the DRM community, though it is undoubtedly important. As such, coordination and overlap between other disaster-relevant frameworks is vital for filling these gaps and promoting DRM across all levels of governance. In this regard, coherence between the post-2015 consultative process on a successor to the Hyogo Framework for Action (2005-2015) and the post-2015 development agenda is crucial.