

INPUT PAPER

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FINANCING DISASTER RISK REDUCTION:

TOWARDS A COHERENT AND COMPREHENSIVE APPROACH

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BACKGROUND.....	3
The State of National Financing of Disaster Risk Reduction	3
Financing and the Hyogo Framework for Action	3
The Importance of the Moment: The 2015 Policy Agenda	4
Integrated and Stand-Alone Financing of Disaster Risk Reduction.....	5
RESEARCHING NATIONAL FINANCING OF DISASTER RISK REDUCTION.....	6
Conceptualising the Terms of Reference	6
Financing DRR: The State of Research	6
Taxonomy of DRR Financing	7
Context is Key: Needs and Capacities.....	9
Monitoring National Financing Through the HFA.....	10
Investigating Coherence : Country Level Investigations into DRR Financing.....	12
COUNTRY INVESTIGATIONS.....	14
Mexico	14
South Africa.....	17
Costa Rica	20
Indonesia	23
Philippines.....	26
COMPARING ACROSS CONTEXTS : ANALYSIS OF 6 COUNTRIES	31
How much of a priority is DRR in general development policy and planning?	31
How 'integrated' is the model of DRR financing?	31
How does the financing of DRR operate at sub-national and local levels?	31
Volumes of Financing within National Budgets	32
Does relative wealth affect the way in which DRR is financed ?	32
CONTEXTUALISING NATIONAL FINANCING OF DISASTER RISK REDUCTION.....	37
International Support to the Financing of DRR.....	37
Non-Government Resourcing for Disaster Risk Reduction.....	37
Climate Adaptation Financing	38
CONCLUSIONS AND RECOMMENDATIONS:.....	41
Can we understand how effective DRR financing has been?	41
Can we say anything about coherence and comprehensiveness ?	41
The HFA and the Way Forward.....	41
Combined Recommendation:.....	41
Bibliography.....	43

BACKGROUND

The State of National Financing of Disaster Risk Reduction

The importance of dedicated financing for the reduction of disaster risk may appear rather redundant, or at least self-evident. Without committing funding national governments will not be able to reduce risk. However, it has become increasingly evident that national governments are struggling to invest in risk reduction, and for many, inter-related reasons, a flavour of which are indicated here :

- Complexity of Financing DRR in Public Expenditure : 'Structural features of Public Expenditure Management and of state governance make it difficult for cross cutting issues like DRR to be effectively financed, despite the apparent fiscal savings from doing so. (Jackson, 2011, p. 7)'
- The Inadquacy of Available Funds in General : 'Countries persistently identify the lack of resources over the long-term as a major impediment to effectively reduce disaster risk in public investment (Gordon, 2013, p. 5).'
- An Inadquacy of Funds to Implement Developed Policy : 'Even countries with strong DRR mechanisms and political commitment towards integrated [DRR/CCA] lack financial support. (Mitchell, van Aalst, & Villanueva, 2010)'
- A stubborn adherence to post-crisis reflection on risk : 'Disaster risk reduction and climate change adaptation are like "airbags" or "cushions" that inflate (often too late) when there is a crisis but under other circumstances receive very little attention or finance. (Lavell & Maskrey, 2013)'

The sense of these and other papers that look directly or indirectly at issues of financing of DRR, is that the volume of finance is not the only issue (though it certainly is a very important one) but rather it is the way in which financing is undertaken, what is financed and how, that is also key to what appears to be limited success in the reduction of disaster risk.

Financing and the Hyogo Framework for Action

The mid-term review of the Hyogo Framework for Action (UNISDR, 2011) made it clear that financing was an issue across each of its five priority areas :

Priority one : Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation:

Whilst progress in developing policy was evident the actual financing for the implementation of policy was not. This was particularly evident at a local level where only 20 countries reported dedicated budget allocations to local governments for DRR, even though the majority of countries (65%) reported that it was a legal obligation for local governments to enact DRR.

Priority two : Identify, assess, and monitor disaster risk and enhance early warning.

A lack of progress was reported by quite a few countries, and attributed to the lack of 'technical, financial and human resources.'

Priority three : Use knowledge, innovation, and education to build a culture of safety and resilience at all levels.

A lack of funding was reported for a key area of DRR and education: disaster reduction in school curricula.

Priority four : Reduce the underlying risk factors :

References to a lack of financing were both explicit and implicit throughout the review. Issues repeated the lack of financing at a local level and the need for financing systems to explicitly include DRR, without which disaster risk would not be integrated into local planning and resourcing (UNISDR, 2011, p. 48).

Priority five: Strengthen disaster preparedness for effective response at all levels :

Despite being the priority area of the HFA in which most success was found, the review still remarked that 'financial allocations, especially at the local level, for managing response remain uneven across countries.'

Some of the failure to make financing for into a national priority has been found in the national platforms for DRR, which in general self-selected key stakeholders, often without representatives from the economic and development sectors. (UNISDR, 2011, p. 59) Yet most responsibility for failure to deliver DRR is due to structural limitations of national governments, especially the heavy centralisation of DRR processes, actors and finances. Decentralisation of financing, it is argued, would not only transfer responsibility to where it was most needed, it would help build a network of local stakeholders who would help harmonise funding to and from 'risk reduction, poverty alleviation, development and CCA.' (UNISDR, 2011, pp. 47-48)

However, the key failing is probably the HFA itself and the relative lack of reference to financing throughout. The HFA does not include finance issues as one of its expected outcomes nor strategic goals or priorities of action¹. It is not included as one of the cross cutting issues of the framework. If on the one side it is intuitive that finance is considered as one of the instruments to achieve the stated goals and priorities of the framework it can be questionable why it hasn't been included as one of the cross cutting issues within each of the priorities as a condition *sine qua non* for dealing with disasters.

However, the failing of the HFA to adequately integrate financing as an obligation for national governments, may go deeper than that. In their reflection on the future of Disaster Risk Management (DRM) Lavell and Maskrey suggest that disaster losses and impacts can rise even if the HFA was implemented, in large part because of the structure of the HFA itself. Priority Area 4, the reduction of underlying risk, they say, 'is the area which has achieved least traction and is probably the least understood as regards its policy, institutional and financial implications. This implies that while the HFA did create a space for anticipatory or prospective disaster risk management, this is the space into which most nations have yet to tread (Lavell & Maskrey, 2013, p. 3).' Later, it is argued that a failure to make this area central to the HFA is what needs to be addressed in the future: 'an HFA2 can be turned inside-out so that Priority Area 4 becomes the overarching goal and objective, then it may become an instrument for a much needed paradigm shift (Lavell & Maskrey, 2013, p. 20).' The question from a financial perspective, is how the previous structure of the HFA limited firstly, commitments to financing, and secondly, the effectiveness of that financing, and, looking to the future, how would financing fit into a future HFA that focused on an umbrella created around Priority Area 4²

The Importance of the Moment: The 2015 Policy Agenda

The particular importance of the financing of DRR now, is related to the bigger consideration of how risk in general will (or rather should) be reflected in the future development agenda. We are likely to see an enhanced role for financing within the successor to the HFA itself, and work is underway to consider how that may function and what (if any) commitments governments may be asked to sign up to meeting (UNISDR, 2011). However, disaster risk was largely absent in the Millennium Development Goals, and there has been considerable effort from a range of actors and decision-makers, and through a range of processes, to ensure that is not the case in the future.

The Rio Conference on Sustainable Development made DRR a priority issue to be addressed and within that financing an essential part :

¹ One exception is that financial risk sharing mechanisms are included as one of the key activities for Priority 4: Reducing the underlying risk factors.

² Note that some of this has been anticipated through the consultations on the future to the HFA itself. See pages 6 and 7 of United Nations Office for Disaster Risk Reduction, 2013.

'We call for disaster risk reduction and building of resilience to disasters to be addressed with a renewed sense of urgency in the context of sustainable development and poverty eradication, and, as appropriate, to be integrated into policies, plans, programmes, and budgets at all levels and considered within relevant future frameworks. We invite governments at all levels as well as relevant subregional, regional and international organizations to commit to adequate, timely and predictable resources for disaster risk reduction in order to enhance resilience of cities and communities to disasters, according to their own circumstances and capacities.'
(United Nations, 2012, p. 33)

Although the wording 'we invite governments... to commit to adequate, timely and predictable resources' is far too weak, the declaration does at least signal that we cannot reduce disaster-risk without adequate investment.

In addition, following this, possible targets for the inclusion of disaster risk into future development goals, have already been articulated, and there would likely be a financial dimension to those targets. (ODI, 2013):

- As part of a standalone DRM goal : indicator of a goal to 'reduce the risk of disasters' - % of budget allocated to disaster risk reduction/preparedness.
- Within a 'resilience' type goal : Indicator of goal 'enhance community resilience' : % of budget allocated to drr/preparedness.

The way in which the financial components are articulated suggests is that making financial commitments to risk reduction is essential to make progress.

Integrated and Stand-Alone Financing of Disaster Risk Reduction

The discussion on the role of financing within both past and future global frameworks for the reduction of disaster risk, leads us to consider exactly how financing of DRR should actually work. Increasingly the importance of embedding or integrating DRR into national development plans and priorities, is seen as the way forward, which, although referenced in the HFA, was marginalized as just one activity under Priority Action One, and worded weakly: 'integrated risk reduction, as appropriate, into development policies and planning at all levels of government. (UNISDR, 2005).'

Such an 'activity' if implemented, obviously carries a financial element. If DRR is integrated or embedded in development planning and policy, through, for example, the close articulation of risk within key sectors such as health, infrastructure, urban development, water resources, then there will be a budgetary component. The challenge for researchers into the effectiveness of financing of DRR is therefore somewhat perverse: the better the work of integrating DRR into development, the less you are able to see it in action, the less you can track, the less you can measure, partly because, with increasing integration, attribution becomes impossible.

This all said, there will remain in high-risk countries, a need for stand-alone DRR funding, for institutions that are responsible for ensuring that risk will always have due attention, and that structures and processes are in place to not only reduce risk, but also transfer risk and prepare for the risk that cannot be managed away. This demands, as the mid-term review rightly advises, that there be 'senior over-arching authority at government level where responsibility, and with it accountability, can rest for setting policies, driving processes, and ensuring budget allocations for all the different aspects of disaster risk reduction. (UNISDR, 2011)'

RESEARCHING NATIONAL FINANCING OF DISASTER RISK REDUCTION

Conceptualising the Terms of Reference

This paper is written as a contribution to the 2015 Global Assessment Report on Risk Reduction prepared by the United Nations Office for Risk Reduction (UNISDR).

It attempts to answer what appears to be on the surface a simple question: what evidence is there for coherent and comprehensive national government financing of disaster risk reduction.

In moving forward on the terms of reference for this work, we have considered the various ways in which financing of DRR is both articulated and seen as important (as indicated in the introductory section) and followed this with firstly, an analysis of the range of material available, secondly a consideration of the range of ways in which DRR is financed, a review of the HFA monitor and its usefulness for tracking DRR investments and processes, and finally a consideration of the financial capacity of different countries.

Financing DRR: The State of Research

	Broad Focus of Research			Specific Area of DRR				
	National	International	Public-Private	Catastrophe Risk	Micro-Insurance	Adaptation	Emergency Preparedness	Social Protection
Global	5	6	1	4	3	1		
Latin America	3			1				
Europe	1			1				
Asia	0			2				
Caribbean	2			3	1			
Mexico	5		1	7	1			
India	2			3	1	1	1	
Philippines	2	2		1		1	1	
Nepal	2	1		0	1	2		
Costa Rica	4		1	2				
Indonesia	4			1				
South Africa	4			1				
Malawi	0		1	1	2			
Ethiopia	0			1	1		1	1
Peru	3			1				
El Salvador	1	1		0				1
Turkey	1		1	1				
Bangladesh	0			0	2		1	
Pakistan	0	1		0	1			
Honduras	1			0				1
Guatemala	2			0				
Nigeria	0		1	0				
European Union	0			1				
Uganda	0			0		1		
Sudan	0			0			1	
Haiti	0			0			1	
Niger	0			0			1	
Myanmar	0			0			1	

Figure 1: Overview of literature review for financing of DRR. (Note, numbers in each cell represent number of times a paper topic covers a country or region - in reality some papers cover multiple areas of research and countries. These numbers reflect that.)

A detailed literature review revealed 79 separate papers in total that appear to focus on financing of disaster risk, that focus on 43 countries and 4 regions (Caribbean, Europe, Latin America, Asia) and Global a total of 113 times.

- However for our core area of investigation, 'national financing' we have countries examined only 31 different times by 23 different papers, and just one of these papers (Gordon, 2013) is responsible for 7 'examinations'. This is rather a limiting range of material.
- In addition to that the range of countries for which we have material is limited. Of the 24 countries that have material only 7 are low-income, and of these 7 only Nepal has material with some component related to national financing³.
- Only 8 of the 24 countries with DRR financing reports are from sub-Saharan Africa, and only one of these, South Africa (an upper-middle country and somewhat unrepresentative because of that) has had any research into national DRR financing.
- Low-income countries are particular unrepresented by research into their financing for DRR. Haiti, Bangladesh, Cambodia, Niger, Uganda, Nepal, Malawi, Afghanistan, Burkino Faso, Ethiopia, Myanmar, Sierra Leone, Eritrea and Zimbabwe all have average government revenues of less than \$100 per person⁴. In the literature review undertaken we sourced only 21 papers covering a range of DRR financing issues for these 14 countries and only 2 papers that focused primarily on the way in which national governments finance their risk reduction, both of which were for Nepal, though in this case largely from an international perspective.

Clearly there are many research gaps, given the range of disaster risks, the range of countries in which they occur, and the general lack of material. It also highlights the challenge in being able to answer the central research question - what evidence is there for coherent and comprehensive national government financing of disaster risk reduction.

