



INPUT PAPER

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**THE NEED FOR AN INTEGRATED MULTI-FACETED APPROACH TO DEVELOP  
PUBLIC AWARENESS STRATEGIES ON DRR**

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## 1 Background

The Global Assessment Report for 2011 (GAR, 2011) included several background papers which stressed the importance of governance in effecting change in DRM practices. For example, a thorough discussion was provided on the **effect of political economy considerations on effecting change in DRM** (Williams, 2011). In addition, the International Risk Governance Council produced a seminal White Paper on risk governance (IRGC), **which proposed a risk governance framework that distinguishes between analyzing and understanding a risk** (Technical and Social Assessment Stage) – for which risk appraisal is the essential procedure; and deciding what to do about a risk, where risk management is the key activity (IRGC, 2005). A more detailed review of work carried out by various authors on the importance of governance and accountability in effecting DRM change was presented in a background paper to GAR 2013 (Hamdan 2013 a & b). The latter paper combined the political economy framework for analyzing change (Williams 2013) with the risk governance framework (IRGC, 2005) in order to arrive at **a framework for analyzing incentives and resistance to change during different stages in the risk governance framework** (i.e. the five stages in the risk governance framework as developed by the IRGC, namely Risk Pre-Assessment Stage, Risk Appraisal Stage, Risk Evaluation Stage and Risk management Stage, all of which centred around the Risk Communication Stage).

In this paper, the above methodology will be used to identify how **awareness raising strategies can be developed, while accounting for good risk governance principles, in order to contribute to effecting change in DRM practices.**

## 2 Selection of Countries and Key Characteristics

A group of countries, with different governance and development characteristics, is selected for analyzing their respective and comparative performance in the development and implementation of awareness raising campaigns, as reported by the HFA national reporting template. The countries range from industrialized countries with very high development indicators, to developing countries with high, medium and low development indicators.

Table 1 below shows the Human Development Index for 2012 (UNDP, 2013), together with Inequality adjusted figures, for the selected countries.

Country	Human Development Index (HDI)	IHDI (accounting for Inequality)	Loss (%) in potential human development due to inequality
USA	0.937	0.821	12.4
Germany	0.920	0.856	6.9
France	0.893	0.812	9
Italy	0.881	0.776	11.9
UK	0.875	0.802	8.3
Chile	0.819	0.664	19
Lebanon	0.745	0.575	22.8
Sri Lanka	0.715	0.607	15.1
Algeria	0.713	Not Available	Not Available

Country	Human Development Index (HDI)	IHDI (accounting for Inequality)	Loss (%) in potential human development due to inequality
Dominican Republic	0.702	0.510	27.3
Jordan	0.7	0.568	19.0
Thailand	0.69	0.543	21.3
Egypt	0.662	0.503	24.1
Philippines	0.654	0.524	19.9
Morocco	0.591	0.415	29.7
Pakistan	0.515	0.356	30.9
Yemen	0.458	0.31	32.3
Haiti	0.456	0.273	40.2
Djibouti	0.445	0.285	36.0
Comoros	0.429	Not Available	Not Available

**Table 1** Human Development Statistics for selected countries

An important issue is the losses in the human development index due to inequality, as indeed measured by the original UNDP study (UNDP, 2013). This is particularly important since there is a trend to adopt a holistic approach post 2015 with closer integration of sustainable development and growth, disaster risk management and climate change adaptation initiatives. In this context, it becomes important to be able to raise awareness and measure the aggregate effect of inequality (including all aspects related to DRM with emphasis on the distribution of disaster risk losses) on the development process and corresponding achievements.

Table 2 shows ranking of various governance indicators (Kaufmann et al, 2010), using six broad dimensions of governance as follows: voice and accountability, political stability and absence of violence / terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption.

