Measuring political will: An index of commitment to disaster risk reduction

Full authors’ details:

JONATAN A. LASSA [Senior Lecturer, Emergency and Disaster Management Studies, Charles Darwin University, Darwin, NT, Australia 0909] Email: JONATAN.LASSA@CDU.EDU.AU

Akhilesh Surjan [Associate Professor, Emergency and Disaster Management Studies, Charles Darwin University, Darwin, NT, Australia 0909] Email: AKHILESH.SURJAN@CDU.EDU.AU

Mely Caballero-Anthony, [Associate Professor, Head of Centre For Non-Traditional Security Studies, S. Rajaratnam School Of International Studies (RSIS), Nanyang Technological University, Singapore, 639798] Email: IMSMCANTHONY@NTU.EDU.SG

Rohan Fisher [Information technology for development researcher], Darwin Centre for Bushfires Research, RIEL, Charles Darwin University, Darwin, NT, Australia 0909] Email: ROHAN.FISHER@CDU.EDU.AU

• Corresponding author: Jonatan A. Lassa

Abstract
The future of societal resilience depends largely on political commitment to allocate resources to manage and reduce disaster risks and vulnerabilities and build resilience. Lack of political commitment has often been cited as one of the culprits inhibiting countries to prioritize actions towards mitigating hazards and reducing risks in short and long term. While acknowledging existing global disaster risk assessments such as World Risk Report, Climate Risk Index, and Global Assessment Report on DRR, etc., we advocate for a new index with the intention to trigger critical discussion that drive political commitment for disaster risk reduction worldwide. Under the aegis of 2030 global targets of meeting the Sustainable Development Goals and Sendai Framework for Disaster Risk Reduction, governments should work collaboratively to substantially reduce global disaster mortality and mitigate loss and damage of economic assets and infrastructures. With this in mind, this paper proposes an index aimed at measuring countries’ commitment to reduce risks from disasters and changing climate. Commitments from nations can vary and may include: investment in early warning systems; disaster vulnerability reduction activities such as fiscal allocation for mitigation, raising awareness, promotion and incentives for stakeholders to participate in managing risks. This paper contributes to new knowledge and understanding on how political will can be assessed and monitored. It contributes to both local and global debates to strengthen institutional mechanism by way of fostering political will for building resilience and reducing vulnerabilities.

1. Introduction
Political will and/or political commitment have been often stated as one of the most important factors to make resilience a reality. During the Global Platform for Disaster Risk
Reduction (DRR) in Cancun, Mexico during 22-26 May 2017, political commitment has been frequently mentioned as a very important condition for securing disaster risk reduction and resilience. For example, in the Plenary Session on Coherence between the Sendai Framework, the 2030 Agenda and Climate Change, the first recommendation was to “build political will nationally to implement the coherent approach already embedded in the Sendai Framework, the Paris Agreement and the wider 2030 Agenda.” (UNISDR, 2017, p. 41).

Examples can also be seen in DRR Governance Session where the Panel members concluded that “a successful process of DRR governance needs strong political will at the highest political level. As the Sendai Framework is not a legally binding instrument, countries must transform the political will into national legal frameworks and policies that guarantee that DRR is regulated and enforced” (UNISDR 2017, p. 56). The first recommendation and commitment of the Panel states that: “effectiveness in achieving the objectives fostered by the Sendai Framework for reducing disaster risk is contingent upon the political will to translate a global non-binding framework such as the Sendai Framework into national governance mechanisms that guide the public and private sector in addressing disaster risk” (UNISDR 2017, p. 56).

Similar emphasis on political commitment has been highlighted in previous global platforms. For example, the Global Platform for DRR 2009 also highlighted the notion that it is not enough to set clear targets for DRR as advocated by the Hyogo Framework for Action. The Platform highlighted that the road built towards disaster resilience need to be paved with political commitment (UNISDR, 2009, p. 35). This paper argues that despite similar worded statements highlighting the importance of political will and commitments as the key to reduce disaster risk, it remains the most unexplained and the least understood concept in disaster risk and climate change adaptation studies.

Medium and large-scale disasters often impact on fiscal capacity of nations. Most low to middle income countries experiences fiscal gaps to buffer against climate and disaster risks. Financial resources required to recover from a medium to large-scale catastrophes are usually not incorporated or even anticipated in the fiscal design. While most of the disaster losses and damages are not insured especially in the developing world, there is also lack of appropriate policy or incentives to increase insurance market penetration. Therefore options to reduce risk or recovery from disasters require governments’ fiscal support. However, fiscal allocation involves both political will and administrative commitments (Masset 2011, UNISDR 2017). Risk reduction receives little attention because legislators (i.e. politicians) obviously give more priority to other competing developmental agenda. Fiscal planning and execution of the developmental planning require executive side of the governments (i.e. administration) to work as per politically decided priorities.