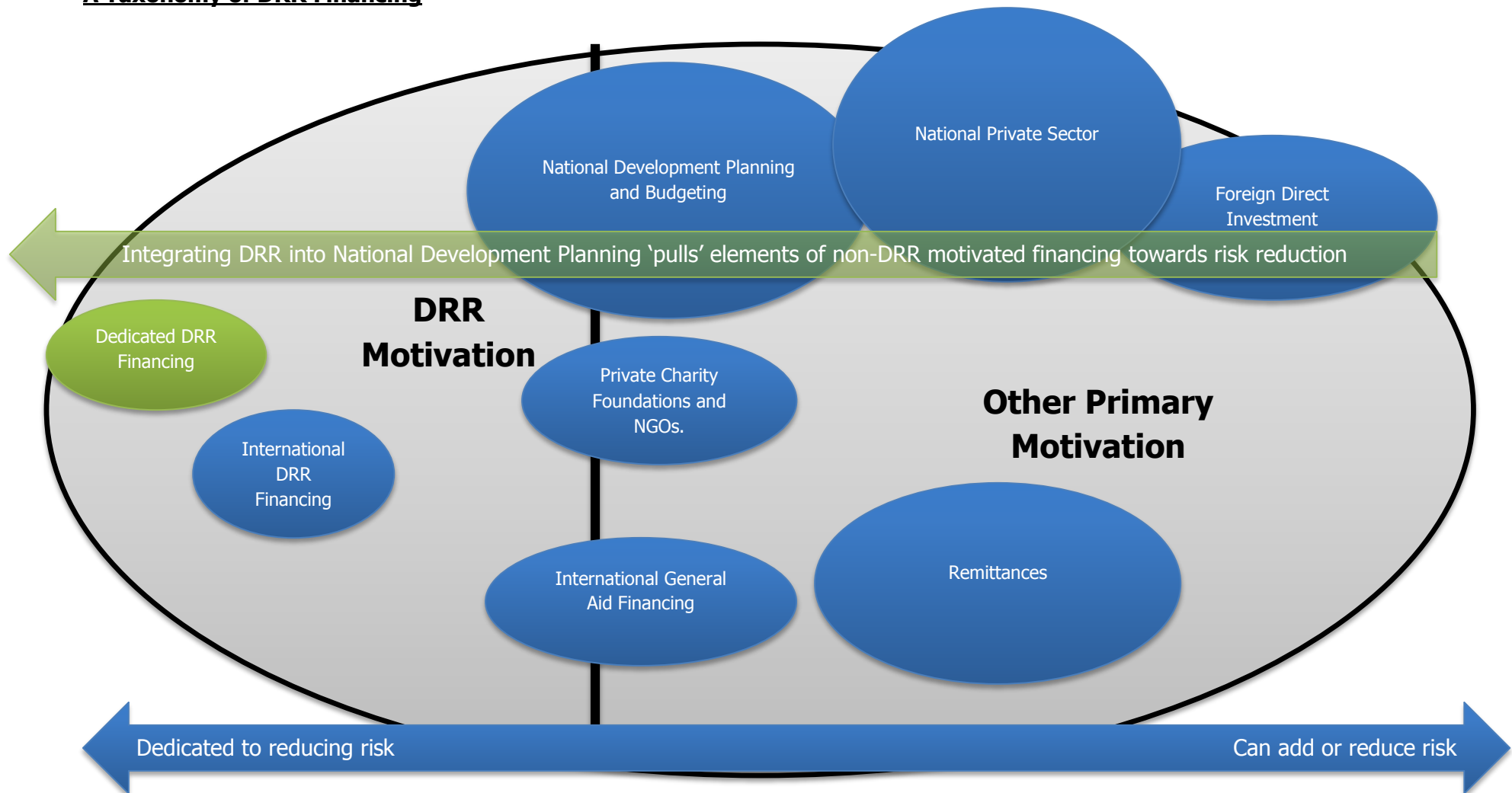
Taxonomy of DRR Financing

A second consideration for this research is the role of non-government financing in support of national plans and priorities. Our conception of the way in which DRR financing can be prioritised through different financing channels is indicated in the following graphic. This also indicates the relationship between financing and risk, as well as the highlighting in simple fashion, the way in which integrating DRR financing 'pulls' other financial flows towards the reduction of risk. Given the weight of financial flows that do not at all prioritise risk reduction as a primary motivation, the work of integration becomes starkly essential, as well as the building of effective multi-stakeholder platforms that can truly impact effectively beyond government.

³ For low income countries, there is a particular dearth of literature on national catastrophe risk financing for low-income countries, almost certainly reflecting the fact that only relatively wealthy developing nations can support such schemes. Micro-insurance does feature in some of the material focusing on low-income countries, with 4 studies detailing micro-insurance for climate related risks in Bangladesh, Ethiopia, Malawi, and Nepal.

⁴ See table xxx on page xxx.

A Taxonomy of DRR Financing



Context is Key: Needs and Capacities

In addition, we have considered the current capacity that exists for financing of DRR across a range of countries. The figure below highlights a range of developing countries, and the various contexts, ranked by Mortality Risk Index (MRI). Key lessons we can take from this include :

- The range of investment needs across countries is very different. Not all countries need the same level of investment because not all countries have the same level of risks. There is for example much less need in Benin or Cameroon compared to Bangladesh, Indonesia or Afghanistan.
- We know already from examining aid from international sources that support from the international community does not systematically support countries with high risks and low capacity (Kellett & Caravani, 2013).
- The problem is that many high risk countries do indeed have low 'financial' capacity to invest in DRR.
 - The high-risk, low-income countries of Bangladesh, Myanmar, Afghanistan, Haiti, Uganda, Cambodia, Uganda, Nepal, Ethiopia, Sierre Leone, Malawi⁵ all have annual government revenues of less that \$100 per person.
 - Given that investing in DRR is a priority amongst many other priorities we can see the challenges for these countries.
 - We also note that the lower-middle income countries of Indonesia, India, Phillipines, Guatemala, El Salvador, have seen considerable national investment in DRR. These countries all have government revenues of more than \$250 per capita.
- There is an argument that we need to focus less on international DRR financing and more on national – but if national governments have so few resources to spend on DRR, then perhaps our expectations have to change.

Recipient country	Average annual govt revenues net of ODA, 2007-2011, per capita (\$)	Mortality Risk Index (MRI)	% population affected by drought	20-year international DRR (\$millions)	DRR per capita (\$)	Income level
Bangladesh	71.34	9	0.00%	916.4	7.12	Low
Indonesia	513.64	9	0.02%	1,439.20	6.75	Lower-middle
India	262.28	9	1.59%	524.9	0.5	Lower-middle
Myanmar	46.08	9	n/a	9.1	0.21	Low
Philippines	416.42	8	0.18%	834.6	10.78	Lower-middle
Guatemala	373.5	8	1.20%	97.9	8.58	Lower-middle
Afghanistan	-134.9	8	1.34%	22.1	0.96	Low
Turkey	3,591.96	7	n/a	457.6	7.2	Upper-middle
El Salvador	571.44	7	0.32%	33.3	5.67	Lower-middle
Costa Rica	1,192.93	7	0.00%	0.7	0.18	Upper-middle
Haiti	-8.23	6	0.57%	99.1	11.52	Low
Cambodia	80.89	6	2.56%	81.6	6.69	Low
Mexico	2,329.40	6	0.12%	586.3	5.9	Upper-middle
Uganda	31.78	6	0.74%	37.1	1.5	Low
Nepal	64.29	6	0.10%	35	1.43	Low
Ethiopia	19.9	6	3.34%	22.9	0.35	Low
Sierra Leone	0.94	6	n/a	0.4	0.09	Low

⁵ Malawi is added as 'high-risk' because of the substantial impact of drought in the country, which is not taken into account by the Mortality Risk Index.

Chile	3,136.44	6	0.00%	0.7	0.05	Upper-middle
Lebanon	1931.17	5	n/a	252.3	68.03	Upper-middle
Sri Lanka	324	5	0.70%	286.2	15.07	Lower-middle
Argentina	3,249.53	5	0.00%	544.5	14.82	Upper-middle
Kenya	177.76	5	6.96%	126.4	4.01	Low
Brazil	3,714.52	5	0.33%	492.3	2.84	Upper-middle
Malawi	57.84	5	8.32%	14.5	1.26	Low
Morocco	870.69	5	0.05%	13.7	0.48	Lower-middle
Zimbabwe	52.28	5	5.85%	0.4	0.04	Low
Cameroon	223.94	5	0.06%	0.3	0.02	Lower-middle
Yemen	417.71	4	n/a	114.3	6.4	Lower-middle
Niger	43.69	4	8.15%	19.9	1.78	Low
Benin	113.42	4	n/a	5.7	0.86	Low
Burkina Faso	53.58	4	2.11%	8.9	0.72	Low
Zambia	205.44	4	1.94%	4.5	0.44	Lower-middle
South Africa	2,038.85	4	1.64%	5.6	0.13	Upper-middle
Eritrea	51.89	4	6.84%	0.3	0.07	Low

Figure 2: Government revenues for developing countries, ranked by mortality risk index. Countries highlighted in yellow are particularly affected by drought, with on average more than 3% of their population affected each year.

Monitoring National Financing Through the HFA

The 'HFA Monitor' is an online tool to assist countries (and other stakeholders) to monitor and review their progress in the implementation of DRR and recovery actions undertaken at the national level, in accordance with the Hyogo Framework's priorities. The tool can be used to examine a range of supporting statistics around financing, even whilst actual financing volumes are limited.

Current National Investments

For this exercise a total of 99 countries were examined⁶ over the years 2011-2013: 27 High Income Countries (HIC), 24 Lower Middle Income Countries (LMIC), 11 Low Income Countries (LIC), 32 Upper Middle Income Countries (UMIC), 5 n/a. Out of these 99:

Responses from HFA National Progress Query Tool 2011-2013: Current National Investment	Answers	Income Group					Grand Total
		n/a	LIC	UMIC	HIC	LMIC	
Is disaster risk taken into account in public investment and planning decisions?	No			3		2	5
	Not indicated			1	2	1	4
	Yes	5	11	28	25	21	90
Is disaster risk taken into account in National development plan?	Not indicated	2	1	6	10	6	25
	Yes	3	10	26	17	18	74
Is disaster risk taken into account in Climate change policy and strategy?	Not indicated	2	4	7	4	2	19
	Yes	3	7	25	23	22	80
Are the costs and benefits of DRR incorporated into the planning of public investment?	No	3	4	11	3	9	30
	Not			2	4	1	7

⁶ Income groups are from the World Bank Classification: http://data.worldbank.org/about/country-classifications/country-and-lending-groups#Low_income

	indicated						
	Yes	2	7	19	20	14	62
National and sectoral public investment systems incorporating DRR	Not indicated	3	3	16	8	12	42
	Yes	2	8	16	19	12	57
Studies on the economic costs and benefits of DRR	not indicated	15	6	16	3	22	62
	yes	12	5	8	2	10	37
Do post-disaster programmes explicitly incorporate and budget for DRR for resilient recovery?	no	5	4	13		11	33
	not indicated	3			2	1	6
	yes	19	7	11	3	20	60
Local level preparedness	not indicated	4	4	6	1	6	21
	yes	23	7	18	4	26	78

- Disaster risk is taken into account in the majority of the countries (75% or more) in public investments and planning decisions, in the national development plan and in the climate change policy.
- In most cases, costs and benefits of DRR are incorporated in the planning of public decisions, but studies on the economic costs and benefits of DRR are more rare, in particular in LIC countries.
- In 60% of the cases, DRR for resilient recovery is incorporated and budgeted in post disaster programs.
- In 78% of the cases local level preparedness appears to be mainstreamed.
- As noted by UNISDR (United Nations Office for Disaster Risk Reduction, 2013, p. 221) only 15% of countries indicate the ratio of the budget allocation to risk reduction versus disaster relief and reconstruction, although specific questions on the breakdown of disasters activities are included in the HFA Monitor tool. Furthermore they don't appear to quantify DRR allocation in various sectors such as the amount allocated to hazard proofing sectoral development investments including transport, agriculture, and infrastructure.
- 37 countries have conducted studies on the economic costs and benefits of DRR. 5 of these are LIC: Bangladesh, Burkina Faso, Ethiopia, Malawi and Mozambique.
- From the points above, from all countries reporting, Bangladesh and Mozambique are the only countries of the 99 emerging as a) reporting the information b) complying with the HFA Monitor indicators.

Exactly what activities are being financed?

The majority of the countries report to have investments in:

Responses from HFA National Progress Query Tool 2011-2013: Types of activities funded	Answers	Income Group					Grand Total
		HIC	LIC	LMIC	n/a	UMIC	
Investments in retrofitting infrastructures including schools and hospitals	Not indicated	9	6	12	5	9	41
	Yes	18	5	12		23	58
Is there investment to reduce the risk of vulnerable urban settlements?	No	2	1	5	4	3	15
	Not indicated	2	1	2		1	6
	Yes	23	9	17	1	28	78
Investment in drainage infrastructure in flood prone areas	Not indicated	2	5	7	1	3	18
	Yes	25	6	17	4	29	81
Slope stabilisation in landslide prone areas	Not indicated	5	8	12	3	12	40
	Yes	22	3	12	2	20	59
Training of masons on safe construction technology	Not indicated	7	5	13	3	15	43
	Yes	20	6	11	2	17	56

Provision of safe land and housing for low income households and communities	Not indicated	12	3	16	3	14	48
	Yes	15	8	8	2	18	51
Regulated provision of land titling	Not indicated	12	6	12	3	13	46
	Yes	15	5	12	2	19	53

- Flood infrastructure investments are the most common with 81% of the countries implementing these type of projects. These are followed by investments to reduce the risk of vulnerable urban settlements (78% of the countries).
- The provision of land titling and housing for low income communities are implemented to a lower degree but still in at least 51% of the countries.
- However these investments don't include the amount of money that is being spent on these areas.

Summary: What does the monitor tell us about the financing of DRR?

- The results from the tables above are overall positive, as in most cases most of the countries available in the HFA Monitor Tool appear to comply with the HFA indicators.
- DRR appears overall well integrated in the main national policies (including development and climate change ones) and also at a project level.
- However, as shown later, these results should be taken with caution given the voluntary nature of this self-assessment, where governments might offer an over optimistic view.

