Book of Abstracts

Ensuring Accountability in Disaster Risk Reduction and Reconstruction

Hilton Residence, Colombo, Sri Lanka
8th December 2015

ENSURING ACCOUNTABILITY IN DISASTER RISK MANAGEMENT AND RECONSTRUCTION

Book of Abstracts

Edited by

Professor Siri Hettige, Professor Dilanthi Amaratunga
and Professor Richard Haigh

Colombo, Sri Lanka, 8th December 2015

Professor Siri Hettige, Professor Dilanthi Amaratunga and Professor Richard Haigh
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Ensuring Accountability in Disaster Risk Management and Reconstruction
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Foreword

The workshop on "Accountability in Disaster Risk Management and Reconstruction" is organized as a part of a global, regional and national partnership by SPARC, University of Colombo-Sri Lanka and Global Disaster Resilience Centre (GDRC), University of Huddersfield-UK, and Essex Accounting Centre, University of Essex-UK in association with University of Moratuwa and University of Peradeniya Sri Lanka, International Journal of Disaster Resilience in the Built Environment, Asian Disaster Preparedness Center (ADPC) (TBC), Collaborative Action towards Disaster Resilience Education (CADRE), Federation of Sri Lankan Local Government Authorities. This is also in support of UNISDR Making Cities Resilient campaign and Sendai Framework for Disaster Risk Reduction 2015-2030.

The main question that the workshop addresses is how to ensure accountability in Disaster Risk Management and Reconstruction. We attempt to answer this question in the light of papers on, accountability of government and other institutions in preventing and managing disasters, tools of accountability and access to information, role of the organised and capable citizen groups in establishing social accountability, contextual and cultural appropriateness of the accountability tools and accountability in the built environment after major disasters. It is expected that, the workshop outcome that includes research findings and key policy discussion points will be incorporated into policy decisions by the apex body of Disaster Management in the country, namely the National Council for Disaster Management (NCDM) Chaired by H.E. the President. The Ministry of Disaster Management is responsible for policy formulation and providing necessary guidance to the relevant agencies such as Disaster Management Centre (DMC), Department of Meteorology, National Building Research Organization (NBRO), and National Disaster Relief Services Centre (NDRC). It is helped that the present workshop will contribute to a greater understanding of the issue of accountability in DRR efforts on the part of national and local institutions.

Professor Siri Hettige
Senior Professor of Sociology, University of Colombo, Sri Lanka

Preface

Ensuring accountability in disaster risk management and reconstruction

Disasters due to natural hazards are becoming more frequent and more devastating in almost all parts of the world. This situation calls for better disaster preparedness and greater readiness to minimize adverse impacts of disasters. Once a disaster strikes, the prudent management of its aftermath can facilitate quicker recovery and restoration of normal life for the affected individuals and communities. Yet, all these depend on the actions of many stakeholders such as governments, various state institutions, national and international non-governmental organizations, private businesses and community groups. On the other hand, actual outcomes of various interventions depend on a range of factors such as resources, planning, coordination, quality control and monitoring. So, the life chances of potential and actual disaster victims depend on the performance of a whole range of institutions.

An important question that arises is how we could optimize performance of key stakeholders. In this regard, institutionalizing effective accountability mechanisms appears to be the way forward. The accountability mechanisms are supposed to play a key role in different phases of disaster management cycle: response, recovery, rehabilitation, reconstruction, prevention, mitigation and preparedness. The absence of such mechanisms has reduced the effectiveness of interventions in many situations.

As is well known, accountability is an integral aspect of good governance. Yet, in many countries accountability rarely goes beyond financial accountability. While financial accountability is important to eliminate corruption and wastage of public resources, and ensure that benefits reach the intended target groups, the measures of financial accountability do not go far enough to ensure the satisfaction of the needs of disaster victims, both potential and actual. Some critics claim (Bakers, 2014) that the failure of accountability in collaborative working (collaborative accountability) is caused by the lack of communication. Others have stated that accountability cannot meet the criteria that have been set such as vertical and horizontal accountability and social accountability to the victims and civil society organizations (Taylor, et. al., 2014). It is this reality that calls for an enlargement of the scope of accountability to include the concerns of the beneficiaries. In general, what is necessary is develop bottom up accountability tools in order to measure the actual impact of external interventions in terms of their outcomes on the ground.

Any investigation of the outcomes of external interventions following a disaster would reveal the nature and extent of recovery in terms of relief, resettlement, livelihood, community building, access to services, etc. According to new Sendai Framework for Disaster Risk Reduction 2015-2030, it is also important to look at related accountability issues within the pre-disaster phase as there is more emphasis now on disaster risk reduction, and what we could do to prevent disasters and/ or to minimize losses. As highlighted in the Sendai Framework "Words into Action" accountability in disaster risk reduction is intended to enable scrutiny and understanding of actions taken at different levels, and of those responsible for such actions. Article 19(e) of the Sendai Framework articulates the principle that disaster risk reduction depends on coordination mechanisms within and across sectors, full engagement and clear responsibilities of all State institutions and stakeholders, to ensure mutual accountability

Many shortcomings that may be present might have been avoided if there were effective accountability mechanisms built into the intervention program. Moreover, a comprehensive social audit following the implementation of an intervention program could help rectify weaknesses of an intervention provided such a mechanism was built into the disaster management plan of a government or any other institution.

It is against the above background that we propose to organize a workshop in December 2015 in Colombo with the participation of disaster risk management experts and state and non-state

stakeholders to deliberate on and develop a possible framework for social accountability to be considered for inclusion in a national disaster management plan.

The workshop aims to address following empirical questions in the context of social accountability in disaster management.

- To understand the role of government agencies, NGOs and public/citizen groups in pre and post disaster social accountability mechanisms.
- To discuss the possibilities of culturally and politically suitable strategies and programmes to promote the institutionalisation of social accountability in disaster management with reference to disasters such as tsunami, floods, landslides, cyclones, etc
- To discuss the role of accountability in facilitating the collaboration among the government agencies, civil society organizations, NGOs from beging passive reciepient of relief to active proponents of Disaster Risk Reduction (DRR)
- To understand the accountability tools that can be used to monitor the disaster management priorities, implementation of policies and programmes and the outcomes; Detail mapping of institutional responsibilities and tasks in disaster mitigation and prevention.
- To explore social accountability tools that can be used to measure the impact of DRR interventions in the context of built environment

It is hoped that incorporating social accountability into disaster management would improve significantly the outcomes of external interventions leading to an improvement of life chances and quality of life of potential and actual victims of disasters.

We focus attention on a number of key themes. They are:

1. Accountability of government and other institutions for their conduct and performances in preventing and managing disasters
2. Tools of accountability and access to information
3. Role of the organised and capable citizen groups in establishing social accountability
4. Contextual and cultural appropriateness of the accountability tools
5. Accountability in the built environment

Accountability of government and other institutions for their conduct and performances in preventing and managing disasters

The government is responsible for establishing the combination of the set of laws, rules, practices and cultural mores to prevent and management disasters in any given political and economic situation. Therefore any assessment on what agencies do to reduce disaster risks highlighting mechanisms to explicit accountability become important. As assessment of institutional performance in DRR measuring of institutional response, mapping and assessing institutions accountability against each disaster type is crucial for improving resilience of the communities.

The government officials are presumed to be accountable for their conduct and performance in terms of delivering better services, improving vulnerable (disaster prone) people's welfare, and protecting disaster victims. For example, the role of implementing agencies is to complement the government effort in reaching out to the communities to be better prepared for responding to disasters in the interest of vulnerable communities.

