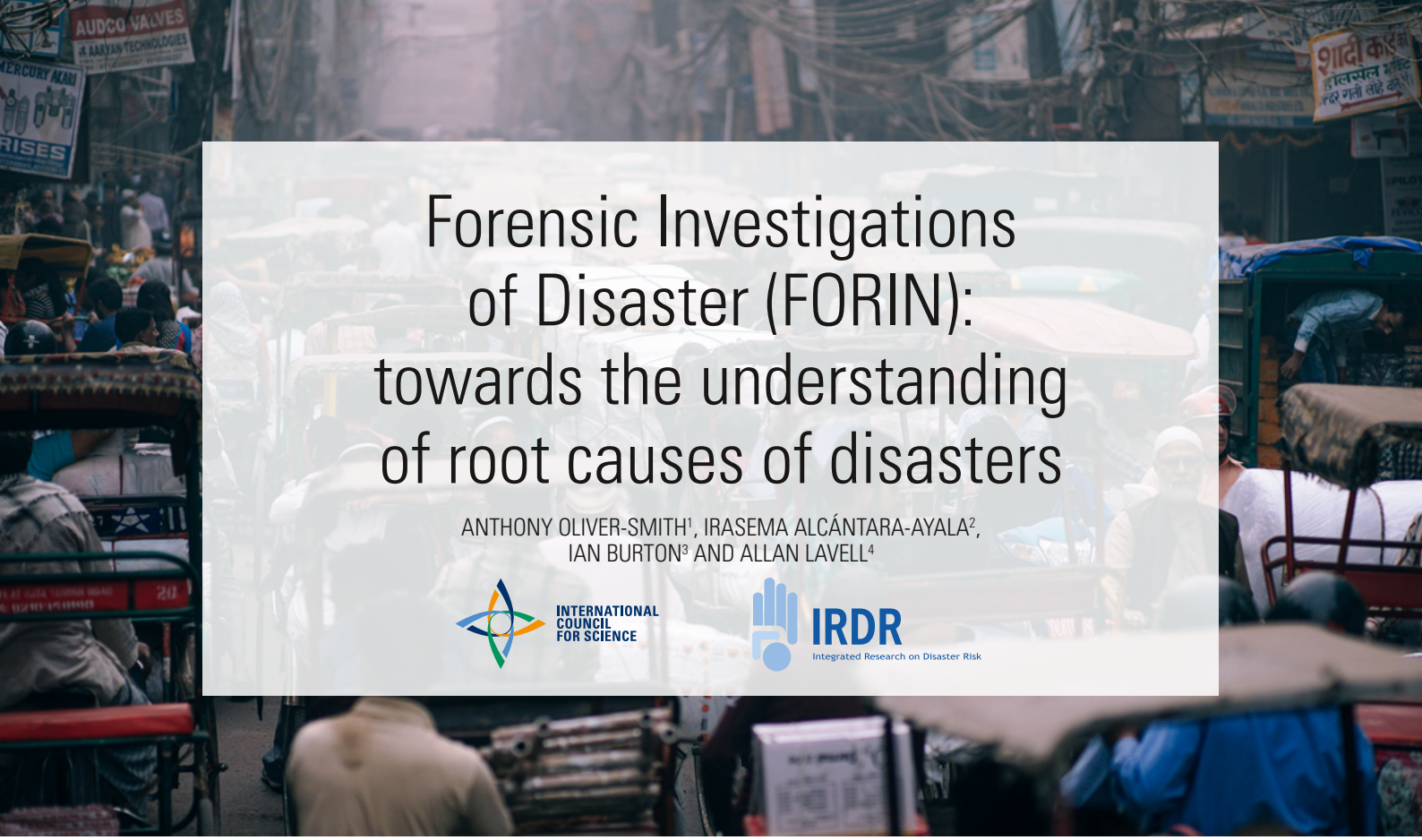

Forensic Investigations of Disaster (FORIN): towards the understanding of root causes of disasters

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Integrated Research on Disaster Risk

INTRODUCTION

The Sendai Framework for Disaster Risk Reduction made progress in shifting the focus of research and practice from managing disasters to managing risks in the face of ever-rising impacts and occurrences of disaster. However, this effort still remains to be translated into practice. To accomplish this transfer, research and methodologies, institutional change, and multi-stakeholder partnerships are needed on the ground to develop the necessary holistic view on risks and disaster. Despite efforts at the international level, including the Sendai Framework and the work of the UNISDR, losses from extreme events continue to mount. The response to this is to emphasize the need for more and better disaster risk reduction (DRR) based on a clear understanding of root causes and risk drivers of disaster risk creation. Disaster risk reduction tends to operate at the local and national scales, but disaster risk creation takes place at the macro scale of society, environment, economy and policy. The present pattern and process of economic growth and development is unsustainable partly because more risks are being created than reduced. The FORIN project of the IRDR programme focuses on precisely the root causes and risks drivers in the process of disaster risk creation.