Investigating Coherence : Country Level Investigations into DRR Financing

Comparable global sources of information on the national financing of DRR begin and end with the HFA Monitor, which despite the limitations indicated, gives us a picture of the range of activities being undertaken and the extent to which governments have committed themselves to investing in DRR. While this is a useful tool that helps to better understand the current status of implementation of the HFA Framework within countries, it has three main and inter-related limitations:

- 1) It provides limited quantitative data especially in terms of volume of funding allocated to DRR.
- 2) It doesn't provide a baseline to allow monitoring progress over time for each indicator as the data from previous years is scarce. For example the dates we examined (2011-2013) in the above section refers to the period during which countries could report the information (ie this is the reporting cycle). The data is not divided by each year. progress could only be measured if comparing it with 2009-2011 but here information is scarce and of marginal value.
- 3) It is a voluntary reporting mechanism without comparable external checks across countries, and the information and data impartiality and comprehensiveness could at the very least be challenged.

A far more useful guide to the way in which different countries finance DRR has to be drawn from the countries themselves. The issue is, as we have outlined, made somewhat problematic, because the available examinations into national financing of DRR at the country level (actually, all kinds of financing at all levels) is considerably limited to date. However, enough material is available to provide at least an overview and some detail of national DRR financing. Five countries were examined - Mexico, South Africa, Costa Rica, Indonesia, the Philippines – based on the following :

- Where we have enough research material available.
- Where a range of different funding sources are available, but with particular focus on national financing.
- Where there is a different levels of government capacity to undertake risk reduction.

Within each section, we try, as much as possible given the relatively sparse nature of research to date, to highlight issues of coherence and comprehensiveness. A series of inter-related questions are asked, some of which in themselves would warrant detailed investigation:

- What national policies and structures manage the financing of DRR?
- How is DRR financing integrated as part of development planning in general? Evidence is there for both stand alone financing of drr and funding integrated in national budgets.
- How does financing work in terms of national and decentralised management and budgets. Relationships between different DRR institutions and bodies.
- The amount that is spent on DRR, and by which national body.
- Commitments to spending DRR, which may or may not be actually be spent eg % of budgets
- What contributions come from outside of government sources and are there any specific implications of that financing?

COUNTRY INVESTIGATIONS

Mexico

Mexico, officially the United Mexican States, is one of the world's most active seismic countries, and is highly affected by hurricanes and tropical storms originating in the Caribbean Sea, Atlantic and Pacific Oceans. More than two million people were affected by the 1985 earthquake ([EM CRED](#)). From the same event, nearly 9000 people lost their lives, and direct economic losses from it amounted at \$7 billion, or 2.7% of the GDP in 2006 ([CRED, 2006](#)). About 68% of the population and 71% of the GDP of this Upper Middle Income country is at risk (World Bank 2005).

The 'Sistema Nacional de Protección Civil' (SINAPROC) was established to improve Mexico's civil protection capacities following the Mexico City earthquake of 1985 (OECD, 2013). Established within the Ministry of the Interior, SINAPROC serves as the executive coordination agency for disaster prevention, post-disaster response and reconstruction activities.

Its main objectives are:

- Understanding the causes of risks;
- Controlling and reducing risks;
- Reversing the social causes of risks;
- Strengthening government and society resilience against natural disasters.

The technical arm of the SINAPROC is the 'Sitio Oficial del Centro Nacional de Prevención de Desastres' (CENAPRED). CENAPRED conducts research, training, and the application of technologies to prevent and mitigate disasters.

The role of the SINAPROC in dealing with natural disasters is highlighted in the Development National Plan 2013-2018 (Federal Government of Mexico, 2013). The Plan underlines the importance of considering disasters both endogenous to development and something to be considered before the event itself; the plan presents a strategy to enhance financial instruments that prevent natural disasters by managing risks. It goes on to say that the country can take advantage of its developed financial markets to mitigate the risks 'that would otherwise need to be faced by public spending.' Further to this there is a direct and articulated connection between the country's National Climate Change Strategy and DRR, with the latter placed in the central outcome of a lack of control of climate risks (Mexico, Federal Government of, 2013) – the strategy goes on to 'require' an increased budget allocation to 'disaster prevention.' One 'line of action' states that there is a specific 'To train those responsible for budget assignment within the three orders of government and the Legislative Branch on climate change, due to the importance of allocating funds to adaptation, disaster prevention and mitigation actions' (Mexico, Federal Government of, 2013, p. 25.)

The Mexican government has responded to the risk profile of the country, the increasing risks from climate change, the integration of disaster risk into development considerations and the current institutional set-up, by setting up a number of financing mechanisms for DRR at the national level. Much of the research on Mexico's financing of DRR has been on a set of these inter-related risk financing initiatives. Through these, the Mexican Ministry of Finance and Public Credit (SHCP) has established two main financial strategies⁷:

- 1) By retaining risk, the government has created the Natural Disaster Fund (FONDEN)
- 2) By transferring risk, the government transfers potential future losses to the financial markets, primarily through *reinsurance* schemes and *catastrophe bonds*.

Risk Retention

⁷ See (Poundrik, 2011) and (World Bank, 2012)

The Natural Disasters Fund (FONDEN) was first created as a budget line in the Federal Expenditure Budget of 1996, and then became operational in 1999. It served as a budgetary tool through which federal funds were annually allocated for expenditure on post-disaster response. It is divided into the following components:

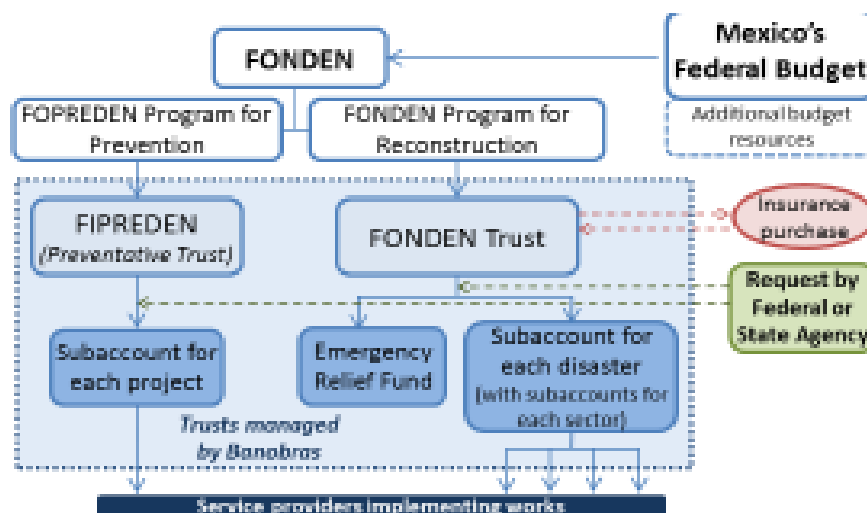
- (i) *infrastructure fund* to repair uninsured public infrastructure;
- (ii) *agriculture fund*, to support low income farmers;
- (iii) *assistance fund*, to provide relief to victims of disasters (Poundrik 2011).

The Federal Budget and Fiscal Responsibility Law requires that at the beginning of each fiscal year not less than 0.4 percent of the annual federal budget (about \$800 million in 2011) should be allocated to FONDEN (World Bank, 2012). This amount is net of the uncommitted funds in the FONDEN Trust at the end of the previous fiscal year. In addition to this FONDEN can be granted an additional \$200 of 'Exceptional Budget Allocation.'

b) Risk transferring

In 2006, Mexico became the first middle income country to transfer part of its public-sector natural catastrophe risk to the international reinsurance and capital markets (Cardenal et al. 2006).

To manage the volatility of demand on its resources and the challenges mentioned above in raising funding, FONDEN started to transfer risks through insurance and other risk transfer mechanisms such as catastrophe bonds. The first transfer to international capital markets was for \$160 million in 2006, for parametric catastrophe against earthquake risks in three at risk zones for a three-year duration, issued by Swiss Re. It then secured US\$290 million of reinsurance coverage for the same three zones for three years, bringing its total protection to US\$450 million. When this bond expired in 2009, FONDEN increased its cover by issuing a three-year, US\$290 million bond for earthquake and hurricane (GFDRR, 2012:v). Most recently, in 2011, it secured indemnity cover for government assets and low-income housing with a US\$400 million excess of-loss reinsurance treaty (GFDRR, 2012 :x).



In addition to these 'risk transfer' mechanisms, Mexico has invested in dedicated risk reduction activities. Apart from financing to SINAPROC itself, which as an agency of the Ministry of Interior has the bulk of its activities financed 'centrally' the FONDEN system is also used to target risk reduction. By recognising the need to promote greater investment in proactive risk management ex ante, in 1999 the Government of Mexico started to allocate resources specifically for disaster prevention activities under what is called FOPREDEN. The 2011 budgetary allocation for this was approximately USD 25 million (3% of FONDEN allocation). The main activities supported by FOPREDEN are:

- Perform preventive actions to identify risk,

- Mitigate or reduce the impact of natural phenomena;
- Promote prevention culture and population self-protection in the presence of a natural disaster;
- Develop a state level risk Atlas;
- Conduct studies on social and economic impacts of natural disasters;
- Designing early warning systems;
- Analyze the feasibility of relocating vulnerable population living in areas of high risk.

Risk Transfer Additional Benefits

One of the significant co-benefits of the use of insurance has been the need for very detailed risk assessments. In Mexico this meant the creation of an 'emergency risk inventory' using 'information systematized in decades of research done by the Universidad Nacional Autónoma de México and other institutions. The inventory was put together by 2009... (and used as) the basis for the R-FONDEN system, a computational model of probabilistic evaluation of disaster risk of main public assets covered by FONDEN. (Orihuela, 2012, p. 19).¹

How financing works locally gets relatively little attention in the available literature. According to the World Bank, the Government has strengthened 'the capacity of national and local institutions to reduce risk ex ante, to plan for potential disasters, and to respond efficiently in the event of an adverse natural event. (World Bank, 2012, p. 4)'. However there is little said about the working relationships of financing at different levels of government.

Several weaknesses in the current DRR financing structure in Mexico are evident Some of this is about the risk retention and transfer structure itself and some are, it is argued, due to an over-reliance on the mechanisms:

- Risk retention sidelines risk reduction: FONDEN separates disaster funds from normal budgetary operations; and it largely separates funding mechanisms for prevention activities from the fund itself. On the one hand, this can be considered an example of best practice, as it ensures that the system deals specifically with DRR. On the other, it limits the possibility of integrating DRR components in other national investments and in different sectors of the economy.
- Post-Crisis Focus: Suarez and Bayer (2011) point out that the catastrophe bonds used by the Mexican government are only linked indirectly to DRR measures, as they provide immediate and reliable post-disaster payments to the government, allowing authorities to reduce losses through timely relief and rescue operations. They suggest that in order to make catastrophe bonds more linked to DRR, these should be designed to fund *the incremental costs* of adding risk reduction measures to reconstruction efforts, which currently, insurance companies refuse to pay.
- Risk remains despite transfer: Another challenge experienced by FONDEN is that it would need to repair old infrastructure damaged by disasters in a better way, ensuring a risk reduction component into construction. Even if the assets to be rebuilt are insured, insurance companies do not finance the improvement, but only the basic repair and rebuild. This suggests that ultimately it is still national government that needs to shoulder risk reduction costs⁸.
- FONDEN's finances are not secure: Additional funding sources come from oil revenues, but with the recent fall of oil prices, this source of funding has almost vanished (Poundrik, 2011, p.5).
- Risk Analysis not Integrated: Mexico has, as yet, not incorporated risk analysis in investment planning, unlike other Central and South American countries. (Orihuela, 2012) (Gordon, 2013:4). Detailed analysis has not been undertaken to see if this has limited investment in DRR across sectors/ministries.

⁸ Both Suarez and Bayer and OECD recommend more emphasis placed on the development of a personal insurance culture, through incentives and regulatory changes, to enlarge personal household insurance coverage.

- **Prevention Funding Inadequate:** Although authorities have gradually acknowledged the need to focus on prevention, by allocating resources to FOPRENDEN, the 3% of financing from FONDEN is considerably inadequate. The OECD recommends using relatively disaster-free years to utilise more FONDEN funds for DRR activities. (OECD, 2013, p. 21)
- **Limited Stakeholders:** A lack of stakeholders in financing risk reduction is seen, with suggestions for a marked increase in 'business continuity planning efforts in the public and private sectors, particularly for SMEs. (OECD, 2013, p. 21)' The architecture of SINAPROC lacks formal engagement with the private sector, as well as voluntary organisations (OECD, 2013, p 8).

According to the civil protection review of OECD, many of these issues have been seen as a 'recognised need among SINAPROC stakeholders to shift focus towards strengthening capacities for disaster prevention and vulnerability reduction in order to contribute to sustained growth. (OECD, 2013, p. 4)'

Non-Government Contributions

There has not been to date any comprehensive overview of contributions to DRR beyond national government, especially from a financial perspective.

Clark & Grenham (2013) examined the "Fondos" system. Fondos are organizations of farmers who join together on a non-profit basis to mutually insure each other against specific named risks through risk pooling and reinsurance. Limited in membership, Fondos ensure farmers both know each other and their risk profile, whilst also helping promote shared ownership of risk. A joint reporting mechanism exists, with Fondos reporting all claims to the reinsurer rather than each farmer reporting individually, which, apparently both lowers costs for reinsurer and ensures less fraud at the individual.

Mexico is among the top ten recipients of international DRR funding (Kellett and Caravani 2013) with \$586.2 million over 20 years. Its national capacity to deal with natural disasters, by looking at its government revenues which are at about \$2,329.4 per capita on average between 2007 and 2011, is relatively high, therefore the country appears well placed, both from external and domestic sources to finance DRR activities. However this is somewhat misleading, given that a single World Bank project in 2000, for disaster management across a range of sectors accounts for \$584 million of that total.