Tools of accountability and access to information

For an efficient social accountability mechanism in disaster management, the availability, reliability and accessibility of relevant data/information is an essential issue. The tools, such as

participatory budgeting, social audit, citizen record card and surveys can be used to measure the level of constructive engagement between the disaster management institutions, citizens and victims of natural disasters. Accountability tools can be used to measure how the disaster management institutions identify priorities, implement policies and programmes and also programme outcomes.

Role of the organised and capable citizen groups in establishing social accountability

The capacity of civil society actors and grass-root level NGOs is a key factor for the successful implementation of social accountability mechanisms in disaster management. The civil society capacity can be shaped by various individual and contextual factors, such as organization of civil society groups, their technical and advocacy skills, their awareness and capacity to mobilize resources, their ability to use media and to strengthen their legitimacy are all central to the success of social accountability action. In many contexts, efforts to promote an enabling environment for civil society and to build the capacity (both organizational and technical) of grass-root level groups are required. For example, addressing constraints and opportunities for enhancing the transparency and accountability of post disaster reconstruction activities with vertical and horizontal accountability mechanisms become important. Thereby, citizen involvement in monitoring DRR progress (based on locally conceived priorities) at every scale, including policy formulation and implementation become equally important.

Contextual and cultural appropriateness of the accountability tools

Effectiveness of the tools for social accountability in disaster management is largely determined by existing contextual and cultural conditions. The social accountability action must respond to and operate within the larger context and under a framework covering the sectors, gender, local governments, etc. A due consideration should be given to the specific political, gender based, socio-cultural, legal and institutional factors and differences in accountability capacity. For example, in the context of Early Warning(EW), appropriateness of EW systems for facilitating proactive responding of diverse individuals (for example based on gender and ethnicity) in the communities at immediate risk.

Accountability in the built environment after major disasters

In the aftermath of a major disaster, the challenge of reconstructing the built environment is formidable. The vital role of the built environment in serving human endeavours means that when elements of it are damaged or destroyed, the ability of society to function – economically and socially – is severely disrupted (Haigh and Amaratunga, 2011). Disasters have the ability to severely interrupt economic growth and hinder a person's ability to emerge from poverty. The protective characteristics of the built environment offer an important means by which humanity can reduce the risk posed by hazards, thereby preventing a disaster. Conversely, post-disaster, the loss of critical buildings and infrastructure can greatly increase a community's vulnerability to hazards in the future. Finally, the individual and local nature of the built environment, shaped by context, restricts our ability to apply generic solutions.

After a disaster, there tends to be a greater emphasis on developing a more resilient built environment. This will only occur when we design, develop and manage context sensitive buildings, spaces and places that have the capacity to resist or change in order to reduce hazard vulnerability, and enable society to continue functioning, economically and socially, when subjected to a hazard event (Haigh and Amaratunga, 2011).

Achieving such goals is not easy. Citizens' needs and demands are high and urgent. Governments are under extreme pressure to produce fast results, working with greater resources than they are accustomed to managing. Supporting multiple approaches to ensure the efficient and transparent use of funds and that hold a government accountable to end results will not only enhance that

government's legitimacy in the eyes of its citizens and the international community, but will also guarantee a better targeted, higher quality, and more sustainable development.

The responsibility of a transparent reconstruction process does not fall on governments alone. Civil society plays a fundamental role in raising awareness, establishing and contributing to priorities, and monitoring progress. Individuals need to take on their responsibility as active citizens building a better tomorrow rather than seeing themselves as disaster victims and recipients of aid (Maza, 2010). There needs to be support towards a variety of institutional strengthening initiatives, non-governmental activities, and external control mechanisms to oversee the use of funds. Inefficiencies often arise due to mismanagement or inexperience rather than ill intentions. Accordingly, implementation counterparts should be selected for their experience and management capacity.

To develop transparency and accountability in post disaster reconstruction efforts, there is a need to work with countries to create and strengthen mechanisms and programs for reconstruction with the integrity, independence, and the necessary oversight to inspire the confidence of citizens and donors. Transparency and accountability mechanisms in reconstruction need to address: institutional strengthening of government agencies charged with procurement, execution and oversight; independent oversight mechanisms to respond to donors' requirements; and, greater citizen participation in developing and monitoring reconstruction activities. There is evidence to show that where formal mechanisms to make contractors accountable to the local community were created, the quality of construction was better and people's satisfaction higher (Barenstein, 2012).

Further, with the increasing trend of urbanisation, social responsibility in the built environment has become essential in improving social resilience. Exploring social accountability tools, in particular those that can be used to measure the impact of disaster risk reduction interventions in a community's built environment, plays an important role . The imperative of sustaining public trust and the complexity of governance demand strong accountability mechanisms. This is to assure that the governments and other parties (local and global communities) managing disaster response carry out their commitments. Whether the parties act under obligation or out of humanitarian concern, their efforts need to be sustained until public well-being and the social fabric are restored. Strong accountability mechanisms will lead to better planning and budgeting, and better coordination.

Acknowledgements

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We express our sincere thanks to Prof. P.S.M. Gunaratne, Vice Chairman, University Grants Commission, Sri Lanka for accepting our invitation to grace the inaugural session of the workshop.

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Organising committee, Workshop on Ensuring accountability in disaster risk management

Workshop organisation

Organised by

Social Policy Analysis and Research Centre (SPARC), University of Colombo, Sri Lanka
Global Disaster Resilience Centre, University of Huddersfield, United Kingdom
Essex Accounting Center, University of Essex, United Kingdom

In association with

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University of Peradeniya, Sri Lanka
International Journal of Disaster Resilience in the Built Environment, Emerald Publishing
Collaborative Action towards Disaster Resilience Education (CADRE)
Collaborative Action towards Societal Challenges through Awareness, Development, and Education (CASCADE)
Federation of Sri Lankan Local Government Authorities

In support of

UNISDR Making Cities Resilient Campaign
Sendai Framework for Disaster Risk Reduction 2015-2030

Organising committee

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Ms Kushani De Silva, University of Huddersfield, United Kingdom

Social Policy Analysis and Research Centre (SPARC), University of Colombo, Sri Lanka

Social Policy Analysis and Research Centre (SPARC) of the Faculty of Arts, University of Colombo, provides a focal point within the Sri Lankan University system to integrate research, teaching, training, policy analysis and advocacy on critical areas of social and economic development. The Centre facilitates close collaboration between the academics and institutions outside the University system, including governmental as well as non-governmental agencies that deal with issues related to social policy.

The establishment of SPARC in 2005 culminated a process that was set in motion at the Colombo University with the launching of the "Improving Capacities for Poverty and Social Policy research' (IMCAP) in late 2000, a staff and student development programme to strengthen skills of younger academics from different social science backgrounds on poverty and social policy analysis and research. The Centre builds on IMCAP's achievements, but broaden its activities and contributions to the University. The Centre coordinates teaching, training and research on social development and provides accessible, comprehensive empirical data to formulate evidence based social policy recommendations and programmes to support social integration processes in Sri Lanka.

The Centre conducts research in a number of focal areas.

- Socio-Economic Security, Gender Equity and Social Integration of Youth
- Community Based Poverty Monitoring, Social Impact Assessment and Conflict Sensitive Development Planning
- Local Governance, Development and Civic Participation

These focal areas are reviewed from time to time in keeping with new experiences gained and emerging issues of the country.

University of HUDDERSFIELD
Inspiring tomorrow's professionals

Global Disaster Resilience Centre, University of Huddersfield, UK

A leader in multi-disciplinary research, education and advocacy to improve the resilience of nations and communities

What would it be like to live in a world in which government authorities, businesses, communities and individuals work together to create a society that is able to withstand the effects of unforeseen events and threats? At the Global Disaster Resilience Centre we are working with stakeholders at the global, national, municipal and local level to make this happen.

The Global Disaster Resilience Centre is committed to excellence in research, education and advocacy to improve the resilience of nations and communities to disasters.