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FORIN POLICY RECOMMENDATIONS

1. Identify and mitigate the systemic, structural underlying root causes and risk drivers at global, national and local levels. Identifying and analyzing processes of risk construction must involve a wide range of underlying causes and drivers which participate in the social creation of disaster risk.
2. Shift from the perspective of "extreme events" in terms of natural or physical magnitude towards "high impact events and contexts", (which are of often small- and medium-scale events that take place in societies with high levels of vulnerability and exposure) where analysis of the social conditioning factors associated with risk should be a priority.
3. Shift from the all-but-exclusive focus on the disaster site to greater attention to the multiple sites where both policies and practices are developed and outcomes play themselves out. Since spatial and temporal scale analyses are co-dependent in that the further the analysis goes back or prospectively forward in time, the wider the spatial/institutional dimensions of causality must become.
4. Causes must be linked with effects to identify policies or practices that can manage processes of risk construction informed by awareness of the trade-offs inherent in any process of risk management.
5. Identify steps, actions and policy changes that fully integrate institutional and social dynamics, behaviours, norms and values to link DRM to the wider development portfolio, and move towards transformation.
6. Formally embed responsibilities for Disaster Risk Reduction in legal frameworks of national governments, to bring those interests and forces that construct risk to accountability.
7. Create bridges among all the various stakeholders to achieve common understanding and enable the kind of close communication that is necessary for holistic, integrated and participatory research and practice in Disaster Risk Reduction through root cause and risk driver analysis.

Context

Although the SFDRR calls for greater effort at tackling underlying risk drivers (para.6), the failure to continue the attention paid to underlying causes as a global priority is a concern.

- Large, medium and small scale disasters are becoming more frequent, and damage and loss continue to increase at a rapid rate. They are not confined to poorer countries, although they do impact poorer people disproportionately in rich and poor countries alike.
- The understanding of risk and disaster is still severely impeded by visions of "natural" disaster, the dominance of the physical factors affecting risk and the marginalization of fundamental social processes.
- Disaster risk management practice is still very much dominated by reaction, response and emergency management, to the detriment of development-based risk reduction and avoidance interventions. Similarly, research into the topic is still dominated by disciplinary approaches and overly concentrated on physical hazards and events and the more immediate causes of loss and damage.
- The efforts to reduce and control damage and loss are outweighed by the processes that generate new risk in our societies.
- Within the private sector and government, other mechanisms and concerns undoubtedly work in favor of disaster response over risk reduction and control concerns. For governments, it is commonly recognized that response receives far higher political rewards than does risk reduction or disaster mitigation.
- Physical triggering events of a disaster can vary widely, but the existence of approaches to development that privilege economic growth over social and environmental values and priorities is a key factor in their occurrence.
- Most development policies and practices today foster approaches that more deeply embed current environmental relations, power and wealth differences and exploitation.

Key considerations for implementation

Human decision-making is shaped by many forces and pressures, both as incentives and constraints. Structures themselves are social constructs and thus are based on human decision-making and choices. Disasters are systemic, processes that unfold over time. Their causes are deeply embedded in societal history, structure and organization, including human environmental relations.

The magnitude of losses and damage can in large part be explained by human actions and choices when faced with physical hazard, including the choice to ignore them or dismiss their significance. In addition to the increasing inequalities that characterize most complex societies, there are many social processes underway that lead to particular "risk drivers" or dynamic conditions that accentuate existing or create new forms of risk at all levels.

Risk drivers rarely operate as single factors, but rather in combination with others, usually in non-linear fashion, to cause disasters. In this context, to measure the reduction of vulnerability and exposure, the indicators of progress of the Sendai Framework should be integrated rather than approached as isolates because we need an integrated management of disaster risk which in turn requires integrated and holistic territorial management and planning.

Disasters are common expressions of underlying processes that need to be understood if disaster risk, its reduction and control, are to be better managed. In this sense disasters are not confined by boundaries of time and space. Their causes entangle quickly with deeper-lying social and economic, cultural and political problems and their impacts are prolonged, with further complication.

Since both the causes and effects of disasters are found in the nexus between human communities and their environments, Forensic Investigations of Disasters (FORIN) must also be transdisciplinary, engaging and involving the various stakeholders fully in the research enterprise. The major purposes and objectives of FORIN can only be achieved if the research is strongly and continuously engaged with locally involved communities, as well as with policy and practice. FORIN research requires the careful examination of basic social, cultural, economic and political assumptions among all participants that underlying the decisions made in standard development strategies and projects that contribute to the continuation or reproduction of root causes and risk drivers. Policies, practices and tools must be critically assessed for their potential contribution to the construction of risk.

FORIN Case Study: Changing Land Use, Disaster Risk and Adaptive Responses in Upland Communities in Thailand

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The Forensic Investigations of Disaster (FORIN) research approach was used in Northern Thailand to investigate the inter- relationships between land-use changes and adaptive capacity to climate risk. Participatory scenario-based analysis conducted among four indigenous villages indicated the necessity of community planning concerning future climate risk(s) and livelihood enhancement. The FORIN framework was selected as a conceptual basis because of its ability to trace the root causes of disaster risk within the larger institutional- and implementation gaps that often hinder the successful application of DRR knowledge.