Country	Voice and accountability	Political stability	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
USA	1.12 / 86	0.63 / 68	1.51 / 90	1.29 / 88	1.6 / 91	1.38 / 89
Germany	1.38 / 93	0.77 / 71	1.57 / 93	1.53 / 92	1.64 / 92	1.78 / 94
France	1.22 / 90	0.55 / 64	1.33 / 88	1.11 / 83	1.43 / 90	1.42 / 90
Italy	0.89 / 74	0.50 / 63	0.41 / 66	0.73 / 75	0.36 / 62	-0.03 / 58
UK	1.32 / 92	0.41 / 60	1.53 / 92	1.64 / 95	1.69 / 93	1.64 / 92
Chile	1.04 / 80	0.35 / 59	1.25 / 87	1.54 / 93	1.37 / 88	1.56 / 91
Lebanon	-0.42 / 35	-1.65 / 6	-0.34 / 43	-0.12 / 47	-0.75 / 27	-0.87 / 22
Sri Lanka	-0.60 / 30	-0.71 / 23	-0.24 / 46	-0.12 / 48	-0.11 / 52	-0.24 / 52
Algeria	-0.91 / 23	-1.34 / 9	-0.55 / 34	-1.29 / 9	-0.79 / 26	-0.54 / 36
Dominican Republic	0.05 / 53	0.23 / 55	-0.55 / 35	-0.14 / 47	-0.70 / 30	-0.83 / 23
Jordan	-0.73 / 27	-0.52 / 30	-0.04 / 54	0.18 / 57	0.37 / 63	0.07 / 61
Thailand	-0.34 / 37	-1.21 / 13	0.21 / 61	0.23 / 58	-0.17 / 50	-0.34 / 47
Egypt	-0.74 / 27	-1.48 / 8	-0.77 / 25	-0.49 / 33	-0.45 / 40	-0.57 / 34
Philippines	-0.04 / 48	-1.16 / 15	0.08 / 58	-0.06 / 52	-0.55 / 36	-0.58 / 33
Morocco	-0.61 / 29	-0.46 / 32	-0.04 / 53	-0.09 / 50	-0.19 / 49	-0.41 / 42
Pakistan	-0.87 / 24	-2.68 / 1	-0.79 / 23	-0.73 / 25	-0.91 / 19	-1.06 / 14
Yemen	-1.39 / 9	-2.43 / 1	-1.28 / 9	-0.70 / 27	-1.27 / 8	-1.23 / 8
Haiti	-0.80 / 25	-0.79 / 21	-1.63 / 2	-0.95 / 21	-1.34 / 7	-1.24 / 6
Djibouti	-1.42 / 8	0.17 / 52	-1.10 / 14	-0.44 / 35	-0.78 / 27	-0.38 / 45

Comoros	-0.53 / 31	-0.39 / 35	-1.55 / 3	-1.42 / 8	-1.03 / 16	-0.73 / 26
Notes						
1. Figures in Cells are Estimate / Rank						
2. Rank 0 is the lowest (worst) and 100 is the highest (best).						
3. Estimates of governance ranges approximately from -2.5 (weak) to + 2.5 (strong).						

**Table 2** Governance Statistics for selected countries

Table 3 shows disaster losses (EM-DAT, 2013a), under five broad hazard categories: geophysical, Meteorological, hydrological, Climatological and biological.

Country	Geo-physical	Meteo- rological	Hydro- logical	Climato- logical	Bio- logical	Total (Billion US\$)	Cost of Top ten / Total Cost
USA	41.90167	568.91951	56.63626	67.0791	0	734.536540	0.47
Germany	0.062	20.6303	13,6596	1.95	0	36.3019	0.78
France	0	25.54105	7.30364	6.792	0	39.63669	0.79
Italy	49.287952	3.3799	24.71481	3.822601	0	81.205263	0.88
UK	0.06	13.555	19.10023	0	0	32.7152	0.76
Chile	34.62707	0.0093	0.7556	1.135	0	36.5270	0.95
Lebanon	0	0.155	0.01	0	0	0.165	1
Sri Lanka	1.3165	0.1943	0.980564	0	0	2.4914	0.98
Algeria	10.270929	0	1.543917	0	0	11.8148	1
Dominican Republic	0	2.79791	0.059503	0.006	0	2.863413	0.97
Jordan	0	0	0.0034	0.4	0	0.4034	1
Thailand	1	0.911039	44.89842	0.424	0	47.2335	0.95
Egypt	1.2	0.001	0.155	0	0	1.3560	1
Philippines	0.76368	8.956033	3.312236	0.064453	0	13.0964	0.5
Morocco	0.52	0.00005	0.3302	0.900909	0	1.7512	1
Pakistan	5.229755	1.715036	19.38618	0.247	0	26.5780	0.97
Yemen	0	0	1.6115	0	0	1.6115	1
Haiti	8.02	1.286906	0.001959	0.001	0	9.3099	1
Djibouti	0	0	0.005719	0	0	0.005719	1
Comoros	0	0.042804	0.005	0	0	0.0478	1
Notes							
1. Geophysical hazards include earthquakes and tsunamis, volcanoes and dry mass movements. Meteorological hazards are mainly storms. Hydrological hazards include floods and wet mass movements, Climatological include extreme temperature, drought and wildfires, biological include epidemics, insect infestation and stampede.							
2. In several instances, there are reports of disasters without any corresponding monetary values.							