Under auspices of the Sustainable Development Goals and Sendai Framework for Disaster Risk Reduction, governments around the world are expected to work independently and collectively to achieve the target (United Nations, 2015a). Ideally, governments should substantially dedicate efforts to develop risk reduction strategies and set targets to reduce both global disaster mortality and reduce loss and damage of economic assets and infrastructures. Such strategies may include but not limited to: ensured access to early warning and disaster information services, physical and social protection from multiple catastrophe risks, access to social safety nets at all times, increased freedom of at risk communities in selecting risk management options such as insurance, hazard proof shelters, resilient food system, etc.
Global distribution of disaster risks remain very high as there is a strong evidence that both disaster mortality and economic loss and damage in middle income countries are on the rise (United Nations, 2015b). Economic losses from recurrent hazards such as earthquakes, tsunamis, cyclones and flooding are now reaching an average of US$250 billion to US$300 billion each year (United Nations, 2015b).

Addressing disaster risks ultimately is a matter of administrative and political priorities at the global, regional and national level. This paper argues that risks and resilience are the outcomes of institutional and societal commitments or lack of it (Lassa, 2011). In this light, this study attempts to create an index aimed at measuring government’s commitment to reduce disaster and climate change related risk, including investment in early warning systems and disaster vulnerability reduction such as fiscal allocation for mitigation, raising awareness, systematic vulnerability assessment, enhancing living conditions and incentives created to participate in managing risks.

In order to make resilient society a reality, a set of social, administrative and political commitments must exist at all levels of governance. Can an index be constructed to assess governments’ commitment to reduce disaster risk? Possibly yes! How can the metrics of political will and government commitments to be adaptive to climate change and reduce risk of natural hazards be measured? This study argues that a systematic measure of political will to reduce disaster risk can help the stakeholders drive change (UNDP 2004 – See Section 4).

This paper argues for the need for such an index and outlines one way of constructing it. It aims to develop robust measures of political commitment and highlights the variables that contribute to policy implementation and disaster risk outcomes. Finally, it presents an index developed to systematically assess administrative and political commitments of governments across the globe to reduce and mitigate risks. Furthermore, despite the merits of such an index, the paper highlights the limitation of such an index and suggest readers to be mindful of the approach.

2. Literature Review

2.1. Understanding Political Will

When preventable disasters occur due to inaction or lack of action from governments, political will has been often cited as the culprit. NGOs believe that political will from within governments is a necessary condition for fostering DRR action in the real world (Gorin, 2014). Interestingly, others argued that political will that rests in political constituencies is a necessary condition for fostering disaster risk reduction (UNISDR, 2013, p. 12).

Disaster studies scholars often mention it as one of the root causes of vulnerabilities because there are political costs associated with shifting priorities from visible development projects to address long-term vulnerabilities (Christoplos, Mitchell, & and Liljelund, 2001, p. 195). Probably, it is beyond the scope of disaster studies scholars to define the term political will appropriately. Interestingly, in policy and political studies, political will is considered as one of the most ‘slipperiest concept’ because ‘it is never defined except by its absence’ (Hammergren, 1998, p. 12). Post et.al. argues that the ambiguity of the term makes it ideal for achieving political objectives which create spaces for blaming political failures when policy diagnosis is unclear (Post, Raile, & and Raile, 2010, p. 654).

Government has become one of the most pervasive facts of everyday life (Peters, 2001). In modern disaster management, people often turn to governments during and after disasters (Schneider, 1992). This research argue that this paternalistic behaviour can be seen as
natural as peoples’ increasing understanding of rights and entitlements as tax payers and citizen often create demands for their entitlements to safety and security. But the understanding of paternalistic behaviour towards or by government can also be seen in some of the recent contemporary studies of governments, governments can sometimes be seen as ‘oxymoron’ where they can be seen as a ‘nanny state’ or a ‘helpful friend’ (Le Grand & New, 2015) but at the same time they can be blamed for everything that are not functioning. Furthermore, governments can also play roles according to the idea of libertarian paternalism, a relatively nonintrusive type of paternalism (Tahler & Sustein, 2009) because peoples’ choices towards risk reduction are not coercively enforced but creatively embedded in certain sphere of public policy.

Metrics and scorecard of ‘political will’ have proliferated in different disciplines ranging from food security (Te Lintelo & Lakshman, 2015) to corruption studies (Brinkerhoff). The literature highlights that ‘political will’ is frequently equated with ‘political commitment’ and therefore these terms are used interchangeably (te Lintello 2014). It is a composite and complex variable ranging from administrative will, to political will (in the sense of executive governments and legislative agencies) to CSOs/NGOs as quasi-parliamentarian and opposition governments. The authors relate ‘administrative will’ as a concept related administrative governance which defined as “the system of policy implementation that requires the existence of well-functioning government organisations at the national and local levels, and which play roles as enforcers of regulations related to disaster mitigation, building code enforcement, land use planning, environmental risk, and human vulnerability monitoring and safety standards” (UNDP, 2004, p. 75)

Measuring political will quantitatively is not a simple exercise not only because of data limitation but also because of the theoretical framework that underpins it. It can only be done indirectly and its evidence is often “cited ex-post facto from a retrospective point of view” (Brinkerhoff D. W., 2000, p. 241). In an attempt to measure political will for corruption eradication, Brinkerhoff suggested a conceptual model from two perspectives: first, the characteristics which can be represented in a set of indicators, and environmental factors that affect political will (Brinkerhoff D. W., 2000, p. 242). He further attempted to build the architecture surrounding political will and identifies individual actors, organisations, socio-economic and governance systems, and policies, programmes and activities as the building blocks.