South Africa

For South Africa the incorporation of DRR within public policy is rather mixed, both in terms of depth and effectiveness. The National Development Plan 2030, for example, which outlines the government's long-term strategic priorities, speaks of "improved disaster preparedness for extreme climate events" as one of its environmental sustainability objectives (National Development Plan 2030). The priority given to DRR (or even disaster management in general) does not appear high however – and this 'improved disaster preparedness' is itself just one of nine separate sustainability 'objectives' within the National Development Plan. (In addition South Africa's 'National Climate Change Response' makes clear that extreme weather will lead to a need for 'more effective disaster management').

The legal and institutional structures through which this commitment to improved preparedness is undertaken, are relatively well established, and DRR is represented in these structures and policies. The 2002 Disaster Management Act established the National Disaster Management Centre (NDMC) is the principal functional unit for disaster risk management at the national level. The National Disaster Management Framework (NDMF) of 2005 guides the implementation of the 2002 Disaster Management Act. The act and framework furthermore emphasise the role of local governments in

implementing DRR⁹ (Niekerk & Madubula, 2011, p. 2011) as well as requiring all 'spheres of government to develop disaster management frameworks that guide DRM activities, including planning and implementing DRR projects and programs (Madubula and van Niekerk, 2012:115)'

The issue for undertaking (or lack of undertaking DRR) is seen to often be an issue of financing processes, although often related to issues of general capacity and adherence to the law¹⁰. Many inter-related issues make funding for DRR incoherent:

- 1) Ex-post emphasis: The overall emphasis of the act is on the management of disasters after they occur, rather than their prevention or reduction of impact through DRR. Although much of the governments work (and actually the research used in this case study) does mention DRR, it is actually DRM, or often even more narrowly, and Disaster Management that has the main focus
- 2) Guidelines Weak: Although the act focuses on a range of DRM related issues, including DRR, there are no guidelines to cover the actual funding nor to clearly divide responsibilities. (Madubula and van Niekerk, 2012:181)
- 3) Disaster risk fails to be a political issue: Many politicians perceive DRM as part of a Disaster Risk Management Committee's activities, with very little link to the multi-sectoral approach. Madubala and van Niekerk, pg. 189 : Politicians do not demand for DRR to be a priority, senior civil servants do not prioritise DRR, and officials do not budget DRR. (Madubala and van Niekerk, pg. 189).
- 4) Lack of Sectoral Understanding and Capacity: Although the 2002 Disaster Management Act and NDMF make it reasonably clear that ministries and agencies have the responsibility to reduce disaster risk, very few departments fully understand what this means in practice. Visser and van Niekerk (2009) remarks: 'This [DRM across the board] is an area that should actually be budgeted for by the various line-departments, it was clear that they do not understand how they can indirectly budget for DRR and why it is important to do so.' (Visser & van Niekerk, 2009, p. 67) These government authorities do not, therefore, integrate DRR into their normal day-to-day functioning. This lack of capacity and related lack of attention, leads unsurprisingly to a lack of budgeting to DRR across these sectors (Niekerk & Madubula, 2011, p. 189). In essence, although technically DRR is supposed to be integrated within sector financing, it rarely happens.
- 5) Lack of Transparency: There is almost nothing said about the volumes of money spent on DRR on the country. Even the NDMA website has nothing on the subject.

It is the lack of financing at a municipal/local level, which, it is suggested in three of the four studies surveyed on South Africa's DRR financing, is of particular concern. 'The National Framework does make provision for the funding arrangements for DRM and suggests that municipalities have a responsibility for the funding of most of the DRM activities' (Visser & van Niekerk, 2009, p. 25) However, whilst legal and institutional structures exist, the budgeting and funding at the subnational level is considerably inadequate (Bortha et al, 2012 :97).

In part this is because municipalities own work in DRR suffer from the range of issues outlined above, but beyond that is suggested that municipalities have considerable difficulty in meeting their legal provisions for implementing DRR because of the particular financing challenges (Madubala and van Niekerk (pg 188).

Legally under the NDMF national government can either pay for any or all DRM activity itself (including DRR) or place 'the onus on provincial and local government to finance expenditures in DRM activities from their own existing equitable share transfers or own revenue.' (Madubala and van Niekerk (pg 108). Securing funding for DRM is left to the "responsible Cabinet Member, MEC, or other

⁹ Note that the legislation around local government responsibility for DRR appears rather vague. Article 43 of the Disaster Management Act stipulates that a district municipality is expected to establish and operate its DRM function and activities in partnership and cooperation, but specific guidelines are not provided.

¹⁰ Although funding mechanisms for DRM were revised in 2005, it has been noted that current legislative, policy, institutional and funding mechanisms are not being fully applied or adhered to by the different spheres of government.' Madubula and van Niekerk, 2012:28)

organ of the state” to ensure appropriate disaster risk management at the municipal level, though Section 57 of the Disaster Management Act allows leeway for a municipality or provincial government to request financial assistance from the national government (NDMC, Section 7.1: 89). Funds are considerably lacking at a local level, an issue highlighted repeatedly in Bortha et al’s 2012 study. In part based on interviews with government respondents it reported that:

- 32.7% of local government respondents claimed to have no budget at all for DRM purposes (pg 46).
- only 65.4% of respondents acknowledged that they had a budget for carrying out DRM activities and of those with a budget 80.4% feel that it is not adequate for their needs (Bortha et al, 2012:46).
- 73% of districts, 50% of metros, and 73% of local municipalities do not assign a part of their budget to DRM activities as required by the 2002 Disaster Management Act (Bortha et al., 2012:50). (It should be noted that only local municipalities, of these three levels of local government, are obliged to budget for DRM, according to the 2002 Disaster Management Act
- Conditional grants are available to municipalities in the event of a disaster, but this ex post financing for reconstruction does not cover ex ante risk reduction activities.

In addition, Visser and van Niekerk (2008) examined 4 municipalities and found that none of them had received any conditional grants or subsidies from the national or provincial government for the establishment of a disaster risk management centre, the basic risk management structure at a local level. Not only did authorities have to provide funding from their own budgets for set up costs, but also for salaries, maintenance, equipment, and all the work of the centre, training, planning etc. The study stated the consequence of this simply and starkly: It was clear from the data and information obtained at the municipalities, that they do not budget for DRR’ (Visser & van Niekerk, 2009, p. 67).

Activity	Funding sources	Funding mechanism
Start-up activities	National government	Conditional grant for local government – district and metropolitan municipalities, where necessary
On-going operations DRM	New assignment to local government	Increase in the institutional component of the equitable share of local government
Disaster risk reduction	Districts municipalities	Own budget – can be augmented by application for funding to the National Disaster Management Committee for special national priority risk reduction projects
	Low capacity, resource-poor municipalities	Additional funding provided by National Disaster Management Committee
Response, recovery, rehabilitation, reconstruction	Local government	Access to central contingency fund once threshold is exceeded
		Conditional grant ; i.e. Municipal Infrastructure Grant (MIG)
Education, training, and capacity-building programmes	Local government	Own budgets and reimbursement through Sector Education and Training Authorities
		Public awareness programmes and research activities can be funded by private sector, research foundations, NGOs, donor funding

Figure 3: The Funding Arrangements for DRM for Municipalities.

The table above highlights the lack of resources for DRR at a local level, with 'own budget' being largely the only source of financing, except for the poorest of municipalities. The lack of funding is recognised in the research to have some significant effects, unsurprising effects, which Madubala and van Niekerk reflect on:

- A lack of compliance with the Disaster Management Act and its focus on DRR: a lack of implementation of DRR.
- In the long run, a negative impact on national financing, when considering the significant financial impact of disasters.
- The lack of adequate measures in one district affecting a neighbouring one (even one that had invested in DRR).

The importance of DRR and its financing are deemed to be very high, however: 'Since it is a constitutional imperative to ensure that lives are safeguarded, the non-funding of DRM may be regarded as the relinquishing of that constitutional responsibility.' Madubala and van Niekerk (109.)

It should be noted that these issues have been recognized to an extent by government (though perhaps not acted on effectively, when the FFC recommended in 2001 that 'the major portion of funding for emergency responses, post-disaster recovery, prevention/mitigation, and emergency preparedness, should, in the case of municipalities, be funded centrally' and in addition 'the start up costs of primarily low-capacity municipalities should be funded by means of a conditional grant from the national government.' (FFC, 2001: 14-15)

Non-Governmental Sources of Financing

To date in South Africa, DRR is primarily a government concern, according to the literature. This may reflect what is a relatively low understanding of disaster risk, or relatively low 'risk consciousness'.

Bortha et al (2012) surveyed a range of national NGOs. The majority (55.5%) surveyed by indicated that they were not involved with disaster risk management structures at the local/provincial government level. Of NGOs that reported being involved (44.44%), they did so through technical support – including but not limited to aiding municipalities to design plans and guidelines regarding water disaster management, waste management, environmental issues, and risk plans for residential facilities (Bortha et al, 2012:89). Two-thirds of NGOs surveyed (66.67%) were completely unaware of the legal structure governing DRM in South Africa.

The government, by way of the FFC, has indicated that not all funding for DRM broadly should come from 'nationally collected revenue.' Madubala and van Niekerk 124. However the current reality is not that greatly involved, neither in general, or financially. Some community funding exists through "stokvels" and private loans, but these are ex-ante coping mechanisms and are only available in areas where communities can afford the exorbitant interest rates tied to such loans (Madubala and van Niekerk, pg. 189). As of yet, the government hasn't explored market-based financing mechanisms, including sovereign insurance, risk pooling, reinsurance, index-based insurance, weather derivatives, micro-insurance, and cat bonds (Madubala and van Niekerk, pg 192).

International aid to the country is not focused at all on DRR. It has received only \$5.6 million over a two-decade period of 1991 to 2010, ranking it 81st in the world in terms of volume. Perhaps unsurprisingly neither the UNDAF nor the World Bank Country Partnership refer to disaster risk as a key 'pillar' of engagement with the country.

Costa Rica

The Republic of Costa Rica is situated in Central America in one of the most earthquake prone regions in the world, lying next to a fault between the Cocos and Caribbean plates. In

terms of land area, the country ranks second in the world among countries most vulnerable to natural hazards, with 36.8% of its landmass exposed to three or more natural hazards (World Bank, 2005). Earthquakes, volcanic eruptions, floods, storms, landslides and droughts all seriously impact the country's population and economy ([EMDAT](#)). Three major volcanic eruptions in the 1960s, notably the eruptions of the Irazu Volcano between 1963 and 1965 and the eruption of the Arenal volcano in 1968, spurred the Government of Costa Rica to institutionalize its disaster risk reduction system (Gallardo).

Costa Rica established the National Risk Prevention and Emergency Management Commission (CNE) and the National Emergency Fund (FNE) as far back as 1969. That it is a long-standing part of government contributes to 'recognition and ownership by the population', along with the credibility of its reports and use of public resources (Ghesquiere & Cortez, 2008, p. 2). The DRR work of the CNE is complimented by the general development goals of the national government, which seeks to integrate risk management into public investment decisions. The 2011-2014 "María Teresa Obregón Zamora" National Development Plan (NDP) emphasizes the need to integrate risk reduction for natural hazards into the public investment decisions in order to protect investments and ensure their quality, safety, and longevity, all whilst promoting climate change adaptation. The NDP specifies that the CNE is responsible for overseeing some aspects of this, including evaluating the regulations and implementation of urban development plans and helping develop a modern telecommunications platform that is environmentally sustainable (National Development Plan, 78).

The National Emergency Law of 1999 extended the work of the CNE to cover prevention activities. The most recent reform to disaster risk management legislation and institutions came in 2005 with the National Emergency and Risk Prevention law, which according to Poundrik (2011:6) addresses disasters from a more comprehensive development point of view than previously. Further legislation in 2006 created the National System for DRM, the National Platform for the country, with the CNE as the HFA focal point. Current legislation makes it clear that:

- CNE is the institution responsible for planning, coordinating, managing disaster response.
- FNE finances the activities of the CNE, prevention and mitigation, emergency response, and reconstruction.

Funding for risk reduction largely occurs within the FNE (Ghesquiere & Cortez, 2008:7 and Costa Rica, National Law No. 8488 on Emergencies and Risk Reduction (2006)):

- Current budget: This is allocated annually and represents the operations budget of the CNE as well as its investment in DRR. In 2007 the current budget was \$18 million. Specific risk reduction investments through the CNE was just over \$3.2 million.
- Supplementary budget: all public entities are legally required to contribute 3% of surplus to FNE at the end of the fiscal year. Ghesquiere & Cortez remark that this supplementary budget is largely used for 'prevention activities' Page 7. In 2007 the value of these contributions was \$17.1 million. In addition, when an emergency has been declared, public entities may provide the FNE with emergency management funds. In 2008 this was \$10.6 million, in 2007 \$43.1 million.
- In addition to these, government also uses 'planning and investment instruments' to structure the financing of post-emergency activities; it does not appear these legislate for the financing of risk reduction activities. There is a General Emergency Plan that 'defines, organises, prioritizes the actions required for managing a specific crisis' – this looks almost completely reactive to crisis (Ghesquiere & Cortez, 2008, p. 8).

The range of DRR activities undertaken by the CNE through FNE funding is considerably diverse. Whilst they include the creation and maintaining of response and preparedness structures and institutions, they also include a range of 'prevention activities', including, according to the National

Platform, 'mitigation activities, especially through construction work... community-based prevention projects... research activities, early warning projects. (Gallardo, p. 5)'

Not all funding (nor responsibility for DRR) passes through the FNE/CNE DRR institutional structure. The 2006 law makes it clear that DRR is a responsibility across government 'the mandatory obligation of public entities and local governments to make allocations for risk management in their budgets.' (Ghesquiere & Cortez, 2008, p. 7). The stipulation encourages all state enterprises and institutions to account for disaster prevention and preparedness in their own fields (Costa Rica, National Law No. 8488 on Emergencies and Risk Reduction (2006)). However there is no demand for a certain percentage of funding for 'disaster prevention' within the act itself. In addition the National Development Plan chapter 'Social Development and the fight against poverty' contains four goals for risk management: 'every state institution has to mainstream risk management issues within its planning process, meaning dedicated resources for implementing DRR activities. They must also participate in the coordinating bodies of the National System. Sector and institutional plans have to reflect the guiding principles related to DRM. (Gallardo, p. 3)'.