With growing population and infrastructures, the world's exposure to hazards is increasing. When disaster strikes, communities may need to be rebuilt physically economically and socially. At the same time, it is vital that any reconstruction activity pro-actively considers how to protect people and their environment, and reduce a community's vulnerability.

The Global Centre for Disaster Resilience is part of the School of Art, Design and Architecture at the University of Huddersfield in the UK. In November 2013, the University of Huddersfield was awarded the Times Higher Education University of the Year. The University excels in enterprise and innovation and in 2012, was named the Times Higher Education Entrepreneurial University of the Year.

Research themes

- Disaster resilience
- Understanding disaster risk
- Contingency planning and resource management
- Private sector engagement in the development of disaster resilience
- Public private partnerships in disaster risk reduction
- Capacity building for disaster mitigation and reconstruction
- Risk management and sustainability
- Post-conflict reconstruction
- Social impact of reconstruction
- Public policy, governance & procurement
- Improved disaster resilience through social media interaction
- Community maturity for improved disaster resilience

International activities

The Centre contributes to national and international committees to advise and guide on strategic and technical issues pertaining to disaster management. The Centre also provides leadership in actively helping to determine the research direction of the field, with a major International journal, periodic conferences and events, and frequent publication of cutting edge research in refereed journals, which are acclaimed nationally and internationally.

Recent projects

The Centre's members are very experienced in obtaining European research councils funding. They lead and contribute to major collaborative international research projects that involve partners across the globe. Some examples include:

- *ANDROID (Academic Network for Disaster Resilience to Optimise educatIonal Development) – a partnership with 67 international partners*

- *CASCADE (Collaborative Action towards Societal Challenges through Awareness, Development and Education) – an international partnership with 17 partners*

The Centre is keen to develop future projects that address societal challenges and international cooperation, inclusive, innovative and secure societies, support for bilateral, multilateral and bi-regional policy dialogue, and networking and twinning activities to facilitate partnering and competence building.

PhD programme

The Centre's PhD programme lays the foundations of inquiry that are relevant to disaster management. Researchers benefit from its strong research culture and there are strategies in place to ensure PhD research is of the highest quality and can achieve sustained growth. The Centre has defined principles that are applied throughout its work.

Protocols are designed to ensure researchers have sufficient time, authority and responsibility to conduct and develop their activities. This mechanism is also designed to maximise the opportunity to invest in and nurture researchers under the mentoring of senior researchers.

International Journal of Disaster Resilience in the Built Environment

ISSN: 1759-5908
Editors: Professor Richard Haigh and Professor Dilanthi Amaratunga
Frequency: 5 issues per year
Indexed in Scopus
Website: www.emeraldinsight.com/ijdrbe

The journal aims to further knowledge and understanding of the link between the built environment and disaster mitigation, response and reconstruction. The journal seeks to:

- Develop the skills and knowledge of the built environment research community and professions working in disaster prone areas, so that they may strengthen their capacity in strategic and practical aspects of disaster prevention, mitigation, response and reconstruction
- Provide a unique forum for novel enquiries into the development and application of new and emerging practices as a source of innovation to challenge current practices
- Promote the exchange of ideas between researchers, educators, practitioners and policy makers
- Influence disaster prevention, mitigation, response and reconstruction policies and practices

International conferences

The Centre organises interdisciplinary conferences and seminars that promote innovation and knowledge exchange on disaster resilience between Higher Education and relevant stakeholders. Members of the Centre established the International Conference on Building Resilience Series in 2008. Most recently, the 4th International Conference on Building Resilience was held from 8th - 11th September 2014, at MediaCityUK, Salford, in the United Kingdom (www.buildresilience.org/2014).

For more information about our research, teaching and advocacy, please contact:

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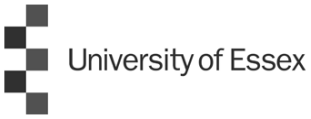

Essex Accounting Center (EAC), University of Essex, United Kingdom

Essex Accounting Centre produces theoretical and empirical research at the forefront of the field of accounting. Its work is interdisciplinary, drawing on religion, sociology, law, politics, government and organisational studies to inform public policy and solve real-work problems for organisations across the globe in the private, public and third sectors.

It has strong links with professional accountancy bodies, such as the Association of Chartered Certified Accountants (ACCA), Institute of Chartered Accountants in England and Wales (ICAEW) and Institute of Chartered Accountants of Scotland (ICAS). Our research has been supported by a number of grants from organisations, such as the British Academy, Nuffield Foundation, Economic and Social Research Council (ESRC) and Chartered Institute of Management Accountants (CIMA). It also works closely with British Accounting and Finance Association special interest group, Accounting and Finance in Emerging Economies, as well as the Centre for Global Accountability.

It publishes cutting-edge research across four broad themes: accounting and economic development, accounting and public and third sectors, regulation and corporate social responsibility.

It is at the leading-edge of national and international research into the specific accounting and accountability problems currently faced in emerging economies. We explore a wide range of issues in accountability theory and practice, both in the UK and internationally.

It aims to contribute to the current understanding of accountability from multidisciplinary and global perspectives and inform public policy.

Its research projects focus on participation and global accountability issues in the field of disaster reduction, e.g. research projects in New Zealand, India and Sri Lanka. It believes stakeholder participation and accountability are important issues in long-term development and humanitarian relief.

CASCADE (Collaborative Action towards Societal Challenges through Awareness, Development, and Education)

Highlighted by the European Commission report (2012) on 'Enhancing and focusing EU international cooperation in research and innovation', global challenges are important drivers for research and innovation. Thus, the EU needs to strengthen its dialogues with international partners to build critical mass for tackling these challenges. However, critical mass is lacking in many cases and the strategy driving the development of the actions is not always clear. This was one of the conclusions of the FP7 interim evaluation, which stated that there needs to be an 'intensification of international cooperation' activities focused on 'engaging with partners outside of Europe on equal terms and in programmes and activities of high mutual interest'. The same report recommended the 'coherent strategic development 'of the Union's policy for international cooperation in research and innovation. Therefore, this action will, overall, aim to achieve the main objectives of the European Commission (2012) for International cooperation in research and innovation:

1. Strengthening the Union's excellence and attractiveness in research and innovation as well as its economic and industrial competitiveness by creating win-win situations and cooperating on the basis of mutual benefit; by accessing external sources of knowledge; by facilitating access to new and emerging markets; and by agreeing on common practices for conducting research and exploiting the results;
2. Tackling global societal challenges by developing and deploying effective solutions more rapidly and by optimising the use of research infrastructures;
3. Supporting the EU's external policies through international cooperation in research and innovation as an instrument of soft power and a mechanism for improving relations with key countries and regions.

In this context, the *overall objective* of CASCADE (Collaborative Action towards Societal Challenges through Awareness, Development, and Education) is to prepare ground for a future research programme that targets South Asian Countries and promotes bi-regional coordination of Science & Technology (S&T) cooperation, including priority setting and definition of S&T cooperation policies.

The specific objectives of CASCADE are to: compile a regional position paper that identifies global challenges and research priorities; map and develop an inventory of national and regional stakeholders related to global challenges; and, raise awareness on research & innovation priorities for fostering cooperation and towards building mutual understanding on how to address common global societal challenges. CASCADE targets and has the participation of all South Asian countries specified in the call: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

Objectives of the project

1) Identify societal challenges on which to focus the cooperation and justify them in terms of common interest and mutual benefit relevant to the targeted countries in Southern Asia. In this context, following broad Horizon 2020 - The Framework Programme for Research and Innovation will be considered:
   a) Health, demographic change and wellbeing;

b) Food security, sustainable agriculture, marine and maritime research and the bio-economy;
c) Secure, clean and efficient energy;
d) Smart, green and integrated transport;
e) Climate action, resource efficiency and raw materials;
f) Inclusive, innovative and secure societies

2) Provide up to date analytical evidence on key stakeholders and their competences in Southern Asia
3) Support, where relevant, the training and extension of the network of FP Contacts in the region, in particular with the view of increasing awareness about cooperation opportunities offered by Horizon 2020

S&T objectives and measurable outputs

The overall objective of CASCADE is to prepare ground for a future INCONET programme that targets South Asian Countries and promotes bi-regional coordination of S&T cooperation, including priority setting and definition of S&T cooperation policies.