Another attempt to measure ‘political commitment’ has been carried out in the context of accelerating nutrition security. Researchers identified policies, budget, legislation, degree of inclusion in national development strategies, priority compared to other sectors, and continuing active participation in reporting obligation as indicators of commitment (Engesveen, Nishida, Prudho, & Shrimpton, 2009). Related sectors where international donors and development partners often play significant roles, published policy strategies can serve as indicators of their commitment. Engesveen et.al. used existing database and papers as sources of data to assess countries’ commitment (Engesveen, Nishida, Prudho, & Shrimpton, 2009). This confirms Brinkerhoff’s observation about ex-post facto approach in measuring political commitment (Brinkerhoff D. W., 2000).

In a trade and tax reform setting, Morrissey (1995) observes that political commitment is needed and external factors play important role in influencing such commitments. Identifying and assessing policy context is critical prior to introducing reform measures. Assessing the types and effects of reform efforts will give an indication of political commitment and institutional capacity (Morrissey, 1995). Morrissey opined that political capability is needed to carry out the intent, and in so doing efforts to reduce political
conflicts particularly vis-à-vis opposition is reflective of commitment to conduct certain reforms. Existing indices on public actions such as hunger have yet to capture the political will component (Masset, 2011). Masset highlighted the need to measure political commitment, and suggests that perception surveys need to be performed in addition to policies and budget allocations. Te Lintello and Lakshman (2015) have used expert opinion and perception survey to unpack political commitment.

Te Lintelo et al. (2014) built on these ideas and focuses on the element of action instead of intention as it is easier to identify and measure the former. Legal frameworks, policies and programmes, and public expenditures are identified as means to measure governance. Operationalising the three themes require sets of selected indicators, and the author suggests some criteria in choosing indicators including a consideration of important aspect of the reduction efforts, simplicity and transparency, and strong correlation within the same theme but less so with indicators under other themes. The study, however, warns of no or extremely limited data availability and a lack of variation across chosen indicators.

2.2. Political Commitments, Institutions and Causality of Disaster Risk

Arild Underdal argued for the need to understand the causal mechanism and pathways through which disaster related institutions shape communities’ behaviour and disaster risk outcomes, (Underdal, 2007, p. 4). Countries performance in disaster risk reduction could be measured by the outcomes of disaster risk management namely disaster risk level (e.g. indicated by world risk index or climate risk index). Unmanageable risks or the occurrence of preventable disasters mirrors lack of commitments across many domains ranging from society, to politicians, bureaucrats as well as public and private institutions. Disaster scholars are often interested in how well do institutions perform disaster risk reduction (Lassa 2011). Mitchell asserts that performance question should include how institutions influence outputs, outcomes or impacts as well as contributes to specified goals (Mitchell, 2007, p. 6). In case of this study, goals shall be inspired by both Sendai Framework for Actions on DRR as well as Sustainable Development Goals.

If progress of disaster reduction depends on political will, reversibly, political commitment or political will might be a predictor for disaster resilience and adaptation to climate change. In fact, institutions – formal or informal including political and administrative entities – can determine the outcomes of disaster risk governance (Lassa 2011). In the context of disaster risk reduction (DRR), a number of studies have pointed to the importance of political will in strengthening DRR efforts. A number of studies have identified that disaster vulnerability is influenced by governance and institutional capability as it affects economic and social development necessary for building national climate resilience. Accountability, participation, predictability, and transparency are identified as indicators of good governance (Ahrens & Rudolph, 2006); (Lassa, 2011).

Wisner et.al. suggested ways of creating political will through good governance and economic incentives (Wisner, Kent, Gaillard, & Zen Delica Willison, 2011). Phon and Tinh (2010) also established that an enabling environment, which includes good governance at national and local levels, is indeed critical in ensuring effective implementations of DRR efforts within communities (Phong & Tinh, 2010). Funding or incentives is linked to political commitment and there is yet a widely agreed and acceptable method to assess DRR governance (Wisner, Kent, Gaillard, & Zen Delica Willison, 2011) (Phong & Tinh, 2010). These studies argue that weak governance prevents the poor’s access to natural resources and hinders them from securing climate-resilient livelihoods. Furthermore, Jones et. al. acknowledges that governance is linked to the effective execution of DRR, and
highlights that while countries may already have policies, frameworks and coordination mechanisms in place, a lack of political will renders them less effective (Jones, Oven, Manyena, & Aryal, 2014). Williams observed that a lack of political commitment and its subsequent impacts on institutional capacity hamper the effective implementations of DRR programmes (Williams, 2011). These studies argue that strong governance lead long-term vision, resources and authority is needed for DRR.

In fact, political will can be a rather flexible concept. At national and sub-national levels, political will exists beyond the domain of legislative power which in disaster management context often perceived as the key stakeholders who have been responsible in allocating and approving DRR budget. (United Nations, 2015a, p. 53). Such flexibility could be credited to the ways in which separation of powers are exercised in modern governance where executive branch of governments deal with planning and execution of disaster management policy; legislative governments deal with drafting disaster legislation and budgetary power including resource allocation and approvals; While judicial branch of governments deal with law enforcement and judicial power (Troper, 2012).