The available research investigating Costa Rica's institutional and financing structure for disaster management, is largely positive, pointing out a range of inter-connected successes of the current financing system, including¹¹:

- Clearly established roles and responsibilities, in terms of legislation and policy that leads to effective coordination of a range of DRR activities.
- A strong political commitment to financing DRR, backed by strong credibility in general.
- A well-established financial commitment to DRR, which is successful (it is argued) because there is both separate and integrated financing.

A few negatives do exist, largely about the somewhat fluctuating nature of funding for the CNE, especially given that in part it relies on funds that arrive after crisis. In addition improvements could be made in the participation and management of prevention activities by municipalities, as well as bringing non-government resources to bear on DRR. (See below.) Municipalities' are required under National Law No. 8488 to maintain permanent Emergency Management Committees to coordinate local disaster management (National Law 8488:7). These committees receive funds from the CNE in the event of a disaster, but many still lack the sufficient technical capacity and human resources to effectively manage local risks (GFDRR, 2012:6).

Non-Governmental Sources of Financing

DRR financing for Costa Rica from the international community has been marginal at best, just \$714,000 over an entire 20 year period; 120 countries in the world have received more international support for DRR. Despite low volumes of finance, international assistance to the country's DRM appears to have become a priority within the international community. One of the five priority areas articulated in the 2013 – 2017 United Nations Development Assistance Framework is "environmental sustainability and risk management", particularly in reference to land-use planning (UNDAF, 2013). Similarly, the World Bank's 2012 – 2015 Country Partnership strategy specifies "Supporting the Environment and Disaster Risk Management" as one of its three 'cluster' priority areas (World Bank, 2011:19). Both documents identify the potential for Costa Rica to become a leader in DRM, and seek to build the capacity of the country's DRM institutions¹².

That said, the government has agreed to a contingency loan agreement with the World Bank,

¹¹ These are collected from (Ghesquiere & Cortez, 2008), (Gallardo) and Poundrik, 2011).

¹² One positive regarding international financing of DRR in Costa Rica was recounted by Oihuela (2012) who remarks how technocrats emphasized their satisfaction with WB, IADB, and GIZ projects, expressing that the international DRR projects supported one another rather than duplicating efforts.

establishing CAT DDO (Catastrophe Risk Deferred Drawdown Option) in September 2008, the first country to do so. Part of the \$65 million facility (\$15 million) was drawn from the loan after the 2009 earthquake. (Clarke and Mahul, 2011:3).

Several of the research papers in Costa Rica's DRR imply that sources for financing the FNE/CNE could be sought from outside of government, but that little has, according to each, been done. The Sarmiento and Hoberman study into the private sector and DRR analysed the case of Costa Rica and highlighted that current legislation 'does not provide incentives or promotion for the reduction of risk within the business actions, and the same situation is observed in terms of fiscal incentives or business continuity (Sarmiento & Hoberman, 2012).'

Much of the weakness of stakeholder involvement with DRR (as well as its financing) is reported by the government itself, in its report on DRR financing. (Gallardo)

Indonesia

Indonesia, officially the Republic of Indonesia, is one of the countries with the highest Mortality Risk Index, with a score of 9, as it faces multiple hazards, in particular earthquakes, tsunamis and volcanoes eruptions. The 26 December earthquake and tsunami alone affected almost 533,000 and killed 165,708 people. It caused damages and losses of about 1.9% of the GDP. About 67.4% of the population and 62.3% of the GDP of this Lower Middle Income country is at risk (World Bank 2005).

Indonesia clearly places significance to disaster risk in terms of development. The country's 2011-14 medium term national development plan (RPJMN, *Rencana Pembangunan Jangka Menengah Nasional*)¹³ outlines 'the environment and the management of natural disasters' as a national priority. This is supported by a range of national planning tools and documents, with the National DRR (2010-2012) as a key elaboration of DRR policies at a national level.

Mid-term National Development Plan 2010-2014
<ul style="list-style-type: none"> • DRR mainstreaming is a national priority • Direction to strengthen capacity in national and local level • DRR is to be considered in spatial management • Encouragement of community participation in DM and DRR
Government Working Plan 2007 to 2012
DRR is one of nine national development priorities since 2007
National Action Plan on DRR 2010-2012
DRR activities for 2010, 2011 and 2012 covering 24 central government institutions.
National Disaster Management Plan (BNPB)
General Overview of Disasters, Challenges and Opportunities; Disaster Management Policy, Program, Budget and Financing, Monitoring, Evaluation and Reporting

Figure 4: Disaster Risk Reduction in Indonesian Planning Documents, (Source: Darwanto 2012)

In total, 22 central government institutions are involved in DRR initiatives. The coordinating role among these numerous institutions is played by the National Agency for Disaster Management

¹³ 4/25/2004 states that Indonesia's National Long-term Development Planning (RPJPN 2005-2025) has been drawn up as a continuation and renewal of earlier stages of development planning in Indonesia. The plan aims to achieve the development goals as mandated in the Preamble to the Constitution of 1945 and it is divided into four phases: 2005-2009, 2010-2014, 2015-2019, 2020-2025.

(BNPB). It was established in 2008 following the adoption of the Disaster Management Law (No 24/2007). The agency is involved in the following plans:

- a) Its own departmental budget plan;
- b) The wider National Action Plan for Disaster Risk Reduction which has elements of a coordinating plan and elements of a regulatory plan under the Disaster Management Law;
- c) A multi stakeholder National Platform for DRR that includes a wider coordinating plan (Darwanto 2012).

Beyond its coordinating role, the activities implemented under the BNPB range from research, education and training of disaster management, early warnings, and other risk reduction strategies (IBNP website).

Indonesia has invested heavily in disaster risk reduction, and over a significant length of time. In recent years the volume budgeted for DRR has gone beyond \$1 billion in stand-alone DRR. Figures below also show that between 2006 and 2012 budgets for DRR (which excludes rehabilitation and reconstruction) has increased by 55%. *These figures refer only to stand-alone investments with a specific budget classification. They don't include the uncounted amount embedded in other sectors for which the country has not yet developed a DRR code.*

	2006	2007	2008	2009	2010	2011	2012
Total budget allocation for disaster management (USD billions)	0.77	0.89	0.89	0.65	0.79	1.24	1.19
Per Capita DRR Budget Allocation (USD)	3.1	3.8	3.7	2.7	3.3	5.0	4.8

Figure 5: Total and per capita budget allocations for Disaster Management 2006-2012, USD 2009 prices. (Source: Darwanto, 2012, and UNISDR, 2012).

The 2004 earthquake and tsunami are marked as a key point for financing of DRR. Not only did it lead to government strengthening the national system for disaster management, DRR became, for the first time, one of the National Mid-Term Development Priorities, and the government increased the Disaster Management budget by 1000% (Maarif, 2013)

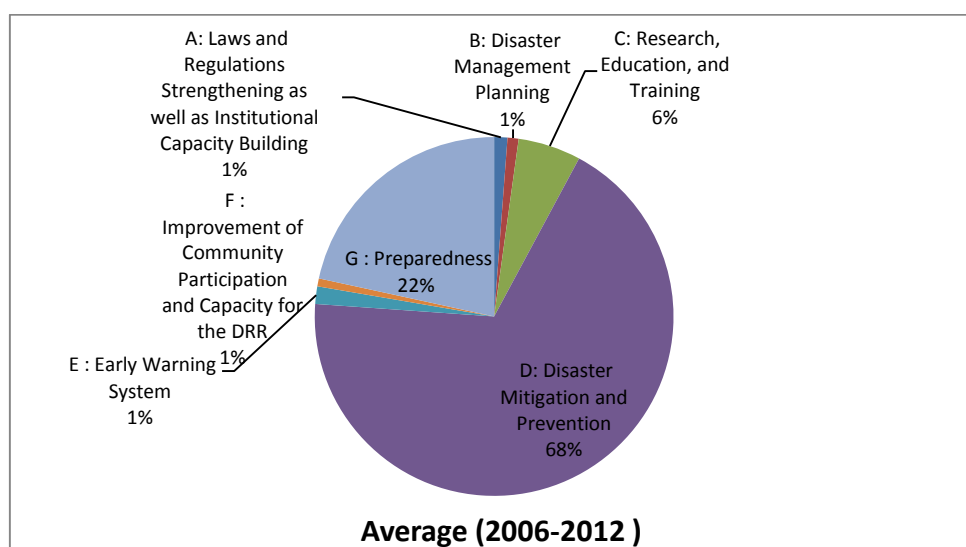


Figure 6: Indonesian budget breakdown for disaster management, 2006-2012. (Source: elaborated from Darwanto, 2012 and UNISDR, 2012)

The majority of stand-alone DRR investments (about 75% during 2006-2011) is allocated for Disaster Mitigation and Prevention activities, to control floods, lava flowing, coastal abrasion, etc. The second biggest investment program (22%) is for Disaster Preparedness activities such as formulation of mechanism for preparedness and disaster risk reduction, formulation and testing of emergency disaster management plans, organization, installation, and testing of early warning system, etc. The third biggest area of investment is for Research, Education, and Training (about 5.9%) (Darwanto 2012).

The Ministry of public works spends the largest amount for DRR activities, i.e. more than a half of all institutions' DRR budget in 2012. Most of the budget is used for physical disaster mitigation. The second largest player is the Ministry of Forestry (26%), mainly for forest and land rehabilitation to prevent flooding. The third largest is the SAR Agency (7%), followed by the National Disaster Management Agency (6%). Some Ministries/Agencies have a special unit dealing with DRR activities.

In addition to these 'national' financing processes, Indonesia legislation has enacted substantial decentralisation that devolves implementation of DRR activities such as water supply, drainage, construction, land use zoning to district authorities (Jackson, 2011). Here a coordinating role is played by provincial agencies for DRR. The provincial governor has executive powers delegated from the President. Add: 'As of 2012 all provinces have established their Local Agency for Disaster Management (BPBD), and they have also been established in more than 60% of the regencies/municipalities (Darwanto 2012 p.6)' and ultimately it is the BNPB's responsibility to facilitate local government in conducting DRR activities (Darwanto 2012).

Despite these considerably positives in terms of financing DRR, some issues remain as yet unaddressed; here we pick out those that have a particular financial 'dimension'¹⁴:

- Undercounting: The actual investment levels in DRR are almost certainly undercounted, as the ones articulated above do not count those 'embedded' in sectors and ministries, investments for which a tracking code for DRR has not been created.
- Limited Funding: A general limitation to amount of available resources for DRR, especially when compared to the vast needs. In addition to general limited funding, little flows to sub-national levels, limiting the role of these sub-national institutions.
- 'Not My Responsibility': DRR is not always included within ministry strategic plans (and therefore financing commitments) because they see most financing going through the BNPB, and do not expect to receive additional funds for DRR purposes.
- 'Ownership' is not Unanimous : 'Buy-in' to the National Disaster Management Plan 2010-2014 and National Action Plan for DRR 2010-2012, remains weak in some parts of government, an issues that extends beyond government to civil socieity and the private sector.
- Understanding and Capacity Gaps : A lack of understanding of how to both programme and finance the mainstreaming of DRR into development plans and priorities.
- Complexity of Governance at Different Levels : A lack of integration and synchronization of disaster risk reduction policies at different government levels and between the central and local governments.
- Inadaquate investment in risk transfer¹⁵.

¹⁴ These are largely taken from Darwanto, 2012.

¹⁵ Mahul and Gunawan (2011) explore a range of options of funding arrangements for Indonesia based on a time period::

- a) In the short term, to develop financial disaster risk assessment tools, a national disaster risk financing strategy relying on risk retention and risk transfer, establish a National Disaster Reserve fund as fast-disbursement mechanism.
- b) In the medium term, establish a disaster risk insurance program for public assets, promote property catastrophe risk insurance of private dwellings.
- c) In the long term, establish a joint disaster reserve fund for Indonesia's local governments.

Non-Government Contributions

Indonesia relies heavily on the support from NGOs for DRR initiatives. Nine NGOs have been substantially participating in disaster risk reduction initiatives in Indonesia since the early 2000s. They implement a number of activities with a strong focus on education and community awareness. The sources of funding for these initiatives come from private companies' CSR programs and donations from private international institutions. However, the volumes of funding appear very low ranging from USD 0.15 to USD 1.5 million per year.

Most NGOs surveyed by Darwanto (2012) were involved in the preparation of the DRR National Action Plan 2006-2009 and 2010-2012. A certain level of coordination, crucial to avoid duplication in a scenario of scarce resources, was observed among these.

Maarif (2013) discusses the crucial role of the government in promoting DRR investments in Indonesia, as it can trigger trust to the private sector and to the civil society encouraging them to increase investments for these purposes. However, this is still seen as a somewhat nascent activity, a weakness to be addressed.

The country is the second biggest recipient of international DRR funding (Kellett and Caravani 2013) with \$1.4 billion spent over 20 years, not far off 10% of the global total. Its national capacity to deal with natural disasters, by looking at its government revenues which are at about \$513 per capita on average between 2007 and 2011, is relatively high, therefore the country appears well placed, both from external and domestic sources to finance DRR activities.

Philippines

The Philippines is one of the most disaster-prone countries in the world. Floods, droughts, typhoons, landslides, mudslides, earthquakes, even volcanoes and tsunamis, repeatedly strike the country. According to the 2012 World Risk Report¹⁶ the country is ranked 3rd out of 173 countries for disaster risk. Disasters are both high-impact and long-lasting. Of particular significance is the high risk of many different kinds of disasters and the proportion of population exposed to those disasters. Cyclone Haiyan is just one of many devastating natural disasters to have hit the country, many of which in recent years (especially cyclones) have been atypical in terms of strength and area affected (Kellett J. , 2014 forthcoming).