The specific objectives of CASCADE are to: compile a regional position paper that identifies global challenges and research priorities; map and develop an inventory of national and regional stakeholders related to global challenges; and, raise awareness on research & innovation priorities for fostering cooperation and towards building mutual understanding on how to address common global societal challenges. CASCADE targets and has the participation of all South Asian countries specified in the call: Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka.

The objectives are linked to an interacting set of work packages and measurable / verifiable outputs. In addition to the 3 RTD work packages (WP2 – Identify global challenges relevant to Southern Asia; WP3 – Identify and map stakeholders in Southern Asia; WP4 – Raise awareness of Horizon 2020 and related schemes) and there are 2 further work packages dealing with project management (WP1) and dissemination and exploitation (WP5).

Participants

University of Salford (USAL)	UK
University of Huddersfield (HUD)	UK
University of Central Lancashire (UCLAN)	UK
Tallinn University of Technology (TUT)	Estonia
Vilnius Gediminas Technical University (VGTU)	Lithuania
University of Bologna (UNIBO)	Italy
Fondation pour la recherche stratégique (FRS)	France
Nangarhar University (NU)	Afghanistan
Patuakhali Science and Technology University (PSTU)	Bangladesh
Royal Institute of Management (RIM)	Bhutan
Institute of Engineering, Tribhuvan University (IOE)	Nepal
Volunteers for Development Nepal (VFD)	Nepal
University of Peshawar (UoP)	Pakistan
Local Councils Association of the Punjab (LCAP)	*Pakistan*
University of Moratuwa	Sri Lanka
Federation of Sri Lankan Local Govt. Authorities (FSLL)	Sri Lanka
Asian Disaster Preparedness Center (ADPC)	Thailand (presence in all targeted countries)
ECO CARE (ECO)	Maldives

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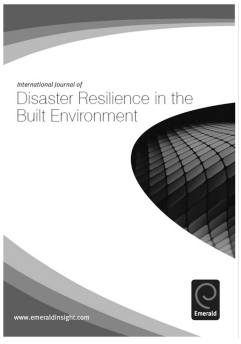

International Journal of Disaster Resilience in the Built Environment (IJDRBE)

ISSN: 1759-5908

Editors:
Professor Dilanthi Amaratunga & Professor Richard Haigh
Global Disaster Resilience Centre, University of Huddersfield, UK

This is the only journal in the field to promote research and scholarly activity that examines the role of building and construction to anticipate and respond to disasters that damage or destroy the built environment. Although the origins and causes of disasters are varied, the consequences to human society are frequently similar: extensive loss of life, particularly among vulnerable members of a community; economic losses, hindering development goals; destruction of the built and natural environment, increasing vulnerability; and, widespread disruption to local institutions and livelihoods, disempowering the local community. In particular, it aims at developing the skills and knowledge of the built environment professions and will strengthen their capacity in strategic and practical aspects of disaster prevention, mitigation, response and reconstruction to mitigate the effects of disasters nationally and internationally. The journal publishes original and refereed material that contributes to the advancement of the research and practice, and provides contributing authors with an opportunity to disseminate their research and experience to a broad audience.

The coverage of the journal includes, but is not limited to: Disaster mitigation, response and reconstruction; Disaster risk reduction; Physical, social and economic resilience in the built environment; Reconstruction and sustainable development; Participatory approaches to reconstruction; Empowerment of women and vulnerable groups; Project management for post-disaster reconstruction; Waste management; Business continuity management; Knowledge management; Governance and transparency; Corporate social responsibility; Law and regulatory frameworks; Conflict sensitive reconstruction; and, Social impact of reconstruction. Further details on coverage details of the journal is available at:

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CADRE (Collaborative Action towards Disaster Resilience Education)

There are wide-ranging origins and causes to the many disasters that have affected communities across Europe and globally with ever-greater frequency. If construction researchers and practitioners are to be able to contribute to reduce risk through resilient buildings, spaces and places, it is important that capacity is developed for modern design, planning, construction and maintenance that are inclusive, inter-disciplinary, and integrative. In order to address this challenge, CADRE will develop an innovative professional doctorate programme that addresses the requirements for lifelong learning and actively promotes collaboration between European HEIs, industry and the community. This novel programme will address the career needs, and upgrade the knowledge and skills, of practising professionals working to make communities more resilient to disasters, and particularly those in, or who aspire to, senior positions within their profession. The candidates will undertake research aimed at making a contribution to the knowledge of professional practice and will involve applied rather than pure research. It will require candidates to establish the research problems from the viewpoint of industry and the community, thus encouraging healthy communication channels between ICU and establishing a strong platform for through life learning. In this context, the project, will improve the quality and relevance of higher education through active cooperation between Higher Education Institutes and partners from outside academia, including construction professional bodies, local/national/international bodies and social partners.

CADRE is an ERASMUS multilateral project supported by an EU grant. The project will run for three years and is led by the University of Huddersfield's Global Disaster Resilience Centre, UK. The Huddersfield team are working in conjunction with four European based institutions and two partners from Sri Lanka who will bring a much-needed international perspective to the project

Aim and objectives

CADRE aims to address current and emerging labour market demands in the construction industry to increase societal resilience to disasters.

CADRE will achieve this aim by: 1) Establishing a framework for ICU integration to address societal concerns; 2) Developing and testing an innovative professional doctoral programme that integrates professional and academic knowledge in the construction industry to develop societal resilience to disasters; 3) Creating world-class curricula and modules to support the programme and address current and emerging capacity gaps in the development of societal resilience to disasters; 4) Exploiting ICT to enable cross-border cooperation in the sharing and delivery of educational resources that support the professional doctoral programme.

Methodology

CADRE will achieve these objectives by: Managing partners to deliver outputs and achieve intended outcomes (WP1&2); Identifying market needs across a range of stakeholders (WP3); Developing a framework for ICU integration (WP3); Developing a professional doctorate programme based on a clear demand and involvement from industry and communities (WP3); Testing and validating the professional doctorate programme within the framework of lifelong learning and ICU interaction (WP4); Developing industry and community informed Open Educational Resources (OERs) for disaster resilience education (WP5); Planning to deliver the programme and sustain its impact beyond its initial funding (WP6); and, Raising awareness and promoting a common understanding among stakeholders of the importance of disaster resilience education and the essential role of European HEIs in improving society's ability to withstand the threat posed by hazards (WP7).

A constructive & developmental research approach has been selected as the overarching research methodology. This approach will begin with a detailed market needs analysis, capturing inter-disciplinary needs across a range of stakeholders and countries. Alongside this, an ICU framework will be developed to identify how integration can take place and how the effectiveness of such integration can be measured. These two activities will culminate in the first milestone. To ensure that the proposed programme addresses a global, rather than just European perspective, input will also be sought from a third country partner. Based on these inputs, the development of the academic content of the joint professional doctorate programme and the associated processes will begin. This will involve the identification of the common and specific research areas, and potential for cooperation among partner organisations. This will also result in the second major milestone, the DProf programme specification (WP3). The next phase will involve development of Open Educational Resources (WP5), with a specific focus of imparting the knowledge and skills needed for undertaking doctoral research in disaster resilience in the built environment. In doing so, the programme will ensure that the specific specialities and expertise of disaster management and resilience in the built environment from the partner organisations will be integrated to the proposed joint doctoral programme. The final implementation phase will involve programme validation (WP4). The ICU framework will be a central tenet of this validation.