In conclusion, political will for DRR can be translated as a locus of initiative (e.g. level of governance and/or sectors of interventions); analytical rigour of risk analysis; strategy and programme designed thoughtfully; mobilization of support (i.e. including budget allocation) for DRR activities. In his subsequent work, Birkenhoff also highlights how allocated resources can serve as a measure of commitment, ownership and values and argues that ownership is reflected in “government initiative, carefully-thought through policies/programs, stakeholders mobilisation, public commitment and resources allocation, continuity of effort, and learning and adaptation” (Brinkerhoff D. W., 2007). These variables are similar to his earlier work wherein it is also emphasised on the influence of external factors such as demands, pressure, and incentives on influencing political will.

2.3. Linking Political Will with Governance and Governability

Scholars of disaster studies have increasingly been using ‘governance’ as crucial concept for disaster risk reduction. Going back to a decade ago, ‘disaster governance’ or ‘disaster risk governance’ have been barely defined when used in academic publication (Lassa 2011). The Hyogo Framework for Action neither mentioned word ‘disaster governance’ nor ‘disaster risk governance’ but simply ‘governance’ in three context: first, ‘good governance’ as a cross cutting issue (United Nations 2005, p. 1) which generally advocating the need for better disaster risk governability measured by government effectiveness and/or good bureaucracy, participation and accountability, media freedom and corruption control (Lassa 2011); Second, ‘governance’ as components of organisational framework, legal and policy frameworks (United Nations 2005, p. 2) which is a foundational concept behind the First Priority for Action of Hyogo Framework; And finally, ‘governance’ as a means for disaster risk reduction. (United Nations, 2005, p. 5)

Ten years later, the Sendai Framework has a special section on disaster risk governance (DRG) which becomes the Second Priority of the framework (UNISDR 2015, p. 15). DRG has been mentioned at least six times. DRG has been framed by Sendai Framework as conditions for an effective and efficient disaster risk management where disaster risk governability is set as “clear vision, plans, competence, guidance and coordination within and across sectors, as well as participation of relevant stakeholders, are needed” (UNISDR, 2015, p. 17) in the whole dimensions of disaster risk reduction and management.

Disaster governability is also closely related to DRR bureaucracies. In fact, disaster bureaucracies are not isolated from other arenas of governance and political influence, and
studies concluded that bureaucracy is one of the hardest arenas to reform (Hyden, Court, & Mease, 2003). DRR bureaucracy can either be disabling or enabling conditions for overall DRR outcomes (Lassa, 2011). Global measure of countries’ bureaucracy has been indicated by how fast and how effective business permit is regularly issued by governments (See Section 3.1). Measuring disaster bureaucracy can be done by using governance indicators such as government effectiveness.

3. Research Framework, Methods and Data

3.1. Research Framework

This effort to measure political will or commitment to a specific issue is not a new endeavour in social science and policy studies (see for example (Te Linteloo & Lakshman, 2015) (Te Linteloo, Haddad, Leavy, & Lakshman, 2014); (Brinkerhoff D. W., 2000) (Fox, Balarajan, & Cheng, 2015)). Nevertheless, it is the first exercise in disaster management studies with significant readjustment and improvement from previous work on institutional vulnerability studies (Lassa, 2011).

The paper demonstrates a viable method to measure political commitment and highlights the analytical importance of disentangling political will from disaster risk outcomes (PW-DRR index). Figure 1 assumes that DRR systems are nested in larger institutional and community systems. Therefore, political commitment to DRR is also embedded and nested within larger political and institutional settings of a country.

This study defines political commitment on disaster risk reduction (including climate adaptation) as a broad concept that can be measured quantitatively. Five variables presented to demonstrate DRR political includes: countries’ commitment to understand their disaster risk; governability of disaster risk, willingness to invest in risk reduction, bureaucratic promptness and preparedness; and finally political will to develop early warning systems (Figure 1) These variables are all contributed to form total ‘political will’ or the aggregation of commitment to reduce disaster risks that arise from natural hazards and climatic risk. In other words, the aggregation of political will - as shown by both policy and implementation – will serve as the predictors of disaster risk risks.

Table 1 suggests that political commitment to DRR starts from the first step: commitment to increase peoples’ understanding of disaster risk which can be measured indirectly (e.g. using human development index as well as access to basic education measured by length of studies) and directly (e.g. risk information sharing, DRR integration with school curriculum, public awareness raising and existence of national risk assessment).

Secondly, political commitment must be shown by the level of governability (in general or indirect measures – e.g. indicated by good governance variables such as civil society voice and governmental accountability, political stability, government effectiveness, regulatory quality, rule of law and corruption control (Wisner, Kent, Gaillard, & Zen Delica Willison, 2011) (Lassa, 2011). While direct measures of disaster governability are indicated by disaster legislation, civil society must be able to participate in disaster policy making and therefore it requires the existence of a multi-stakeholder platforms as stipulated by Hyogo Framework for Action as well as Sendai Framework for Action. Fortunately, the score-card data (i.e. HFA Progress – self-assessment reports) have been consistently provided by more than 160 countries in the last eight years. This study has coded at least 400 national progress reports submitted to UNISDR during 2009-2015.