The evolution of risk management in the Philippines has led to a well-developed articulation of risk in key processes and plans. The Philippines Development Plan 2011-2016 (PDP) features risk management throughout. This prominence is significant in two particular ways. First, it is seen as key to the sustainability of development, and second, it is central to 'ensuring national security.' Often conceived as joint DRR and Climate Change Adaptation (CCA) requirements, disaster risk management is incorporated into the PDP as a cross-cutting issue¹⁷, and is linked to macroeconomics, the impact of disasters on growth, the economic sector, livelihoods and productive sectors, infrastructure, the environment, and social development, including the MDGs. It is in the chapter on 'Conservation, Protection and Rehabilitation of the Environment and Natural Resources' that DRR/CCA are particularly relevant, where clear goals and objectives for risk management are presented (Kellett J. , 2014 forthcoming).

Modern DRR started with the 1976 establishment of the National Programme of Community Disaster Preparedness. The impact of national disasters through nearly four decades has forced evolution of a once disaster-management focused system towards what could be termed a considerably

¹⁶ The World Risk Report: United Nations University/The Nature Conservancy 2012.

¹⁷ See Annex D of the NDRRMP for a detailed matrix of areas within the PDP that are connected to the country's DRM strategy.

comprehensive set of policies and legislation¹⁸. The 2010 act is the latest in Filipino attempts to manage disaster risk, building on decades of development, and representing, to the Philippines authorities, 'a paradigm shift connected to the country's commitment to the HFA.'¹⁹ At the core of the act was the transformation of the NDCC into the National Disaster Risk Reduction and Management Council (NDRRMC) with a role to not just coordinate response but for the development of a DRRM framework for the country, and through that a long-term plan for reducing risk²⁰. The framework 'shall provide for a comprehensive, all-hazards, multi-sectoral, inter-agency and community-based approach to DRR and management... [and]... serve as the principle guide to DRR and management efforts in the country and shall be reviewed at a five-year interval.' (Philippine Disaster Risk Reduction and Management Act of 2010, pg 12).

The National DRR and Management Framework (NDRRMF) adopted in 2011, classifies DRR strategies into four categories each with a separate government body responsible: a) *preparedness (Interior and Local Government)*, b) *prevention and mitigation (Science and Technology)* c) *response, (Social Welfare and Development)* and d) *rehabilitation and recovery (National Economic and Development Authority)* The framework emphasizes investment in prevention and preparedness, and promotes multi-stakeholder and multi-sectoral participation. The NDRRMF guides the work of the National DRR Management Council (and its counterparts at the regional and local levels), an institutional body which includes representation from the private sector, CSOs, government financial institutions, and other concerned agencies. The council and the framework both operate under the branch of the Office of Civil Defense (OCD), which is tasked with carrying out the provisions of the 2010 National Disaster Risk Reduction and Management Act. This Act allocates the OCD a revolving budget of 1 billion pesos (or \$22.63 billion USD) to implement the provisions of the NDRRMF.

The National Economic and Development Authority (NEDA) has developed a framework for mainstreaming DRR in the development planning process. An administrative Order No. 1, issued by the President in September 2010, directs all provinces to use the Guidelines on Mainstreaming DRR in Sub-national Development and Land Use / Physical Framework Plans (which embodies the mainstreaming framework). These guidelines were updated to incorporate Climate Change Adaptation (CCA) in 2012

The Philippines has two separate stand-by funds dealing with disaster mitigation and response that are funded through the national budget. The larger of the two funds, the Local Disaster Risk Reduction and Management Fund (which was known as the Local Calamity Fund until the new act was passed in 2010), is dedicated to pre-disaster preparedness programmes, payment of premiums of calamity insurance, and local DRR plans. The Quick Response Fund provides resources for relief and recovery programmes and receives 30% of the budget allocated for the Local Disaster Risk Reduction and Management Fund. Though two funds provide a significant pool to draw upon in the event of a disaster, DRR allocations can be found throughout the Filipino government's projects, accounting for over 2% of the total national budget in 2011, and span a number of sectors and activities (Jose 2012:28). Minimizing exposure through physical infrastructure projects (such drainage, flood control, land-use management), and technical risk mitigation services comprise the bulk of the total DRR budget allocations (see Chart X).

The volume of budget set aside through these and other sources is considerable, certainly when compared to other developing countries, with DRR investments being \$707.8 million, \$665.7 million

¹⁸ See Kellett, 2014 (forthcoming) for a full chronological list of policy/structure developments.

¹⁹ Philippines Development Plan, Page 331.

²⁰ This is the National Disaster Risk Reduction and Development Plan (NDRRMP)

and \$1,019.3 million in the years 2009, 2010 and 2011 (USD 2009 constant prices.) (Kellett J. , 2014 forthcoming)²¹.

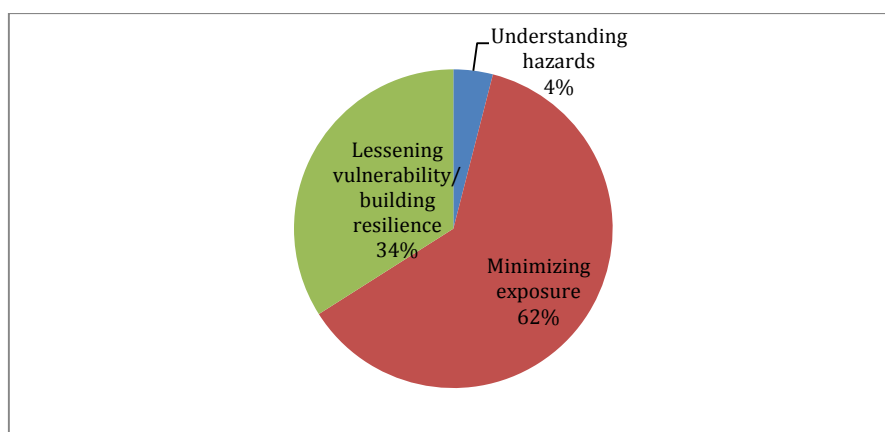


Figure 7: Distribution of DRR budget, Indonesia. (Adapted from Jose (2012) and UNISDR (2012))

In addition to this, in 2011, the Philippines became the first country in East Asia and the Pacific to take advantage of a World Bank Catastrophe Deferred Drawdown Option (Cat-DDO) of US\$500 million, a contingent credit product that provides immediate access to liquidity upon declaration of a state of emergency; the Philippines drew down the full amount of its Cat-DDO following Tropical Storm Washi to finance recovery and reconstruction costs.

These DRR financing initiatives have been largely, well received by both Filipino and international stakeholders. However issues remain and they are considerable, many of which have a financial dimension, including a lack of human capacity, logistics and equipment for all manner of DRR, and a simple lack of implementation of local authority obligations. This is driven by a set of issues, all of which have a financial dimension:

- Response Still First: A focus that still remains on response rather than reduction, leaving to funds allegedly being diverted from DRR back towards response. (See IDMC 2012, page 23.)
- Complex Governance Structure: A complicated structure of national, provincial and local levels, with mismatches in organisational structure across the range of obligations under the NDRRMF and act, forcing local government units to 'translate the work of five different line agencies into operations of one department at a local level. (Kellett J. , 2014 forthcoming)'
- Poorest Municipalities Remain Vulnerable: It is often the poorest areas that have the least capacity, facing a challenging combination of limited local resources to tackle risk and a basket of chronic needs, often exacerbated by continuous natural disasters.
- The sheer complexity of DRR financing. (See below.)

LGU BUDGETS	OBJECTS OF EXPENDITURE
1) General Funding	
- Personnel Services Fund	Salaries and Wages of DRR/CCA staff

²¹ Total DRR budget allocations increased by just over 44 per cent in constant USD prices for the period 2009-2011, due primarily to additional investment in rehabilitation and reconstruction following two major cyclones (typhoons) in 2011. (This is considered to be risk reduction, according to Filipino law and financing.)

- Maintenance and Other Operating Expenses Fund	Supplies and Materials for DRR/CCA office
- Capital Outlay Fund	Infrastructure, Building, Equipment
2) 20% Local Development Fund	Development, Resilience, and Adaptation
3) +/- DRRM Fund	DRRM Fund
4) Local CCA Fund	CCA Fund
5) 10 % SK Fund (Barangays only)	Youth Development Programmes, Projects
6) New Fees and Charges	DRR/CCA Initiatives
7) Cost-Sharing of LGUs	DRR/CCA Initiatives

Figure 8: LGU budget possibilities and objects of expenditure, adapted from 'Alternative Pathways to Climate Change Adaptation and Disaster Risk Reduction: Mainstreaming and Integration in Development Planning and Budgeting of Local Government Units', Page 31.)

Local financing for preparedness is considerably complicated by the relationship between national government and local areas in terms of resources and expenditure, and by the many options (each with their set rules and processes) for government to access additional DRR funding. There are at least seven different ways LGUs can fund work in DRRM from within their own budgeting alone.

The financing route most relevant to actual preparedness activities undertaken by LGUs at municipal and *Barangay* level is the DRRM Fund. This fund is made up of a minimum of 5% of the local revenues raised by municipalities that are returned to them by central government. The LGU can decide to spend considerably more than the 5% minimum, which has to go to the four areas under the DRRM act: reduction, response, preparedness and recovery, with a minimum of 30% of this DRM spending set aside for response.

While this appears to be an admirable way to manage local DRR expenditures, by ensuring a minimum is set aside for DRRM but allowing the devolved administrations to make choices about the priorities within that minimum, actual implementation has highlighted key connections to underperforming LGUs, especially related to available resources. Poor municipalities may only have allocated total expenditures of \$25,000 or less per year, to stretch across a wide range of needs. This might mean as little as \$1250 available to spend on each of the four areas under the DRRM act. The lack of local capacity may also prevent some of these LGUs from being able to creatively find other resources for their DRRM needs, such as indicated in the table above. In those areas at threat from climate-related risks, an additional burden requiring financing is the preparation and implementation of a local climate change adaptation plan; the People's Survival Fund (created to allow additional funds for this) has not yet been approved by parliament. (This sub-section on local-level DRR financing is largely taken from (Kellett J. , 2014 forthcoming)).

Non-Government Contributions

The Philippines is a country where the consciousness for disaster risk is particularly high. Civil society plays a major role across a wide range of DRR activities, from community preparedness to research into risk and vulnerability, with NGOs and academia heavily engaged. It is also one country where rhetoric about the role of the private sector appears to be met by actions. A recent study by ODI reflects on the range of private sector organisations, and their activities (Kellett & Peters, Dare to Prepare: Taking Risk Seriously, 2014)

- Philippine Business for Social Progress (PBSP) is the country's 'largest business-led social development organisation'. It works with its 243 member companies to integrate corporate social responsibility (CSR) into their core work, and examines the impact of business on the country's growth. It also has a philanthropic wing; in 2012 it reported giving support to more than 14 million people, both from its members and from other sources. It is increasing its work as part of a combined DRR/CCA agenda.

- The Corporate Network for Disaster Response is similar to the PBSP, and focuses on disasters in particular. Again sponsored by a mix of member and external contributions, it works in areas from disaster response to preparedness, with a particular focus on the country's most vulnerable areas.
- One of the most promising public-private sector partnerships for DRR is the Philippine Disaster Recovery Foundation (PDRF). Set up after the 2009 typhoon season, it is venturing beyond reconstruction into ex-ante initiatives, such as using mobile phone company installations to install rain gauges for monitoring purposes.
- The Filipino private sector is also expanding its influence and sharing its expertise beyond its own borders. In early 2013, SM Prime Holdings (the country's largest chain of shopping) joined UNISDR's private sector advisory group.

The Philippines has also been one of the major recipients of international financing of DRR, ranked 4th overall over 20 years, with \$834.6 million. Clearly the international community is engaged with disaster risk in the country; all key strategic engagement documents, such as the UNDAF, World Bank CAS, and ADB strategy, refer heavily to disaster risk, and help drive continued international funding and support.

COMPARING ACROSS CONTEXTS : ANALYSIS OF 6 COUNTRIES

The five country contexts are considerably different in a number of ways, the scale and scope of disaster risks, the general wealth of the country, even in the political set-up, each of which (and many other factors) can and do affect the way in which DRR is financed, and the priority to which DRR has amongst many other competing priorities. Given this, what can we draw from the case studies to help us understand how best to undertake DRR financing? What can be learnt despite contextual differences? What can help us inform the future financing models, processes and relationships?

How much of a priority is DRR in general development policy and planning?

All of the countries mention disaster risk in some fashion or other in their development planning. South Africa's is the weakest as it really only focuses on 'disaster preparedness'. Mexico is arguably the next 'weakest' because it largely focuses on risk financing, rather than reduction. Costa Rica talks of the need for risk reduction to be integrated into public investment decisions. The two countries with the highest risk profile, and similar in terms of government revenues per capita, Indonesia and Philippines, reference disaster risk frequently in their most recent development planning. Philippines stands out because of the way in which disaster risk is framed as an issue of national security.

How 'integrated' is the model of DRR financing?

The model of financing disaster risk reduction is considerably variable across most of the case study countries. This is in part due to the governance model of the country and way in which risk is articulated in development policy and planning. We have different 'priority' given to integration of risk in development across the case studies. All of the countries except Mexico make integration of risk (and the financing of it) an issue for sectors and ministries, and development in general. The problem is with the implementation of these instructions. Even with the Philippines, where 'instructions' to integrate DRR into development planning and financing are relatively clear, there is little clarity on exactly how that should be done. In the remaining three countries the actual 'issues' with such integrated financing are more obvious. In South Africa a lack of clear guidelines or general understanding with DRR, together with a perception that 'risk' is someone else's problem has led to a lack of financing. In Indonesia, instructions within policy are relatively clear, but actual financing is undercounted, because of the lack of tracking methodology. Finally, for Costa Rica, the most overall successful financing model, according to our literature review, has a rather unusual 'dual' system where sectors are supposed to finance DRR through their own work, whilst also they contribute 3% of their own budget to DRR, to CNE, the central risk body.

All of these issues, about policies and practices, and the turning of instructions into actions regarding financing, is made incredibly difficult because of the relatively lack of financial tracking of DRR.

How does the financing of DRR operate at sub-national and local levels?