Exploitation and valorisation (WP6) will ensure that CADRE has a sustained impact on the target groups and achieves it intended outcomes. It will ensure that programme and learning resources are put to good use through project engagement with relevant stakeholders across Europe and beyond. Dissemination (WP7) will raise awareness and promote a common understanding among stakeholders of the importance of disaster resilience education and the essential role of European HEIs in improving society's ability to withstand the threat posed by natural and human induced hazards.

Consortium

The CADRE consortium is composed of 7 partners from 5 different countries, representing organisations involved in research and development of improving the resilience of society to catastrophic natural hazards. The team will work together to pool their results, build inter-disciplinary explanations, discuss findings at conferences, write and publish papers, and inform policy development. List of partner institutions are given below.

Global Disaster Resilience Centre, University of Huddersfield
Vilnius Gediminas Technical University
Tallinn University of Technology
Northumbria University
United Nations International Strategy for Disaster Reduction
University of Moratuwa
Federation of Sri Lankan Local Government Authorities

Further information

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Contributors

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Samantha Hettiarachchi is Professor of Civil Engineering of the University of Moratuwa, Sri Lanka, specialised in Coastal Engineering and obtained his PhD from Imperial College, London. He has represented Sri Lanka on the establishment of the Indian Ocean Tsunami Warning System (IOTWS), under UNESCO/IOC, Paris since its inception in 2005 and served as Chairman of Working Group on Risk Assessment for Indian Ocean States for the Inter Governmental Coordination Group for the establishment of the IOTWS (UNESCO/IOC/ICG/IOTWS) from August 2005 to March 2015. As Chairman, Professor Hettiarachchi provided leadership for the preparation of Tsunami Risk Assessment Guidelines for the Indian Ocean (UNESCO/IOC Guideline and Manual No 52) in 2009 and its revision in 2015. He has also contributed to other UNESCO guidelines on coastal hazards. The Working Group also collaborated with Geo Science Australia to develop the Tsunami Hazard Map for the Indian Ocean. These two powerful tools will contribute to the safety of human life, ecosystems and infrastructure against the tsunami hazard within a multiple hazard coastal framework. Professor Hettiarachchi spearheaded Training Programmes in Coastal Hazards and Tsunami Risk assessment for Indian Ocean States. Major regional training programmes were organised under his leadership in 2009, 2010, 2012, 2013, 2015. He has served on UNESCO committees/missions on tsunami risk assessment. Professor Hettiarachchi has also worked with UNDP –Asia Pacific Regional Centre-Bangkok in providing training in Tsunami Risk Assessment for Indian Ocean States. He was a member of the UNESCO Mission for the establishment of Multi Hazard Warning System and Risk assessment of Studies for Sultanate of Oman. He served as a resource person for training programmes held in Muscat in 2012, 2013 and 2015. He served as Guest Editor for UNISDR Prevention Web in December 2014 on the subject of the IOTWS. (http://www.preventionweb.net/experts/guest/collection/41433). At the 10th sessions of IOTWS held in Oman in March 2015, Professor Hettiarachchi was elected Vice Chairman of IOTWS.

Dilanthi Amaratunga is a Professor and a leading expert in disaster resilience with an international reputation. She current leads the Global Disaster Resilience Centre, a global leader in interdisciplinary research, education and advocacy to improve the resilience of nations and communities at the University of Huddersfield, UK. Her research interests include disasters and the built environment; capacity building; socio-economic measures for disaster risks; gender and protection; Preparedness for response, recovery and reconstruction, conflict affected societies; Risk management and sustainability; and Public policy, governance and procurement. Her research leadership in disaster management has been recognized in the international research community by appointing her as the Editor-in-chief of the International Journal of Disaster Resilience in the Built Environment (www.emeraldinsight.com/ijdrbe.htm). She also led the Editorial Team of the Global Assessment Report 2015 key papers published by the United Nations International Strategy for Disaster Risk Reduction. She has project managed to successful completion several research projects generating significant research outputs including CASCADE, with 17 international partners. To date, she has produced over two hundred publications, refereed papers and reports, and has made over 50 key note speeches in around 30 countries, over 80 invited speeches and keynotes for international audiences. Full details of Dilanthi's publications, projects, and national and international activities can be found at www.dilanthiamaratunga.net. Dilanthi can be contacted via d.amaratunga@hud.ac.uk.

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Prevention and Management Journal and reviewer of International Journal of Disaster Risk Reduction. Former UNDP staff/team member worked with the Ministry of Disaster Management and the Disaster Management Centre in many national initiatives such as developing a five year Comprehensive Disaster Management Programme for Sri Lanka (SLCDMP) with BCPR, coordinating National Disaster Management Coordinating Committee and developing HFA monitoring reports with UNISDR, Integrated Post Flood Assessment with the World Bank and GFDRR, developing standard school books with technical agencies in Sri Lanka, Panellist-Global Risk Forum, Davos, 2012. Kushani can be contacted at: Kushani.desilva@hud.ac.uk.

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Ranjith Premasiri is a Senior Lecturer in the Department of Earth Resources Engineering, University of Moratuwa, Sri Lanka. Dr Premasiri is graduate of University of Peradiniya under the

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Dr Prasanna Liyanage is a Senior Lecturer, attached to the Department of Physics, University of Peradeniya. He has been working in the area of Lightning Research for the last fifteen years and have obtained his PhD in the same area. His research interests focuses mainly on Physics of Lightning and other Electrical Discharges. He has over twenty publications related to various aspects of lightning and am supervising several postgraduate students who are working on these areas. In addition to his main research interests, he has been involved in investigating lightning related deaths and injuries in Sri Lanka. This research work is funded by an Applied Research Grant for Disaster Preparedness and Resilience Research, by Global Disaster Preparedness Centre (GDPC) (http://preparecenter.org/), which is a reference center to support innovation and learning in disaster preparedness. As a condition of the grant, we are expected to present the findings at a reputed forum to stakeholders. He finds this an ideal opportunity get a wide audience who are focusing on disaster risk management and it will be a rare opportunity to discuss the findings with a group of stakeholders working on accountability in disaster risk management. Prasanna can be contacted at: prasannaliy@pdn.ac.lk.

KDN Weerasinghe (PhD) is professor Emeritus, University of Ruhuna, Engineer Agronomist holding Ph.D in Agriculture. Currently work as professor Emeritus Univ. of Ruhuna and as the Vice Rector, Academic affairs, International relations and Research, in INTEC Asia campus, Koswatte, Battaramulla, Sri Lanka. First head and Senior Chair of the Department of Agric. Engineering, Faculty of Agriculture, University of Ruhuna. Worked as a consultant to ADPC during 2012-2015,on

the project on Mainstreaming Climate Information application for Resilience building in paddy Ecosystems in Sri Lanka and Vietnam. Ashoka fellow for community mobilization and social entrepreneurship ; 35 year academic work experience with communities and interdisciplinary teams in many countries. 80 international journal publications and more than 150 Conference papers. 8 national and international patents. Winner of number of national and international awards for research Excellency, international collaboration, Academic leadership, International funds raising including; National award for Disaster resilience 2014, for leadership and remarkable contribution made to Disaster risk reduction in Sri Lanka.