Figure 1. Research Framework
Table 1. Variables and Indicators of Political Commitments for DRR

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sub-Variables</th>
<th>Indicators</th>
<th>Data Source / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment to understand risk</td>
<td>Ability to understand risk</td>
<td>Human Development Index (HDI)</td>
<td>UNDP database</td>
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<tr>
<td></td>
<td></td>
<td>Expected years of schooling (years)</td>
<td>World Bank database</td>
</tr>
<tr>
<td></td>
<td>Willingness to understanding risk</td>
<td>Risk information sharing</td>
<td>HFA data 3.1</td>
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<td></td>
<td></td>
<td>DRR Integration with school curriculum</td>
<td>HFA data 3.2</td>
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<td></td>
<td></td>
<td>Public awareness</td>
<td>HFA data 3.4</td>
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<tr>
<td></td>
<td></td>
<td>Existence of national risk assessment</td>
<td>HFA data 2.1</td>
</tr>
<tr>
<td>Governability of disaster risk</td>
<td>Governability</td>
<td>Voice and accountability</td>
<td>WB Governance datasets</td>
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<td></td>
<td></td>
<td>Political stability</td>
<td>WB Governance datasets</td>
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<td></td>
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<td>Government effectiveness</td>
<td>WB Governance datasets</td>
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<td></td>
<td></td>
<td>Regulatory quality</td>
<td>WB Governance datasets</td>
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<td>Rule of law</td>
<td>WB Governance datasets</td>
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<td></td>
<td></td>
<td>Corruption Control</td>
<td>WB Governance datasets</td>
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<tr>
<td></td>
<td>Disaster governability</td>
<td>Disaster legislation</td>
<td>HFA 1.1</td>
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<tr>
<td></td>
<td></td>
<td>Budget allocation</td>
<td>HFA 1.2</td>
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<td></td>
<td></td>
<td>CSO Participation</td>
<td>HFA 1.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>National platforms</td>
<td>HFA 1.4</td>
</tr>
<tr>
<td>Commitment to invest in DRR</td>
<td>Ability to invest</td>
<td>GDP, PPP</td>
<td>WB dataset</td>
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<tr>
<td></td>
<td></td>
<td>Insurance penetration</td>
<td>Global insurance – III</td>
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<tr>
<td></td>
<td></td>
<td>Catastrophe insurance penetration</td>
<td>Global insurance – III</td>
</tr>
<tr>
<td></td>
<td>Direct public investment</td>
<td>Integration of DRR to environment and climate policy</td>
<td>HFA 4.1.</td>
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<td></td>
<td></td>
<td>Social development</td>
<td>HFA 4.2</td>
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<td>Economic policy sector</td>
<td>HFA 4.3</td>
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<td>Building codes</td>
<td>HFA 4.4</td>
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<td>Disaster impact assessment in dev project</td>
<td>HFA 4.6</td>
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</table>
SFDRR is a guiding principle for interested parties to take the lead to prevent and reduce disaster risk through different mechanisms ranging from local to international. Implementing the Sendai Framework for Disaster Risk Reduction (SFDRR) requires not only strong political will but also strong administrative or bureaucratic support from public sector. This means public administration and bureaucracy must be key to deliver services that satisfy the goal of safety as stipulated by SFDRR.

Thirdly, political commitment in DRR must include public and private investments. Public investment includes allocating necessary resources at all level. While private investment includes promoting mechanism for risk transfer and insurance. Indirect measures for this are indicated by countries GDP (in PPP), insurance penetration, and catastrophe insurance penetration. The data used for the last variable is based on proxy data. While the direct measures are the public investment indicated by perception of nations on budget allocation, integration of DRR to environment and climate policy, social development, economic policy and governments’ perception, building codes as well as disaster impact assessment in development project (See Table 1 on data sources).

Fourthly, political commitment can enhance disaster preparedness. For this to happen, examination of promptness of bureaucracy in general proxied by the following indicators: time required to start a business (days); time required to get electricity and ease of doing business index. Direct measures for bureaucracy promptness in disaster context are indicated by existence of emergency management policy; tested contingency planning system; financial contingency plan and post disaster risk assessment system.

Finally, this study proposes measures of political will to establish disaster early warning systems as a separate variable. This depends on countries’ ability to invest in basic infrastructure for multi-hazard early warning systems (EWS) which proxied here by internet penetration and IT infrastructures.

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1 The data on catastrophe insurance penetration is based on Loss events worldwide 2013 overall and insured losses per continent published by MunichRe NatCatServe 2014. For the future, information at country level is necessary to improve the calculation of these metrics.
While direct measures as stipulated by Hyogo Framework for Action includes commitment to develop EWS and disaster monitoring system and dissemination.

The DRR-PW index can help the local actors and agencies to track and prioritise the efforts because it is developed based on relevant variables ranging from policy and legal frameworks as has been promoted by both SFDRR and HFA.

Direct measures in this research are based on more subjective measures as most member states view their progress based on their perception of progress. Data for indirect measures are more objective in nature as they are grounded on statistical data around the globe. Overall, there is a strong correlation between direct and indirect measures ranging from risk knowledge, disaster governability, DRR investment, disaster bureaucracy and early warning systems (Figure 3).