One weakness that appears across the case studies is exactly how financing works below the national level. Each of the case studies reveals a slightly different element of miss coordinated or malfunctioning DRR financing. In the Philippines it is due a financing system that is both complicated locally, and depends on having municipalities of capacity to implement, problematic given that the municipal-financing system actually tends to mean poorest municipalities have least capacity. Within Indonesia legal and institutional structures exist and decentralisation in general is strong, but actual budgeting for DRR at a sub-national level just does not occur. This is similar in South Africa, where a lack of risk consciousness and understanding of the issues, and issue found at national level, further informs a lack of money locally – essentially there is little money and even when there is, local authorities are not aware how to use it. In Costa Rica municipalities are obliged under law to maintain

permanent emergency management committees and undertake local risk reduction; in reality they receive little funds, with inter-related issues of a lack of technical capacity and human resources²².

In Mexico meanwhile, the bulk of literature concentrates almost exclusively on Fonden and risk transfer, with risk reduction of all kinds of marginal concern, especially local level risk reduction.

Volumes of Financing within National Budgets

Challenges exist in comparing DRR across such diverse contexts, firstly the limited standardisation of what is considered as DRR, secondly (and relatedly) the way in which expenditure is included within other expenditures, the issues of currencies and years of pricing, and finally the various years in which financing is reported²³.

We do have some comparable figures. These include financing for two of the countries included in this research paper. A comparison across five of those countries, translating all prices into comparable figures highlights the significant investment in DRR from each country.

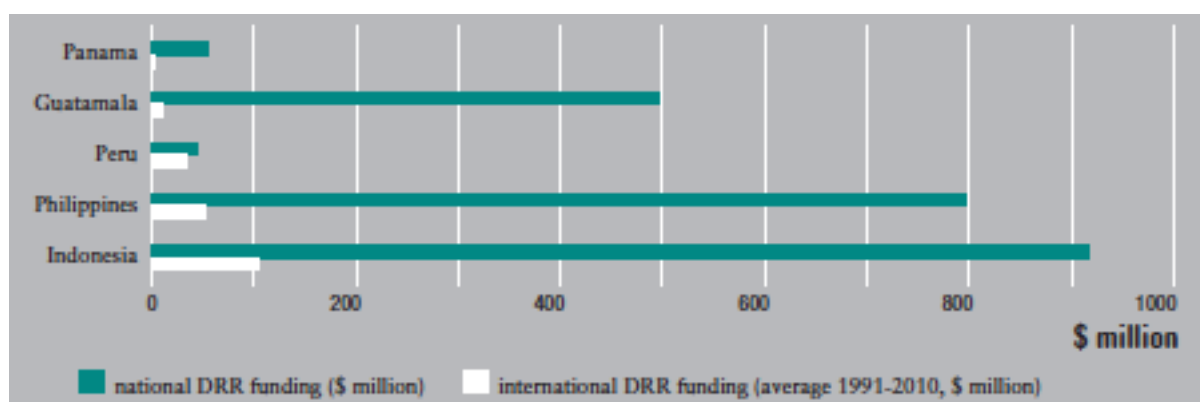


Figure 9: National financing of Disaster Risk Reduction (compared with international financing averages) average over a number of years or actual value for year indicated, all 2009 prices. (Source: (Kellett & Caravani, 2013))

Whilst these volumes are not insignificant for all five countries, their usefulness is somewhat undercut by the lack of full knowledge of DRR commitments from governments because of both a lack of shared definitions, and beyond that risk governance systems, which goes some way to preventing a full 'counting' of DRR from national budgets.

Does relative wealth affect the way in which DRR is financed ?

This is a challenging question to answer given the limitations of the exercise. We had wished to draw upon the financing experience of a wider range of countries, especially those which are low-income. However, only one of the 16 countries represented in figure 2, and marked as low-income actually had enough research material to warrant consideration for this paper, and even this country, Nepal, on reflection, had much more material on international engagement with DRR than national. (See page xxx for more details.) There is simply very little research that has been done in low-income countries, even those ones that are relatively stable, and for which DRR is an exercise that can take place, relatively unfettered from issues of insecurity and conflict.

Beyond this however, can we say anything about the five countries that we have examined ?

²² Note that the available literature for Mexico says almost nothing about local financing of DRR.

²³ Possibly put this in a text box.

Indonesia and the Philippines are relatively similar in terms of government revenues per capita, with about \$500 per year, with Mexico and South Africa both above \$2000 and Costa Rica somewhere in the middle, just over \$1000.

All of the systems on 'display' place risk in development planning and policy, all at least talk of integrated financing of risk, and all have considerable issues translated national financing of risk into sub-national financing. There is little discernable that we could put at the door of national wealth. Even 'risk transfer', a tool of usually richer nations, is used by both the poorest of our five countries, the Philippines, and the richest, Mexico. The Mexico model, is, however, more advanced, with a series of inter-connected transfer-retention mechanisms; this is probably the one-stand out issue.

		Mexico	South Africa	Costa Rica	Indonesia	Philippines
Processes of financing	National, Development, Climate Change policies and structures manage the financing of DRR?	SINAPROC: executive coordination agency for disaster prevention, post-disaster response and reconstruction activities.	National Disaster Management Framework (NDMF) of 2005 guides the implementation of the 2002 Disaster Management Act which established the Disaster Management Centre (principal functional unit for national DRM)	National Risk Prevention and Emergency Management Commission (CNE) and the National Emergency Fund (FNE) established in 1969	Coordinating role played by the National Agency for Disaster Management (BNPB) National DRR plan for the period between 2012-2012. Other national planning documents also recognise the importance of DRR activities	National program of Community Disaster Preparedness established in 1976. The National Disaster Risk Reduction and Management Council has the role to draft a DRM Framework for the country. 3 DRM dedicated funds are active in the country.
		Development National Plan 2013-2018 recognises the importance of DRR	National Development Plan 2030 mentions disaster preparedness as one of its objectives	The 2011-2014 National Development Plan (NDP) emphasizes the need to integrate risk reduction for natural hazards into the public investment decisions	Mid Term National Development Plan 2011-2014 considers natural disasters as a priority	The Philippines Development Plan 2011-2016 (PDP) features risk management throughout
		2013 Climate Change Strategy recognises the importance of DRR.	National Climate Change Response White Paper highlighting the need for additional funding for DRR in the context of climate change.	n/a	Climate Change Policy only available in Indonesian	DRR and Climate Change Adaptation (CCA) as joint requirements of the DPD
	DRR financing integrated or stand alone (or both)?	Mainly stand-alone through FOPREDEN	Both (?)	Both but not explicitly expressed	Both with a specific budget code for the stand alone investments and without it for those embedded	Both (?)
	Decentralisation process: is the funding flowing to the local level?	Limited information available	Whilst legal and institutional structures exist, the budgeting and funding at the subnational level is considerably inadequate	Municipalities are required under National Law No. 8488 to maintain permanent Emergency Management Committees to coordinate local disaster management but they receive limited funding	Whilst legal and institutional structures exist, the budgeting and funding at the subnational level is considerably inadequate	The Local Disaster Risk Reduction and Management Fund with considerable funding targeting preparedness activities
Volumes of DRR funding	The amount spent on DRR, and by which national body.	\$800 million in 2011 allocated to FONDEN	n/a	In 2007 \$18 million and \$3.2 for specific risk reduction investments through the CNE. Plus \$ 17 million in 2007 to FNE from public entities	USD 1.19 billion in 2012	Average annual \$ 800 million between 2009-2011
	% of DRR budgets spent	n/a	n/a	n/a	n/a	n/a

	What contributions come from outside of government sources and are there any specific implications of that financing?	Catastrophe bonds and insurance mechanisms. The latter led to the development of detailed risk assessments	Some involvement from NGOs through technical support	Little has been done' (Sarmiento and Hoberman 2012)	At least nine NGOs have been involved in the implementation of DRR activities since 2000, but with low funding ranging from \$0.15 to \$1.5 million	Private sector and civil society in general is very active
	DRR int. financing (USD mn) (1991-2010)	586.28	5.61	0.71	1,439.20	834.58
	International DRR funding (2003-2010) (\$ million)	2.08	5.58	0.71	553.95	280.42
Volumes of Climate funding	International CF (2003-2010) (\$ million)	364.81	441.93	18.14	2.5	148.22
	International AF (2003-2010) (\$million)	4.50	6.78	4.85	9.9	104.20
Status of the research	Studies available: literature review	10	4	5	5	7
Risk indicators	MMRI	6	4	7	9	8
	% pop. at risk	68.2	56.4	84.8	67.4	81.3
	% GDP at risk	71.1	62.4	86.6	62.3	85.2
	% pop. affected by droughts	0.12%	1.64%	0.00%	0.02%	0.18%
Geo Economic indicators	Govt Rev, (av. 2007-2011\$)	706,600.70	324,003.28	67,061.72	n/a	416,416.13
	Income level	UMIC	UMIC	UMIC	LMIC	LMIC
	Region[1]	Latin America and Caribbean	Africa	Latin America and Caribbean	Asia and Pacific	Asia and Pacific

Text Box: Evidence of Transparency and Accountability

The transparency of available information on DRR financing, and the necessary holding to account government and other actors that control that financing, are both key to effective and efficient programming and implementation. We know from the HFA monitor that the majority of countries report to have a) a national disaster information system publicly available, b) an availability of information on DRR practices at a community level. What does current research into DRR financing say about these issues? Is there any reference to transparency within DRR financing at a country level? Are there references to processes of accountability? The following are what are evident from the texts:

South Africa

Madubala and van Niekerk attribute a clear lack of accountability to lack of demand and awareness of DRR services by public. This is in general an element of the low level of risk 'consciousness' across South African society, shared by politicians and civil society alike.

Costa Rica

The CNE has a high level of credibility among the Costa Rican public due to its considerably evolution over time, and reputation for transparency of its use of reconstruction resources (Poundrik, 2011:8). Meanwhile the work of effective integration of DRR into development is still evolving. The Ministry of Planning is elaborating 'the development of instruments for pre-investment design and evaluation that incorporate risk analysis criteria. (Orihuela, 2012, p. 8)' Not only would such a development enable effective tracking of allocation of financing to DRR in the country, it would incentivise that financing, through making it clear what body was investing what level of funding, and how risk in general was integrated into sector and ministry activities.

Mexico

Mexico has limited capacity to track DRR expenditure because it doesn't use a specific code for it. This may change as a new initiative with the World Bank and the Government will analyse DRR investments, appraise the use of hazard risk information in national investment decisions, analyse the impact of the investments in case studies, and design a mechanism for monitoring future DRR investments (Gordon, 2013:11).

Philippines

The Philippines Republic Act 10121 commits the government's DRR program to principles of good governance, including transparency and accountability. The law decentralizes much of DRR work to local governments, which may increase accountability – but this has yet to be studied thoroughly, as there is a dearth of material on transparency and accountability at the national or subnational level. The Philippines does not yet have a system to track DRR spending in the national budget, but the increases in expenditures in the past few years indicate that the hazard-prone country has begun DRR as part of its development strategy. This is corroborated by the 2011 – 2016 Philippine Development Plan, which mainstreams DRR into its « social development » and « infrastructure development » goals, or 2 out of the 10 overall areas for targeting resources.

In the Philippines transparency remains an issue for the international community. In their review of emergency preparedness in the Philippines, Kellett and Harris (2013) investigated weaknesses in the current system, finding that coordination amongst agencies is inconsistent, creating a system where little is understood about what is being done and who is doing it.

Indonesia

The monitoring of expenditure and outcomes of DRR investments is facilitated by a budget classification developed by the country for stand-alone DRR activities (Gordon 2013). More difficult is to track DRR investments embedded in other sectors. Darwanto (2012) proposes a specific budget code for DRR (a specific code for each area of action) along with DRR outcome and outputs indicators that could be used in a standardised way by all the ministries and agencies involved. These are based on the classification of DRR programs identified in national disaster laws and regulations.

In summary the case studies don't have much to tell us about either accountability or transparency. The HFA Monitor tells that xxx for each country, but we cannot confirm that to be the case from within the research papers currently available.

CONTEXTUALISING NATIONAL FINANCING OF DISASTER RISK REDUCTION

International Support to the Financing of DRR

The research into international financing of DRR is actually quite limited, despite the relatively high profile of the subject. Whilst many papers and research projects have touched in part on financing, it is almost always by way of some of other kind of investigation, or other thematic. There have probably no more than a handful of investigations that look at international commitments to DRR financing in a global fashion, comparing and contrasting amongst recipients and donors. (See Kellett & Sparks 2012, Sparks 2012, Kellett & Caravani 2013.) The latter report highlighted the following worrying trends:

- Financing has been highly volatile; only in the past few years has there been relative stability.
- Although \$13.5 billion of financing has been made available, it is a fraction of overall aid, less than 40 cents in every \$100.
- Financing is considerably fragmented. The 3,188 projects that cost less than \$1.5 million represent 86.5% of the total number but only for 5.5% of the volume of financing. The administrative costs of this have not been calculated.
- There is a high concentration of funding in a relatively small number of middle-income countries. The top ten recipients received nearly \$8 billion, the remaining 144 just \$5.6 billion combined.
- Many high-risk countries have received negligible levels of financing for DRR compared with emergency response; 17 of the top 20 recipients of response funding received less than 4% of their disaster-related aid as DRR.

In addition, the priorities of international financing are, on the whole, not matched to either the needs or capacity of recipient countries:

- There is some correlation between mortality risk levels and volumes of financing, but only at the high-risk level.
- Per capita financing reveals significant inequity. Ecuador, the second highest recipient per capita, received 19 times more than Afghanistan, 100 times more than Costa Rica and 600 times more than the Democratic Republic of Congo (DRC).
- Where the economy is at risk, volumes of financing tend to be high; where predominantly populations are at risk, volumes are often low.
- Financing in drought-affected countries is very weak. Niger, Eritrea, Zimbabwe, Kenya and Malawi have seen 105 million people affected by drought, but their combined DRR financing has been \$116.5 million, the same as Honduras alone.
- Financing does not take into account national capacity and finances. Twelve of a group of 23 low-income countries each received less than \$10 million for DRR over 20 years. These same countries received \$5.6 billion in disaster response, equivalent to \$160,000 for every \$1 of DRR.