**Table 3** Direct Economic Cost of disasters (billion US \$) 1900 - 2013

### 3 Methodology

Table 4 summarizes the salient features in the Hyogo Framework for Action (HFA) Monitoring Template (UNISDR, 2013), according to Priority for Action 3 (PoA 3), Core Indicator 4 (CI 4), Key Questions (KQ) and corresponding Means of verification (MoV). Answers within the different national reports will be used to analyze inter-relationships between governance systems and development situations with DRM awareness raising strategies.

HFA PoA	Core Indicators (CI)	Key Questions (KQ)	Means of Verification (MoV)
HFA PoA 3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels	CI 4: Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities	KQ 1: Do public education campaigns for risk-prone communities and local authorities include disaster risk?	Public education campaigns for enhanced awareness of risk
			Training of local government
			Disaster management (preparedness and emergency response)
			Preventative risk management (risk and vulnerability)
			Guidance for risk reduction
			Availability of information on DRR practices at the community level

**Table 4** HFA Core Indicators and Corresponding Key Questions and Means of verifications

Notwithstanding the importance of the indicators and questions in the national monitoring template, examination of the core indicators in **Table 5 shows that most of these refer to inputs** (e.g. policies and strategies in place). Indeed a limited number of questions address **outputs** such as the impact of awareness raising campaigns on the adoption of National Schools Safety Programs and the adoption of corrective risk management strategies for the most vulnerable communities, households, livelihoods and sectors.

In the case of national school safety programs, there is evidence that countries adopting such a program have successfully avoided large numbers of fatalities and damages in the education sector. In the case of corrective risk management strategies, there is unanimous evidence that such strategies even if more costly than prospective risk management strategies are still cost-effective especially when applied to reduce (or “correct”) the accumulated risk in the most vulnerable livelihoods, households, dwellings, infrastructures, sectors and communities. Hence there is a need to devise effective awareness raising strategies capable of effecting DRM change in these two fundamentally important domains.

## 4 Analysis

### 4.1 Effect of Development Stage on Awareness Raising Strategies for DRM

The effect of development situations on awareness raising strategies for DRM is summarized in Table 5, which shows the overall score for HFA PoA3 CI4. In particular, the following conclusions can be made:

- There is a general trend for HFA scores to improve with improved HDI scoring.
- Regarding MoV1 (Public education campaigns for enhanced awareness of risk), most countries embark on public education campaigns even those that have not yet carried out a Multi-Hazard Vulnerability and Risk Assessment.
- Regarding MoV2 (Training of local government), this is more prevalent for very high and high development countries. However it should be recognized that countries train local governments on awareness raising strategies often before allocation resources for DRM

at the local level, and without carrying out a local level gender disaggregated capacity, hazards, vulnerability and risk assessment.

- Awareness raising on disaster management (preparedness and emergency response) (MoV3), is more prevalent in most countries except those with low human development indices. However, several countries reporting the existence of preparedness and emergency response awareness raising strategies without grounding those on gender disaggregated needs and vulnerabilities.
- Awareness raising on preventive risk management (risk and vulnerability) (MOV4), again more prevalent for higher development indices, is often carried out without having completed a multi hazard risk and vulnerability assessment.
- Guidance for risk reduction (MoV 5) is reported in various countries, especially with higher development indices, however it is believed that this does not usually address the social, economic, institutional, natural and physical factors that contribute to risk nor does it sufficiently address the main risk drivers (i.e. poverty, environmental degradation, unchecked urban expansion and weak governance and weak risk governance in particular).
- Availability of information on DRR practices at the community level (MoV6 is more prevalent for very high human development countries.