3.2. Methods and Data

This research produces a global datasets that can be used to monitor countries’ commitments in disaster risk management implementation. This research uses various secondary datasets to construct the index of political will and/or commitments (DRRPW Index) for 190s countries in five continents. Such perceptions on progress and commitments (Masset, 2011) have been well captured in more than 400 hundred countries’ progress report in implementing the Hyogo Reports for Actions during 2009-2015 wherein 166 reports have been used in this research. Only about 80 per cent of the reports have been updated during 2014/2015. For some countries such as Timor Leste and Tonga, the data on HFA progress of implementation is only available for the year 2011. A few countries such as Singapore only updated for 2009. Fortunately, many countries such as Indonesia and Lao PDR have been regularly updated during 2009, 2011, 2013 and 2015. In general this study argues that the data is still valid to use as a proxy of political and administrative commitments towards risk reduction. Overall, this report covers 190 countries from all the continents. In the absence of HFA progress reports, we rely more indirect measures as we assume that the selected variables in Table 1 can serve as variables for political will. Furthermore, as argued elsewhere that institutional and governance indicators could serve as predictors for disaster risks at country scale (Lassa, 2011).

This study also extracted data from two global datasets namely World Disaster Index (United Nations University) (WorldRiskReport, 2017) and Climate Risk Index (German Watch) (Kreft, Eckstein, & and Melchior, 2017). This study later developed composite risk indicators based on average value of both indexes (See Figure 2).

The scatter plot in Figure 2 shows the relative difference of world risk index (average risk of 2014 and 2015) and climate risk index (average risk 1996-2015). There have been some outliers to the data. For example, Tanzania has high risk measured by WRI (1.0 based on 2014-2015 average) but on an average it receives low CRI rate (0.06). Similar phenomenon can be seen in the case of Brunei Darussalam where it is marked as high risk by WRI (0.69) however its CRI rate is only 0.08. Likewise, some countries have high CRI rate but very low WRI rate (e.g. Macedonia – CRI 0.99, WRI 0.05; Vanuatu – CRI 0.91, WRI 0.14). However, overall, despite relatively low correlation (0.273) but it is still significant at 0.01 (2-tailed). In order to be very meaningful, global disaster risk measurements need to be improved.
3.3. Indirect Measures as Predictors

While varies across the plots (Figure 3), the findings from Figure 3 suggest that in general indirect measures can be good predictors for direct measures for DRR variables. General governance or governability variable can be a good predictor for disaster governability ($R^2 = 0.539$); Likewise, indirect DRR investment can be a good predictor for direct DRR investment measures ($R^2 = 0.550$). Indirect measure for risk knowledge can also be a good predictor for DRR knowledge ($R^2 = 0.482$). The General bureaucracy measure can be a predictor for disaster preparedness promptness of a country ($R^2 = 0.472$). For early warning system, direct measure in EWS has been weak predictor for early warning systems (Figure 3). However, we will use the EWS proxy measures such as access to relevant technologies as precondition for good EWS measures. The portion of EWS will not be discussed in this paper but a brief explanation can be seen in Section 4.6).
4. Results

4.1. Aggregation of Commitments for Disaster Reduction across the World

Political will for DRR (PW-DRR) index is the aggregation of five key variables as outline in Figure 1. Overall, the World’s PW-DRR level has been relatively equals the Asian nation in average. The Africa, Pacific, and Asia are the area where PW-DRR index are generally lower than 0.5 (Figure 4). While OECD and Europe have been the groups where PW-DRR is high followed by Europe followed by Southeast Asia (0.53) and Latin America and Caribbean nations (0.54).

![Political will index for disaster risk reduction in selected countries](image)

Source: Authors – Based on the analysis presented in Annex 1.

The result (Table 2) indicates that overall, countries have established disaster management bureaucracy and structures compared with commitment to invest in DRR and the development of early warning system.

Out of 194 countries, Figure 5 exhibits both top and lowest groups of countries with PW-DRR index. OECD group dominate the top 20 countries. While the lowest 20 group is dominated by African (e.g. Guinea-Bissau, South Sudan) and Pacific Island states (e.g. Nauru, Tonga, Papua New Guinea). Asian countries that are among the lowest ranked include Iraq, Myanmar and Yemen.

Sudan and South Sudan have experienced high political instability. Their overall disaster governability falls below the rest of the variables. Likewise, Asian countries such as Iraq and Myanmar are also included in low PW-DRR ranks and this could be carefully attributed to political stability and overall low governance variables.
Table 2. Political will for disaster risk reduction in selected regions