Key issues that are alluded to here in this list of findings (Kellett & Caravani 2013) which are directly related to issues of national coherence and comprehensiveness of DRR financing are : the considerably uneven financing support to countries most at risk and most in need of support, the heavy burden placed on governments dealing with so many different donors and kinds of approaches. In addition there has been little work done on national financing of DRR that attempts to comprehend how financing from both international actors and that from government revenues can be effectively and efficiently utilised. For example, very few of our case studies consider this at all.

Non-Government Resourcing for Disaster Risk Reduction

Similar in fashion to the research on international aid financing of DRR, non-government national financing is considerably lacking in depth and breadth. There are, as indicated in the case studies,

only a few references to either civil society or private sector engagement with financing of DRR (and nothing at all on philanthropy and foundations) this despite, for example a lot of rhetoric about the importance of the private sector in particular, something that has been repeated in recent Global Assessment Reports. What literature there is that mentions civil society's role in financing and funding is usually interested in its role as maintainer of accountability. (Newborne, 2008).

Part of the issue, it is surmised, is because the private sector (and other stakeholders) just don't use the same language as DRR experts, whether financial or otherwise, and they are not in the same networks. This may suggest that national platforms have some way to go before engaging fully with these stakeholders and bringing them on-board shared risk reduction visions. It may also reflect that when NGOs are involved in DRR, its 'contribution' may not be easily countable in terms of financing, and much of it may be collected 'voluntary' outside of regular reporting systems.

This all said, this is reflections between the lines on a range of texts investigating national financing of DRR – **above all else we need better research tied into practical engagement and financing.**

Climate Adaptation Financing

The broad and established recognition within the literature (Ventona and La Trobe 2008; Mitchell and Aalst 2008) of the lack of integration between DRR and CCA in general, is also reflected in financing issues.

Although national plans often group the two together as priorities, their funding is institutionally separate (at least in terms of national budget allocations)

Only 18% of the studies mention climate change adaptation explicitly and explore the links between CCA and DRR: insurance and agricultural microcredit are points of synergy between CCA and DRR, sourced by climate finance²⁴.

Because of the lack of availability of volumes of national DRR and adaptation funding, at this stage we can't compare these trends. But these can be compared looking at international sources of DRR, Climate and Adaptation finance (see charts XXX).

The reason of this lack of integration is mainly the recognition that while they have many similarities, the two agendas also differ. While DRR experts tend to learn from past shocks, and give more emphasis to community based approaches, CCA ones deal more with risks that have *yet not* being manifested thus they tend to take into account longer-term design strategies; and adaptation is more driven by a top down process, because of the strong influence of the UNFCCC system (Venton and La Trobe 2008). Obstacles of integration of funding mechanisms are caused by the fact that both CCA and DRR have their own institutional mechanisms for delivering the funding so for example CCA tends to rely on the ministry of the environment or of finance for the implementation of adaptation programs while DRR programs tend to be implemented through inter-sectoral coordination mechanisms (Mitchell and Alst 2008).

There are some examples from around the world show how some organisations are adopting a more integrated approach to adaptation and DRR. These range from consortium of NGOs, government initiatives, to UN bodies that together promote initiatives to integrate the two agendas (Venton and La Trobe 2008).

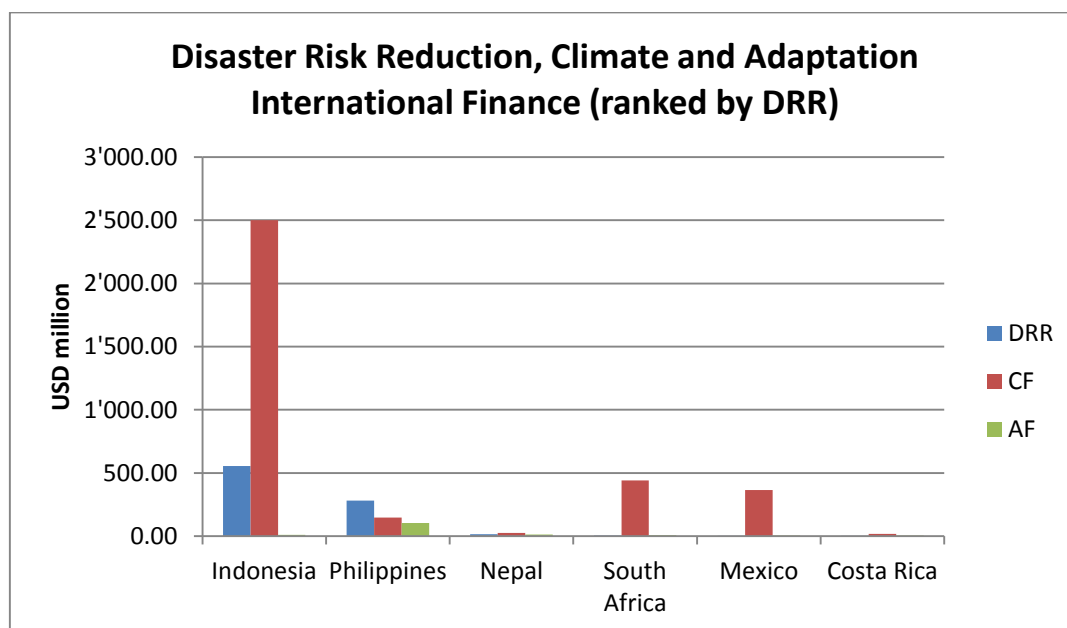
International adaptation finance is increasingly investing in disaster risk reduction activities (Kellett and Caravani 2013). Therefore the funding itself should be available from climate dedicated funds, in

²⁴ We will graph whether or not countries that have received DRR have also received CCA... and highlight a lack of integration, if that is indeed the case.

particular for early warning systems and institutional strengthening but it gets managed and delivered within 'adaptation' relevant institutions, not those involved with DRR. This leaves the DRR component as climate related, isolated from the DRR systems.

The HFA Monitor's Priority for Action 4 based on reducing the underlying risk factors includes as one of its indicators: *Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.* The HFA Monitor Tool reports that 89% of the countries are implementing climate change adaptation projects and programs but it's not very clear whether these are integrated in other DRR activities or not.

We can look at trends of international DRR, Climate and Adaptation finance by taking a closer look at how these have been directed to the six countries already examined.



From the chart above it emerges that:

- The lack of integration of DRR and AF is reflected in these figures where we don't see any common trends in the allocation of DRR, CF or AF to these countries. However trends between DRR and AF are slightly more similar than the ones between DRR and CF, as DRR and AF are pursuing more similar goals.
- Indonesia is both the highest recipient of international DRR and CF, but with a low amount of adaptation finance because the country has strong commitments towards reducing GHG emissions, so favouring mitigation and REDD+ finance. However in more recent years adaptation finance has increased considerably as a result of a more recent commitment of the country to also favour adaptation activities in the country, which has recently drafted a national guideline on adaptation strategy²⁵.
- The Philippines is the country which has relatively high DRR, CF and AF, as opposed to Costa Rica which receives low amounts from all sources.
- South Africa and Mexico are both countries with very low DRR and AF but large amounts of mitigation finance.
- When looking at the adaptation activities that targeted DRR, of the six countries only Mexico and South Africa come up, respectively with USD 6.3 and USD 3.4 million primarily focusing on early warning systems.

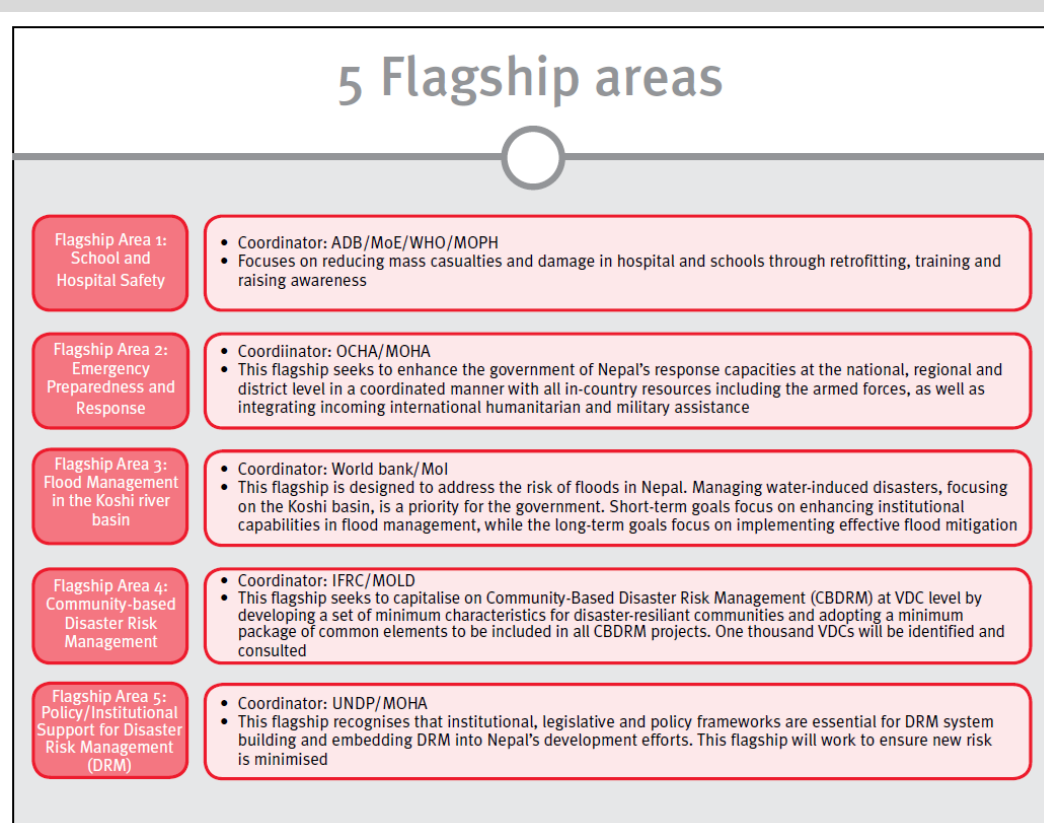
²⁵ Based on a comment from Aidy Halimanjaya (ODI Research Officer).

Box I: Nepal Risk Reduction Consortium:

Example of cooperation between national and international DRR financing institutions

The Nepal Risk Reduction Consortium (NRRC) was formally launched in 2011. It has been driven by key individuals within the government and in key agencies and international donors developing an innovative structure for DRR financing. The NRRC's five flagship areas are clearly illustrated in the table below:

Table X: NRRC's five flagship areas



Source : Humanitarian Practice Network : <http://www.odihpn.org/humanitarian-exchange-magazine/issue-53/the-nepal-risk-reduction-consortium>

The NRRC's \$150 million budget was about 45% funded at the end of 2011 (ODI-HPN). This shows that there are some obstacles in the efficient delivery of resources. Taylor et al. (2013) show that this innovative approach of pooling funding from a diverse range of sources holds big potential, but it also unveils its limitations first of all in terms of tensions between the various actors involved, caused by the different approaches proposed to risk reduction. Furthermore, they note that the NRRC in its current format lacks the strategic coordination and mechanism for prioritising outcomes and outputs that would facilitate a straightforward process for allocating funds.

CONCLUSIONS AND RECOMMENDATIONS:

Can we understand how effective DRR financing has been?

One of the key requirements is to put behind the advocacy focus of the HFA in the past and focus on the effectiveness of DRR financing. Most of the current systems of DRR we see utilised in the developing community have had their latest 'flowering' in the few hours following the HFA. What, therefore, can the case studies and the wider literature review tell us about?

The answer to this is unfortunately, very little at all. There is simply not enough evidence out there to make this judgement. Much of what we can say is anecdotal, supporting wider attempts to understand the context of DRR in a particular country. Even relatively glowing reports such as for Costa Rica say that processes, systems and actors make sense, are coherent etc. They don't say directly that the work is successful in reducing disaster risk.

Can we say anything about coherence and comprehensiveness ?

From an examination of the available literature, we can say almost nothing about this, beyond the points raised earlier in terms of national planning, integrated financing, local level financing etc.

The HFA and the Way Forward

We cannot say the HFA has failed to deliver on effective and coherent financing of DRR. This is partly because of the weakness of the research thus far, as already indicated. It is also possible that a perceived weakness in the HFA itself makes the question of its financial effectiveness irrelevant. If disaster risks could increase regardless of implementation of the HFA, that would make the financing of that work, almost redundant, more likely to be a contributor to risk perhaps, than a reduction of that risk.

Combined Recommendation:

1. Refocus the HFA around effectiveness of financing rather than processes and volumes. This should be connected to commitments to achieve results rather than meet input indicators.
2. The successor to the HFA should be underwritten by much more work to support the actual implementation of financing DRR at a national level. There should be significant work in learning lessons, tailoring best practice to new contexts etc.
3. At the very least consider the setting of firm targets for both international support to national risk reduction and especially national contributions to risk reduction. Lay out mechanisms for accountability and transparency. Without this level of guidance and commitment, countries will not be able to measure progress, and institutions that provide aid will have no benchmarks.
4. Invest considerably therefore in an exponential expansion of research into national financing of DRR, which remains at this point very weak, neither having sufficient breadth nor depth, nor missing out on key issues such as effectiveness, indicated above, or contributing factors such as incentivisation. This research should certainly examine

existing 'bottlenecks' in DRR financing, such as the disconnect between national and international financing.

5. Elaborate more clearly on the role and responsibility of international financing of DRR, across a range of contexts. What is it for, and what should it not be for? How can it continually advance national-led DRR? And what kind of commitment can 'tie' donors and implementing actors into a coordinated and coherent contribution to DRR. (See Kellett & Caravani (2013) for more details of the work still to be done by the international community in financing DRR.)
6. Continue to develop more effective tools for tracking financing of all kinds of DRR. Without this information, investigations into DRR financing, its effectiveness, etc, will always be handicapped.

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