Country	Human Development Index (HDI)	HDI Loss (%) due to inequality	HFA3, CI4, KQ1, MoV1	HFA3, CI4, KQ1, MoV2	HFA3, CI4, KQ1, MoV3	HFA3, CI4, KQ1, MoV4	HFA3, CI4, KQ1, MoV5	HFA3, CI4, KQ1, MoV6
USA	0.937	0.821	1	1	1	1	1	1
Germany	0.920	0.856	1	1	0	0	0	1
France	0.893	0.812	1	1	0	0	0	1
Italy	0.881	0.776	1	1	1	1	1	1
UK	0.875	0.802	1	1	1	1	1	1
Chile	0.819	0.664	1	1	1	1	0	0
Lebanon	0.745	0.575	1	1	1	1	1	1
Sri Lanka	0.715	0.607	1	1	1	1	1	1
Algeria	0.713	Not Available	1	0	0	0	1	0
Dominican Republic	0.702	0.510	0	1	1	1	0	1
Jordan	0.7	0.568	1	1	1	1	1	0
Thailand	0.69	0.543	0	0	0	0	0	0
Egypt	0.662	0.503	1	1	1	1	1	1
Philippines	0.654	0.524	1	1	1	1	1	1
Morocco	0.591	0.415	0	1	1	0	0	0
Pakistan	0.515	0.356	1	1	1	1	1	0
Yemen	0.458	0.31	0	1	0	0	0	0
Haiti	0.456	0.273	1	1	0	0	0	1
Djibouti	0.445	0.285	1	1	1	1	0	0
Comoros	0.429	Not Available	0	0	0	0	0	0