<table>
<thead>
<tr>
<th>Region</th>
<th>PW-DRR Index</th>
<th>PR-DRR Knowledge Index</th>
<th>DRR Governability</th>
<th>DRR Investment</th>
<th>Disaster Bureaucracy Index</th>
<th>EWS Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>0.50</td>
<td>0.57</td>
<td>0.53</td>
<td>0.32</td>
<td>0.73</td>
<td>0.36</td>
</tr>
<tr>
<td>Pacific</td>
<td>0.41</td>
<td>0.47</td>
<td>0.50</td>
<td>0.18</td>
<td>0.64</td>
<td>0.27</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>0.53</td>
<td>0.58</td>
<td>0.58</td>
<td>0.39</td>
<td>0.68</td>
<td>0.43</td>
</tr>
<tr>
<td>Africa</td>
<td>0.42</td>
<td>0.43</td>
<td>0.46</td>
<td>0.31</td>
<td>0.59</td>
<td>0.31</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>0.54</td>
<td>0.59</td>
<td>0.60</td>
<td>0.30</td>
<td>0.71</td>
<td>0.45</td>
</tr>
<tr>
<td>Europe</td>
<td>0.67</td>
<td>0.74</td>
<td>0.78</td>
<td>0.47</td>
<td>0.82</td>
<td>0.56</td>
</tr>
<tr>
<td>OECD</td>
<td>0.76</td>
<td>0.77</td>
<td>0.83</td>
<td>0.64</td>
<td>0.82</td>
<td>0.64</td>
</tr>
<tr>
<td>World</td>
<td>0.53</td>
<td>0.58</td>
<td>0.60</td>
<td>0.34</td>
<td>0.71</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Source: Authors

Figure 5. Political will for disaster risk reduction in selected countries

Source: Authors

How the difference is seen at regional level? It varies too. For example, in Southeast Asia, most Mekong River Commissions (MRC) member states with the exception of Vietnam perform the least in the political will index for DRR (PW-DRR). By all measures, Figure 6 exhibits that Singapore outperforms the rest of the ASEAN region. Investment in DRR (e.g., catastrophe insurance) is apparently low due to law demand driven by lack of exposure to natural hazards. Precise data is still not available. Nevertheless, the rest of hazard prone regions such as Indonesia, Philippines and Thailand also assert that private and public investment in DRR need to be boosted. Myanmar is overall the lowest ranked country in the PW-DRR index in ASEAN.

The good news is that most countries have successfully developed disaster legislation that
contributes to disaster governability and bureaucratic preparedness indices. It is apparently interesting to see some degree of asymmetry between these variables. For example, Malaysia, Indonesia, Philippines, Thailand and Cambodia and Myanmar have higher bureaucratic preparedness than overall disaster risk governability. Such asymmetric suggests that having public administration for disaster preparedness in place does not necessary equal having good disaster governability.

Figure 6. Political will for disaster risk reduction in ASEAN countries
Source: Authors
4.2. Political Will and Risk Knowledge

As promoted by SFDRR, addressing disaster risk requires commitments to understand risks at different levels and scales. Figure 7 exhibits commitments in understanding risk by showing variation of DRR Knowledge index around the globe. On a positive side, many parts of Latin America including Brazil, Peru and Columbia have shown high commitment in risk knowledge. Peru and Argentina have shown greater commitment to invest in risk knowledge compared with the rest of Latin America and Caribbean. With the exception of Bangladesh, disaster hotspots countries in Asia such as China, India, Indonesia have shown relatively good commitment in DRR knowledge. However, the rest of Africa remains the pocket area where commitments in DRR Knowledge need improvements. In Asia, low commitment in DRR knowledge can still be seen in Cambodia and Burma.

4.3. Political Will and Disaster governability

Without governability, disaster risks will neither be managed nor reduced. OECD countries exhibits better disaster governability index. Many Asian nations including Indonesia, Vietnam, and Thailand need to improve from modest level of disaster governability (Figure 8). Countries such as Burma and Cambodia exhibit the lowest rank in terms of disaster governability. In Africa, the countries such as South Africa, Botswana, Namibia and Mozambique have been experiencing high DRR governability. However, North-Western African nations such as Sudan, Mauritania, Mali, Sierra Leone and Guinea-Bissau require more commitments to reduce disaster risks.
4.4. Commitment in DRR investment

Overall, private and public investments in DRR remains the least achieved amongst all regions. Pacific displayed the lowest commitments in DRR investment (0.18) followed by Latin America and the Caribbean states (0.30), Africa (0.31) and Asia in general (0.32). The Pacific has low penetration of insurance and disaster insurance as well as public investment in social development, disaster mitigation and low economic performance. Research has recently shown that public investment is related to lack of proper tax system in the region (Murray, Oliver, & Wyatt, 2014).

Interestingly, Pacific, Asia (with exception of Southeast Asia), Africa and Latin America groups have been under the world average in terms of public and private investments in DRR sector. Meanwhile, this variable is also seen as the areas to be improved in Europe and OECD countries.

Investment in DRR is crucial. However, it is a challenge for many small island developing states (SIDS) in the Pacific and Caribbean States where the capacity to invest is limited and private sectors have been vulnerable to natural hazards. Disaster losses could cause existential threats to most SIDS. For example, in the event of Hurricane Maria on 18 September 2017, the Commonwealth Government of Dominica reported total damage and loss of 226 per cent equivalent of 2016 GDP (CGoD, 2018). This phenomenon was well recognized in the Global Assessment Report 2015 where SIDS - including the Pacific Island Countries have been experiencing “20 times more of their capital stock each year and annual losses that is equivalent to almost 20 per cent of their total social expenditure, compared to only 1.19 per cent in North America and less than 1 per cent in Europe” (United Nations, 2015b, p. 74).