Keynote address

Promoting Accountability in Reducing the Impacts of Disasters to the Poor and Vulnerable

Jerry Velasquez, Chief of the Advocacy and Communications Section and Head of the Making Cities Resilient Campaign of the UN Office for Disaster Risk Reduction (UNISDR)

Before moving to his present function in Geneva in August 2013, he was for six years the UNISDR Regional Coordinator for Asia and the Pacific covering 37 countries and 16 territories from Central Asia to the Pacific Islands. The Regional Office is based in Thailand, with oversight for the sub-regional office in the Pacific in Fiji, and the Kobe liaison office in Japan. He previously worked for the United Nations Environment Programme (UNEP) in Nairobi, Kenya with the Division for the Global Environment Facility (DGEF) and the Division for Environmental Laws and Conventions (DELC), where he focussed on the promotion of cooperation among Multilateral Environmental Conventions. Prior to this he was the Coordinator of the Global Environment Information Centre (GEIC), a joint programme of the Ministry of Environment of Japan and the UN University, where he coordinated the Inter-linkages programme – promoting synergies among the work of Multilateral Environmental Conventions. He was also previously an Academic Officer at the United Nations University (UNU), and a Research Fellow at the United Nations Centre for Regional Development (UNCRD) where he focussed on environmental governance, social vulnerability to disasters and environmental capacity building. His published work includes edited books, UN reports, journal articles, interactive software, and policy briefs on Multilateral Environmental Conventions, environmental governance and disaster vulnerability and risk. His latest publication is titled "Reducing Vulnerability and Exposure to Disasters – the Asia Pacific Disaster Report 2012" published in October 2012.

Global guidance

The Sendai Framework for Disaster Risk Reduction: 2015-2030 is the global blueprint in the next 15 years for reducing disaster risks and preventing the creation of future risk and building resilience. The Framework notes the need for improved accountability for disaster risk reduction at all levels, through improved disaster risk governance. Article 19(e) of the Sendai Framework articulates the principle that disaster risk reduction depends on coordination mechanisms within and across sectors, full engagement and clear responsibilities of all State institutions and stakeholders, to ensure mutual accountability.

Pope Francis' Laudato Si highlights the risks faced by the poor and the increased vulnerability and exposure that they face due to the degradation of the ecosystems that they rely on, and the socio-economic situation that they are placed. It also highlights the need for increased accountability and sense of obligation to deal with these risks, especially for the poor.

Challenges to promoting accountability in DRR

Under normal conditions, making local development planning equitable has proven difficult, resulting in steady increase in community risks to disasters. This is due to capacity gaps, multiple and at times what appears to be, conflicting – not least economic - interest. The poor have borne the brunt of this unequal growth and distribution of disaster risks, as they often are the most exposed to hazards and are also the most vulnerable to them.

For example, urban land-use planning and its management have implications on future risk scenarios and the poor. In problem cities such as Bogota, Dakar, Jakarta, Kathmandu, Karachi, Kampala, Kisumu, Yaoundé, Manila, Mumbai, among others, poor planning and weak enforcement of local zoning and building laws have worsened risk conditions. Learning from past disasters has been slow. With limited application of risk informed decision-making, and also limited use of organized community engagement and involvement in problem identification, planning and decision-making, as well as implementation of urban improvement projects, improving disaster accountability seems a difficult undertaking to promote.

When a disaster occurs the crisis caused and during the phase of disaster response and recovery, the complexity and dynamics of in a crisis render normal procedures of planning, implementation, and oversight less effective, and put competent professionals in situations that often are difficult to handle.

Social demand for accountability in DRR

There are a number of examples of people and communities voicing their expectations to government officials to provide timely warning and to enable evacuation, when hazard impacts are imminent. In one example in the Philippines, members of the Save CDO Now Movement filed an administrative complaint against the Cagayan de Oro city mayor. The complaint alleged that the mayor was negligent in protecting the population of the city from Tropical Storm Washi in December 2011 when more than a thousand people were killed. A similar case was filed in August 2012 against the mayor of Minami-sanriku, Miyagi prefecture in Japan claiming that professional negligence caused the deaths of town officials during the March 2011 tsunami because he failed to direct them to safety. Such explicit public concern has not yet been demonstrated to reduce the exposure or vulnerability of entire segments of population to hazards that could potentially lead to disasters in the future.

The perils of nuclear power facilities located in areas vulnerable to hazards and in proximity to human settlements were dramatically exposed by the 2011 Fukushima disaster in Japan. The incident highlighted similar exposure elsewhere in Asia and throughout the world, although it was not for the first time. A nuclear power plant was built in Bataan, Philippines on an active seismic fault nearly 20 years ago, although public pressure eventually forced the plant's permanent closure before it was commissioned, even though the equivalent of two billion dollars of public funds had been spent. There are other nuclear power plants being built in Asia, such as one in Kalimantan, Indonesia and another in Kundakulam, India, which are facing growing public concerns about their safety and possible future risks from natural hazards.

DRR accountability as a moral responsibility

The questions on accountability in the above cases seem to be if risks are known before the decisions were made to locate populations in hazardous locations, or not to warn populations at highest risks of impending hazards, or for ignoring the needs to the most affected after a disaster, and how communities are involved in these decision-making processes.

Despite policy-driven expectations of monitoring and accountability, establishing a direct attribution of effective disaster risk reduction to good governance is difficult. The consequences of decisions or actions taken or avoided may not become visible until much time has passed.

In this regard, promoting accountability as a moral imperative and institutionalizing effective accountability mechanisms appears to be ways forward. Moral responsibility, and accountability mechanisms are supposed to play a key role in different phases of disaster management cycle: response, recovery, rehabilitation, reconstruction, prevention, mitigation and preparedness. The absence of such responsibilities and mechanisms has reduced the effectiveness of interventions in many situations.

Special remarks

Professor P S M Gunaratne, Vice Chairman, University Grants Commission, Sri Lanka

Professor P. S. M. Gunaratne, Professor in Finance, has held positions in a number of premier national organizations dealing with education and higher education. Prior to assuming the Office of the Vice Chairman-University Grants Commission (UGC), Professor Gunaratne served as Head-Deparment of Commerce (University of Colombo), Coordinator-Postgraduate and Mid-Career Development Unit of the Faculty of Management and Finance (University of Colombo), Dean-Faculty of Management and Finance (University of Colombo), Member of the Governing Board-University of Colombo School of Computing (UCSC), Member of the Governing Council-National Institute of Business Management (NIBM), Member of Governing Council-National Institute of Education (NIE), Board member of the National Human Resources Development Council, Member of the Academic Affairs Board of the School of Postgraduate Studies – Sri Lanka Institute of Development Administration (SLIDA).

Professor Gunaratne holds a B.Sc (Hons) Business Administration Degree from the University of Sri Jayewardenepura, a Master of Business Administration (MBA) from University of Colombo, Sri Lanka. He is a recipient of the prestigious Japanese Government MONBUKAGAkAGAKUSHO scholarship under which he completed a M.Sc. (Finance) and a PhD (Finance) at the Tsukuba University (Japan).

A recipient of the Commonwealth Postdoctoral Fellowship (UK), Professor Gunaratne was a Visiting Fellow at the Institute of the Development Finance, University of Manchester (UK). He is also a recipient of fellowship the Japanese Society for Promotion of Science (JSPS) under which he served as a Visiting Research Fellow at the Yokohama National University, Japan.

ABSTRACTS

Contextual and cultural appropriateness of the social accountability tools within natural disaster management

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This paper focuses on the methods and tools of social accountability that are most frequently implemented within natural disaster management. These accountability tools are used to improve different functions of the disaster management institutions, from the decision making processes that are conducted during policy and planning to accounting of outputs and service provision. In practice, these accountability tools are varied from the participatory policy making and planning tools (e.g. local issue forums, study circles, consensus conferences and public hearings), budget-related social accountability tools (e.g. participatory budget formulation, independent budget analysis, public expenditure tracking surveys social audits), work social accountability tools in the monitoring and evaluation of public services and goods (e.g. public hearings, public opinion polls, citizen's charters), and to social accountability and public oversight tools (e.g. oversight committees, local oversight committees). However, social accountability tools only works best when contextual and cultural factors in supportive to its functioning. Thus, it works best when both the vulnerable communities and the disaster management institutions find mutual benefits and values in their use. In many countries, however, the commitment of disaster management institutions to transparency, inclusive decision-making, and citizen engagement is very much uneven. Thus, the social accountability tools are merely used as pilots, in many instances to communicate ceremonial inclusiveness and transparent governance. On the other hand, civil society and citizens may not be willing to support social accountability tools because of the perceived mistrust of the institutions, passiveness, or lack of a culture of civic engagement. Therefore, the paper argues that it is the joint challenge of academics and policy makers to research and build "culture specific collaborative social accountability frameworks" to strengthen and create a demand side pressure for better governance within natural disaster management.