**Table 5** Effect of Development Situation on Awareness Raising Strategies for DRM in selected countries

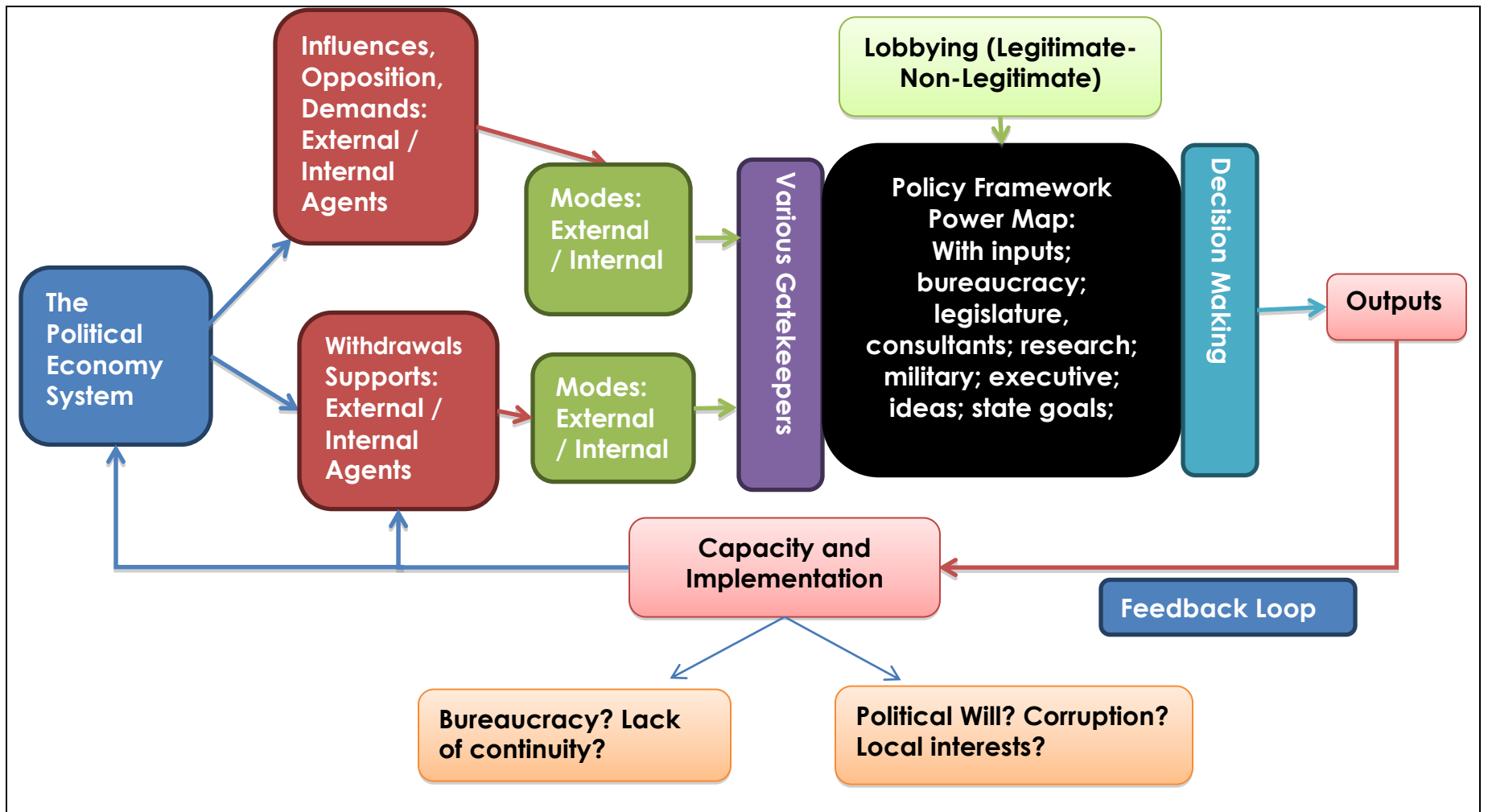
## 5 Discussion

The analysis showed trends of increased efforts in developing awareness raising strategies with improving development category. However, several of the issues related to the development of awareness raising strategies cannot be assessed by examination of the national HFA monitoring template. The soundness of awareness raising strategies in terms of their effectiveness, inclusiveness, transparency and accountability is best developed for each specific risk governance stage, as shown in **Error! Reference source not found.**, based on definitions given and Table 7, reproduced from the background paper (Hamdan, 2013) and references therein [(Williams, 2013) and (IRGC, 2005)]. This methodology recognizes that awareness raising strategies should not be restricted to issues related to physical and natural vulnerability, but must encompass social, economic and institutional factors contributing to vulnerability.

Risk Governance Stage	Adopting a N SSP for improving Resilience in Schools	Adopting corrective risk management strategies for reducing risk in vulnerable communities, infrastructure, households, sectors and livelihoods
Pre-Assessment Stage:	Has the N SSP been flagged as a solution to school vulnerability in the pre-assessment stage? Was the awareness of national and local decision makers raised on this issue? Was the awareness of the general public raised on the decision making process at this stage which may have included or excluded the adoption of a N SSP?	Has corrective risk management been flagged as a solution to vulnerable communities, sectors and households in the pre-assessment stage? Was the awareness of national and local decision makers raised on this issue? Was the awareness of the general public raised on the decision making process at this stage which may have included or excluded the adoption of corrective risk management?
Technical and Social Assessment Stage:	Has awareness been raised on the importance of assessing the physical, natural, social, economic, and institutional factors that contribute to risks in schools and the education sector in general? And does the assessment include a societal assessment that accounts for the apprehensions and concerns of society including those related to aversion to societal risk which may lead to large number of fatalities?	Has awareness of public and decision makers been raised on the importance of carrying out a technical and societal risk assessment of vulnerabilities, risks and estimated losses within vulnerable communities, households and sectors? Does any awareness raising strategies include raising awareness on the views of vulnerable communities regarding their risks and vulnerabilities, and corresponding estimated potential losses corresponding to various hazards?
Evaluation Stage:	Was the awareness of the general public and decision makers raised on the criteria implicitly or explicitly adopted to judge level of unacceptable and tolerable risk levels in schools?	Was the awareness of the general public and decision makers raised on the criteria implicitly or explicitly adopted to judge level of unacceptable and tolerable risk levels in vulnerable communities, households and sectors?
Management Stage:	Are there any awareness raising strategies to raise awareness of public and decision makers on how to reduce risk to practicable levels and the implied cost benefit analysis decisions including the cost of saving a student / teacher human life?	Are there any awareness raising strategies to raise awareness of public and decision makers on how to reduce risk to practicable levels and the implied cost benefit analysis decisions including the cost of saving a human life?
Communication Stage:	Is awareness raising seen as a one way strategy by decision makers and is their awareness being raised on the importance of incorporating social apprehensions and concerns?	Is awareness raising seen as a one way strategy by decision makers and is their awareness being raised on the importance of incorporating social apprehensions and concerns?