4.5. Political Will and Disaster Bureaucracy and Early Warning System

Compared with the rest of the variables (Section 4.2-4.6), disaster bureaucracy is the variable where most countries perform well (global average 0.71) with most Europe and OCED sets highest rank for disaster bureaucracy (0.82) (See Table 2). Africa has the lowest disaster bureaucracy index (0.59) followed by Pacific Island Countries (PIC) (0.64). Asia and Latin America have relatively the same level of rating in this variable.

These results are not surprising because one of the reasons why these trends are quite predictable is...
because almost all disaster management bureaucracy and administrative systems are nested in and have been integral part of countries governance and institutional systems.

Countries are to increase their commitments in early warning systems (EWS). Figure 3 and Table 2 suggest that EWS is the sector of lowest commitment across nations. Pacific is the most vulnerable and most exposed regions to hydro-meteorological hazards (Kreft, Eckstein, & and Melchior, 2017) unfortunately, the region has the lowest EWS rating (0.27) followed by Africa (0.31) and Asia (0.36). Therefore, Asia in general, Pacific and Africa are still falling behind EWS development compared to the rest of the world.

However, it is also important to note that even in OECD countries, EWS needs improvement. Due to the limitation of the space, the authors will discuss the findings on political will for EWS in a different article.

5. Limitation

Authors of this research are mindful of the potential limitation of this method. The measurement of disaster risk and vulnerability as outcomes of institutions and political will might not be sufficiently proved simply because of the problem of attribution as there are many factors contributing to risk level including disaster mortality, losses and damages as well as existing vulnerabilities. Furthermore, using observational data often prevent us from concluding a direct link between political will and disaster risk level (Lesk, Rowhani, & Navin, 2016). The authors recognise that having political will does not always translated into policy reform and real life on the ground but without it there will no sustainable change seen on the ground.

More qualitative and quantitative research on political will is necessary. We recommend further studies on political commitment in DRR from around the globe by systematically coding countries progress in implementing Sendai Framework for Disaster Risk Reduction.

6. Final Remarks

In the authors’ view, one of the conceptual gaps within the Sendai Framework is that DRG is treated as separate priority (United Nations, 2015a) and it is not clearly seen as an overarching concept to achieve the goals set in all the priorities. Political will or political commitment to certain social affairs often linked to governance as clearly highlighted in the last UN World Conference on Disaster Risk Reduction (WCDRR) that gives birth to the Sendai Framework (United Nations, 2015a). In brief, the two last WCDRRs have explicitly recognised the importance and recognition of the political will as means to pave the way for the genesis of disaster legislation which could lead to creating systematic efforts to reduce disaster risks (United Nations 2015a, Lassa 2011, p. 9).

Finally, one must be aware of the question why political will for DRR is important. Very often DRR governability becomes an issue because governments have been constrained by lack of political commitment partly because of limited resources and there are competing development problems and issues to be prioritised.

Do the findings imply that being rich or richer means being safer? At first glance, yes. Richer countries seem to perform better than poorer ones. The authors nevertheless advocate that countries that have good institutions generally have better institutions which
allow them to perform better in terms of DRR (Lassa 2011). While being mindful of the variation across the countries, the authors argue that countries with better institutions tend to have stronger political commitments to disaster risk reduction.

The question is: Can political will for DRR (PW-DRR) index be used to predict the outcomes of disaster risk? Figure 9 exhibits three scatter plots. The Figure 9 (left-hand) exhibits political will for DRR and climate risk index. The centre figure shows scatter plots between PW-DRR and world risk index 2014-2015. These figures suggest very low association between political will and risk levels by both measures (climate risk and disaster risk). Even when both are combined both risk indices as a composite index (right-hand side Figure), the association remains low. But the insights is that the composite risk has higher association than the first two risk indices.

It is very difficult to prove statistically because of at least two facts. First, disaster risk or risk levels are updated annually. Hazard events are often updated more regularly. For examples, the global datasets on climate risk index rating produced by German Watch change rather dramatics on annual basis. While institutional change and perception of disaster risk often occur at longer timescales. Commitment from political leaders is required to ensure local implementation of DRR. Unfortunately, traditional belief shared by some political leaders that disasters are acts of gods punishing the sinful human beings have been held for millennia up to this modern time (Lassa, 2011). Discursive change that led to the shifts in political framing of disaster causality as a product of vulnerability often require new voices from progressive groups such as civil society (Lassa, 2011).

Attribution problem can be prone to be politicized by interested stakeholders. For example, existing governments can claim credits if the outcome is positive and can be blamed if the outcome is negative. However, this fairness issue (proper claim and blame) needs to be investigated in detail. We argue that such measurement is important in the sense that it serves as a mirror that produces stick and carrot effects. Governments will maintain status quo if the existing policy and political will measures are acceptable and sufficient to deal with the degree of risks they face. If the opposite is true, then the government can use the metric as a chance to improve their risk reduction measures or the other relevant stakeholders such as not only NGOs/CSOs but also ‘opposition governments’ and legislative agencies can use it to pressure the government for increasing political will in addressing the disaster risks.
Figure 9. Political will for disaster risk reduction in selected countries

Bibliography


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