Keywords: Disaster management, social accountability tools, vulnerable communities, contextual and cultural appropriateness

Transparency and accountability in community-based post-disaster housing reconstruction

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Indonesia is a country that is highly susceptible to disasters, particularly earthquakes. In the last decade, Indonesia has been hit by three large earthquakes; Aceh in December 2004, Yogyakarta in May 2006, and West Sumatra in September 2009. These earthquakes have created considerable losses to Indonesian communities, leading to 130,000 fatalities, US$10.3 billions in economic losses, and 500,000 heavily damaged houses. The extensiveness of housing reconstruction is the most problematic issue in the housing reconstruction programme sector. Although community-based post-disaster housing reconstruction projects (CPHRP) have been implemented, nevertheless the outcome was overshadowed by delays in delivery, cost escalation, unexpected quality, and community dissatisfaction. The implementation of good practice in project risk management in the construction industry is expected to enhance the success of CPHRP. Accordingly, the study based on which this abstract is prepared aims to develop a risk management model for community-based post-disaster housing reconstruction approach.

In order to achieve the aim and objective of the research, multiple case studies were selected as research strategies. This study implemented the sequential mixed method application, starting with a semi-structured interview and followed by a questionnaire survey as the primary method. Content analysis was used to analyse qualitative data, whilst descriptive and inferential statistics were deployed to analyse quantitative data.

The study revealed the importance of the understanding of a community-based approach in post-disaster housing reconstruction. Four highly significant advantages of CPHRP were discovered, the most significant advantage being that it 'creates a sense of ownership' to beneficiaries of the project. The psychological advantage of CPHRP was also found to be greater than the construction advantage. Furthermore, the risk assessment revealed some high-risk events during the pre-construction stage of CPHRP. The project objective most affected by them is project time completion. A risk response document has also been proposed. Moreover, this study found twelve critical success factors (CSFs) of CPHRP, with the highest of the CSFs being 'transparency and accountability'. Overall analysis of CSFs in the implementation of CPHRP in three case study areas revealed that twelve factors could be considered as CSFs of CPHRP. Statistical analysis on these factors found that the standard deviation is small which suggests that there is not much data variation, and the small value of t-test (≤0.050) indicates that the result is statistically significant. The most influential CSF is (1) transparency and accountability at the mean value of 4.3846.

From these results, it is very clear that transparency and accountability is the most important factor in CPHRP.

Keywords: Built environment, accountability, post disaster reconstruction, community based

No one is accountable for natural hazards induced displacement and relocation failures: Case of Galle and Rattota

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People living in hazard prone areas are temporary displaced due to natural hazards but, they have the opportunity to return to their original place after sometime. However, there are instances where governments have relocated people into new settlements without their consent with the intention of securing their lives from future hazards. This is named as involuntary or forced relocation by social scientists. Relocation is fundamentally a political phenomenon where one party use power to relocate the other party which is vulnerable. Majority of displaced and resettled people in new settlements suffer from relocation failures mainly due to poor funding, designing and incomplete implementation of such projects. Therefore, it is vital to ensure socially and environmentally responsible relocation, what Jonathan Fox has called as "accountability politics". It is against the above back ground that this paper attempts to show how some of the relocation failures could have been reversed by implementation of social and politically responsible relocation based on the fieldwork conducted in tsunami relocated settlements in Galle and landslide relocated settlement in Rattota. Based on the fieldwork it can be concluded that relocation is perceived by authorities as a mere act of giving a plot of land or a house to the vulnerable people. They fail to see this as a process. As a result they do not get people actively involved, which in turn makes relocates lose trust and sense of belonging to the settlement. Combination of these factors couple with other factors forced relocates to move out of new settlements and settle down again in hazards prone areas by vacating, selling or renting their houses which can be evident from the two case studies.

Keywords: Planned settlement, forced relocation, accountability politics and social vulnerability

Accountability in disaster mitigation: the case of post-tsunami reconstruction and resettlement in Sri Lanka

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A large scale disaster demands an equally large response to deal with its aftermath in terms of rescue, relief, resettlement and rehabilitation. Indian Ocean tsunami that struck most parts of the coastline of Sri Lanka and several other countries in the region resulted in a massive destruction in the affected areas in terms of deaths, injuries, loss of property and displacement of people. Even though the response of local people, the government, the international community and civil society organizations was massive and unprecedented, the scale of the interventions needed to cope with the situation was very large. Moreover, the process of resettlement and rehabilitation involved a sustained and long term effort involving numerous institutions and stakeholders, both local and foreign. This naturally makes issues of accountability of people and institutions involved in the effort highly complex. Nevertheless, all efforts have to be made to ensure accountability of stakeholders towards the people and communities affected. However, unless, effective accountability mechanisms are in place, the lapses are bound to occur. This is what exactly came out of a qualitative study conducted in number of selected resettled communities in southern and eastern Sri Lanka after ten years. Paper looks at some of the glaring examples from the field. This paper presents and discusses the results of this study with respect to evident accountability lapses on the part of institutions. The paper argues that there is a need to develop and institutionalize a social accountability mechanism that can persuade external and local agencies to be accountable to communities they serve during the course of the resettlement and rehabilitation process.

Keywords: Resettlement, Disaster mitigation, social infrastructure, accountability.

Evaluating damages due to lightning in neighborhood of communication towers in Sri Lanka

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Lightning can be considered as a disruptive electrical discharge due to the dielectric breakdown of the air between the clouds or between the clouds and the ground. There are about 5000 storms/day or 1000 lightning strikes per second throughout the world. Lightning activity in Sri Lanka is high as compared with other tropical countries. An average of 40 deaths and around 50 injured persons are reported every year. An estimated value of more than 300 million rupees loosing every year even though the property losses and down time due to lightning strikes are not yet been properly surveyed.

Communication and communication towers are two closely linked entities in spreading out the technology in a country. There are 6471 mobile communication towers and more than 400 other communication towers mushrooming over Sri Lankan territory. Equipment damage to private property from tower lightning strikes is widespread throughout the country. The scenario is always the same: "A tower is constructed and shortly thereafter damage begins to occur to equipment on nearby private property. The property owner suspects that it might have something to do with that recently erected communication tower. There is no clear scientific evidence to conclude that the presence of a communication tower is the main reason for increment of lightning occurrence in the vicinity of the tower. An average of more than 10 complaints of this nature per month reaches to Telecommunication Regulatory Commission (TRC) of Sri Lanka. Tower owners and operators are accountable for constructing their towers to minimize the impact of lightning strikes for safer environment in accordance with TRC guidelines. This paper discusses the damages which are claimed due to lightning at the neighborhood of five communication towers in different parts of Sri Lanka. Most lightning threats to electrical or electronic equipment in questioned areas can be mitigated by appropriate surge protection and grounding practices. There are noticeable misconceptions on lightning and communication towers among the public and private disputes which can be avoid only by organized awareness progrmmes with regulatory authorities, tower operators and neighborhood community.