**Table 6** Sample questions to be used for guiding the development of awareness raising strategies





**Figure 1** The Political-Economy Framework for Understanding and Analysing Drivers of Change

Risk Governance Stage	Description
Pre-Assessment Stage:	This stage frames the risks, identifies the perspectives of various stakeholders on risks and the major assumptions and methodologies for assessing the risk, through a four step process: 1. Risk framing which underlines a common understanding of risk, 2. Early warning and monitoring of risks, 3. Risk pre-screening models and practices and corresponding capability requirements, and finally, 4. Selection of major assumptions, methods, conventions and procedural rules for assess the risk and associated societal concerns. The nature of the decision making process within any political economy, as elaborated in political economy analysis framework shown in Figure 1, will play an important role in determining the outcome of this stage. For example, in some cases vested interests may influence gatekeepers to prevent risk signals arising from certain economic activities from being recognized. In addition, risks may be wrongly perceived to have local rather than national consequences. In addition, the views of certain stakeholders (e.g. those living in resource rich regions or in urban slums) may be ignored.
Technical and Social Assessment Stage:	This stage comprises both a scientific risk assessment (hazard frequency, exposure and consequences); and a societal concern assessment (including associations, societal benefits and risks) which must inevitably account for gender considerations. A flawed decision making process may lead to scarcity in collating and analyzing data and / or misuse of such data regarding a particular risk (related to both scientific assessment and societal concerns). It may also lead to inadequate addressing of societal and stakeholder concerns.
Evaluation Stage:	This stage is intended to ensure that evidence based on scientific facts is combined with societal values considerations when judging the tolerability of risk according to three main categories: i) Acceptable where further risk reduction is considered unnecessary; ii) Tolerable where the level of risk may be acceptable due to its benefits, but subject to appropriate risk reduction measures and considerations; and Intolerable where the level of risk must be reduced, irrespective of cost. A flawed DRR decision making process may lead to a lack of agreement and sufficient discussion on the value of saving a human life (which is at the core of the tolerability judgment). It may also lead to inadequate attention given to societal concerns regarding the issue of multiple fatalities
Management Stage:	All tolerable risks will need balanced and adequate risk management practices (comprising compensatory, prospective and corrective approaches) and financing strategies for risk reduction (comprising retain and reduce, insure or transfer the risks). A flawed DRR decision making process may lead to i) an underestimation of the benefits of various risk reduction measures, ii) a delineation of responsibilities as to the entity responsible for managing the risk, iii) a lack of regulatory mechanisms for allocating resources and ensuring implementation, iv) a focus on compensatory or prospective approaches without sufficient emphasis on corrective risk reduction, v) a focus on risk insurance of transfer without sufficient emphasis on risk retention and reduction.
Communication Stage:	Communication and coordination with all stakeholders is implicit to all stages within the risk management framework. Furthermore, once the risk management decision is made, communication should explain the rationale for the decision and allow citizens / stakeholders to make informed choices about the risk and its management, including their own responsibilities. A flawed DRR decision making process may result in i) a one-way rather than two-way information sharing process, ii) communication, participation and coordination not being commensurate to the risk level and risk category, iii) communication may be wrongly used as a substitute to the collation of stakeholders' perceptions of acceptable and intolerable risks.

**Table 7** Salient Features of the Risk Governance Framework

## 6 Recommendations for Future Work

There is a need to continue the analysis in order to cross examine answers of HFA CI4 MoV 1 through to 6, against answers from other Priorities for Action and other national and local characteristics. In particular, the following should be examined further:

- HFA PoA 3 core indicator 4 compared against progress in developing disaster databases.
- HFA PoA 3 core indicator 4 compared against ratios of extensive to intensive disaster losses and the adoption of strategies by governments to address both types of risks.

- HFA PoA core indicator 4 compared against progress in achieving climate change resilience and reducing poverty.
- HFA PoA core indicator 4 compared against gender disaggregated strategies and policies.

Furthermore, the proposed methodology for developing awareness raising strategies on the importance of adopting national schools safety programs and corrective risk management strategies should be further elaborated and contextualised to specific countries. This would then allow the development of step by step procedures for the development of such strategies that promotes and disseminated best practice.

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