The study highlighted numerous climate hazards facing villagers, including flash floods, heavy rainfall, temperature extremes, and prolonged drought. These ethnic minority communities (consisting of Lua, Lahu, Thai Yai, and Karen people) under study are located in National Park and Forest Reserve areas, and the limitations of their livelihood options make them especially vulnerable to climate risk. At the same time, official agricultural policy is often formulated for the country as a whole, not differentiating between different geographical areas, which can lead to unintended adverse consequences for land use in upland communities. The study found that the recent land-use changes and increasing dependence on mono-culture crops planted on sloping land have rendered them more vulnerable to non-climate-based shocks including pest outbreaks and market-price fluctuations.

The root causes of disaster risk are therefore hardly hazard-driven, and interwoven land-use, agricultural policies and other broader socioeconomic development trends affect risk in these regions. This supports the FORIN responsibility hypothesis which states that 'Responsibility for the continued growth in vulnerability and exposure is locally specific and diffuse over individuals, organizations, jurisdictions, and over time.' As such, reduction of disaster risk requires systematic understanding of, and collective attention to address, these interlinked causes. Overall, study found the need for further public support in the form of agricultural extension tailored to specific local context, community-based forest management, diversification and other livelihood strategies that would help to promote the resilience of these forest-dependent communities.

Adapted from Backman et al. 2015
http://idrimjournal.com/index.php/idrim/article/view/83/pdf_11

Key considerations for monitoring progress

The key parameter for monitoring progress should be a clear expression of transformative institutional strategies targeting the reduction of exposure and vulnerability in terms of well-being, equality and socio-environmental harmony within an integrated management of territory. Such parameters require qualitative and quantitative measures informed by an integrative perspective, rather than as separated variables, as are those established for the SFDRR.

Different levels of vulnerability may be identified by the distribution of loss and damage across different areas, social groups, types of infrastructure and modes and means of production.

- Key pre-disaster variables ninclude the link between livelihood and human vulnerability, with the manifest, immediate, symptomatic causal factors, such as: building collapse with loss of life or loss of livelihood inputs and support infrastructure; loss of transport and energy infrastructure and its impact on livelihoods, health and employment, etc.
- Post-impact relief and rehabilitation processes and the degree to which they were just, equitable and efficient with regard to different social groups and their needs is also an expression of vulnerability as well as the role of the existing political agenda in the response and rehabilitation processes.

The level of resilience of the affected community should be assessed and measured to the degree possible. The focus should be on resource access pathways available to the community that facilitated an adequate response to the events as well as the performance of material components (housing and infrastructure).

A significant factor will be any notable differences in the ability of different social and economic groups to face up to and recover from the disaster and its secondary impacts in which the role of social organization, social ties and networking in building resilience will be central in the capacity of the community to organize and work on its own behalf to adequately respond to the disaster, recover and reconstruct their livelihoods and lives. What were the defining characteristics of their vulnerability and, on the other hand, their resilience, when faced with damage and loss?

A key component of resilience will be the existence of appropriate legislation at national and local levels, including additional regulations such as building codes, degree of enforcement and their specificity on risk management issues, as well as policies and programmes and organizations at various administrative levels such as insurance availability and requirements, risk or emergency management, and the degree to which disaster risk management was integrated into other policy-relevant areas as urban and land use planning.

However, more underlying causal analysis is required if we are to understand other deeper social structures and dynamics at play, for instance economic interest and competing values and goals, corruption, lack of capacities and trained public servants, and other factors.

Our contribution

Attempts to advance development-based understanding of disaster risk construction and accompany this with innovative organizational and institutional approaches have been severely hampered by the expansion and amplification of already existing, response-dominated structures and logics, fueled even more by increasing disaster impacts, damage and loss. A vicious circle of lack of prevention, future increased losses and then increased demand for response occurs.

In light of this continuing situation, the Integrated Research on Disaster Risk programme – jointly supported by ICSU, ISSC and UNISDR – developed a project called Forensic Investigation of Disasters (FORIN) focused on research on root and underlying causes of disasters. FORIN research focuses on demonstrating with strong evidence that disaster risksare socially constructed. The principal contributing causes of disaster risk should be clearly identified along with ways in which they can be reduced or avoided through in-depth analysis that ties structurally-based root causes into causal chains to the active social drivers of risk that result in the unsafe conditions that place people in harm's way. For example, the research guidelines provided by the FORIN project have been used to reveal the underlying causes and risk drivers in the Haitian earthquake and Metro Manila's risk of flood in the context of climate change (Oliver-Smith et al. 2016).

FORIN research articulates why causality should be the basic rationale of disaster risk reduction practice. Therefore, disaster risk reduction and control must be permanently and organically integrated into development planning decision-making and economic and social growth in all countries. Distinguishing between inevitable and evitable consequences in the root cause – risk driver equation is fundamental because, whilst DRM can hope to resolve the evitable relations, it cannot hope to resolve the underlying structural dependencies and causal relations. The latter requires fundamental changes in the development paradigm that go far beyond the mandate of DRM specialists and practitioners.

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