Keywords: Lightning, discharge, towers, surge protection

Use of landslide hazard zonation maps in landslide disaster risk reduction

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Impact of natural disasters such as landslides, floods, droughts, cyclones etc on high populated and hilly areas of Sri Lanka has increased in the recent past mainly due to the augmented human migration with poor aware of the risk and vulnerability. In the meantime, due to heavy rains received recently in several geographic zones of the country have caused landslides. This paper provides an overview on landslide risk reduction through landslide hazard zonation mapping.

Identification of susceptible areas to landslide and risk of localized landslide hazards needed to take necessary prevention and mitigatory measures. Hence the hazard is zonation mapping and the risk assessment can be used as an important application in the above purpose. In 1991 landslide zonation mapping was introduced by the National Building Research Organization (NBRO) with a view to identifying the most vulnerable areas for landslide hazards and thus seven landslide prone districts namely Nuwara Eliya, Badulla, Ratnapura, Kegalla, Kandy, Matale and Kalutara have been initially mapped. Another three districts namely Galle, Matara and Hambantota were also included considering the risk of landslides recently.

The hazard zonation maps already prepared are in 1: 50,000 and 1: 10,000 scales and are intended to be used as a planning tool which identifies the degree of hazard associated with a specific area. Thus the maps are utilized in planning of any development project within the hilly areas of the country. The maps can also be utilized for policy making, evacuation and resettling highly vulnerable communities and infrastructures, economical distribution of relief aids, identifying economical mitigation measures and issuing landslide early warnings. NBRO is accountable to prepare those maps for the use of other organizations as much as in to correct format but in Sri Lanka no body is accountable to use these maps. But in immediate future Regulations should be introduced to use those maps whenever any changes occur in the landslide prone areas such as developments and construction.

This paper provides an overview and the benefit of landslide Hazard zonation mapping as a tool for disaster free development.

Keywords: Landslide, Hazard Zonation Mapping, disaster free development

Accountability, risk management and responsible reconstruction to enhance resilience of critical road structures exposed to extreme events

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One of the seven goals of Sendai Framework for disaster risk reduction (2015-2030) is minimising damage to critical infrastructure. Authorities accountable for managing infrastructure systems require understanding of the vulnerability modelling of the infrastructure under extreme events, developing risk mitigation methods, considering community impact caused by failure of infrastructure and interdependencies of infrastructure systems. A current project funded by Australian government under the Bush Fire and Natural Hazards CRC is developing a framework and tools required for enhancing resilience of critical road structures under flood, bushfire and earthquake loadings, in partnership with three Australian Universities and the University of Huddersfield UK.

In the first phase of the above project, the authorities accountable for ensuring resilience of road structures have been consulted to understand their immediate response and strategic planning to prevent failure of a given road structure. Failure of structures under extreme flood events in one case study area has been examined and failure modes and the authorities accountable for the resilience of structures have been established. Consultation with the community indicated the impact of failure of structures on them and the perceived response from managing authorities in risk reduction and reconstruction.

In supporting authorities accountable for managing the structures in decision making, an integrated research scope has been established and a broad framework has been developed for decision making on hardening of road structures, which can be easily expanded to other infrastructure systems as well. The paper will present the methodology adopted in predicting vulnerability of road infrastructure, assessment of community impact and the proposed framework for disaster risk reduction, which can be used by authorities managing road structures to ensure risk management of existing structures and reconstruction of resilient structures.

Keywords: Disaster Resilience of Infrastructure, Vulnerability Modeling, Risk Assessment, accountability

Tsunami disaster recovery experience in governance perspective: A case study on the recovery of micro, small and medium enterprises in Matara District in Sri Lanka

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The tsunami was by far the largest disaster experienced by Sri Lanka in its recent history. About two thirds of the 1400 km long coastline was affected. The directly exposed coastline from the Northern Jaffna peninsula, along the eastern coast down to the Southern tip of Dondra Head, as well as the relatively sheltered Southwestern and Western coasts, were inundated by the Tsunami. Thirteen districts along the coastal belt namely: Ampara, Batticaloa, Colombo, Gampaha, Galle, Hambantota, Jaffna, Kalutara, Kilinochchi, Matara, Mulaitiu, Puttlam and Trincomalee, were affected by this disaster.

The main objective of this paper is to identify some of the key issues encountered by Tsunami affected Micro, Small and Medium Enterprises (MSMEs) in the process of disaster recovery. First the study identified damages and losses to MSMEs, secondly ascertains the type of benefits received by the affected MSMEs from various donors, thirdly evaluate the problems and difficulties faced by the beneficiary organizations in the benefits distribution process.

The main data and information for this study obtained from the available literature, web sites and publications supplement with primary data collection from selected sample in Matara district in Southern Sri Lanka and interviews were conducted with relevant key stakeholders.

The results of the study shows that many Tsunami affected MSMEs were ignored and carried wrong priorities. Besides the support provided was insufficient for an effective recovery. There existed many governance-related problems in recovery process. However, overall recovery was at low rate of 59 percent. Though, Sri Lanka received second highest local and foreign donation among the Tsunami affected nations, affected MSMEs got a little support and assistance to recover and no records can be found where these numerous amount of donations received have gone. Expenditure should have been in the direction of procurement of tools, equipment and for the affected units. Unfortunately the support could not be organized to reach the right industry, in right quantity, and right way. The recovery was short and it was not because of the shortage of funds.

Due to the large scale of the disaster, its wider geographical spreads and a large number of agents, institutions and parties involvements in benefits distribution and recovery process, it is hard to finger point to any single entity about accountability of government or other institutions for their conduct and performances in recovery process. Furthermore, findings of MSMEs Tsunami disaster recovery survey in Matara district also shows no exception to the above general truth. However, this may be the right time to design a proper coordination mechanism to benefits distribution and speedy recovery process of a natural disaster of this scale by looking at lessons learned out of this recovery process with special emphasis on governance aspect.

The methodology used, findings and policy recommendations derived from this research can be used to analyze similar cases in other countries and to design a proper coordination mechanism to benefits distribution and speedy recovery process of natural disaster of large scale.

Keywords: Tsunami, Disaster, Micro, Small and Medium Enterprises; MSMEs, Recovery, Governance

Assessment of microbial pollution levels in Kelani river water at Ambatale intake

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The Kelani River is the second largest river in Sri Lanka. The river originates in the central hill country of the island and flows in a predominantly westerly direction until it reaches the sea at the northern limits of the city of Colombo. The upper catchment is very rugged and mountainous in nature. The Kelani River provides raw water from Ambatale for the supplying of almost 75% of the demand in the Greater Colombo area. The river flows through industrial areas until it reaches the sea.

Water pollution in the Kelani River derives from two main sources, industrial and domestic effluents that enter the river directly from factories and houses located near its banks and indirectly from industries and human settlements located along waterways and canals which drain into the river. The effect of pollution on river water quality depends on the amount and concentration of the pollutants, river discharge, tidal condition, water flow in the river, dilution of the effluents from industries and other factors. It has been observed that during the drought seasons, the water flow in the river is low, the required dilution of the effluents from industries, which are acceptable during normal flow, does not occur. This situation is worsened by salinity intrusion up to about the intake at Ambatale. The protection of water quality in Kelani river has thus become a major issue. Although many parameters can be used to describe the water quality, the most significant for the Kelani river is bacteriological contamination resulting from large volume of domestic as well as industrial sewerage.

This study was focused on evaluation of Kelani river water at Ambatale intake for microbial contamination using indicator organisms. The Coliform group of bacteria is the principal indicator of suitability of water for sanitary quality. In this study, Standard test for Total Coliform and *E. Coli* was carried out by the multiple-tube fermentation technique and the results are reported in terms of Most Probable Number (MPN/100 ml) For this study, representative samples were collected, using evenly spaced monthly intervals (from year 2011 to 2013) continuously. All quality control measures given in Standard Methods for the sampling and analysis were followed to substantiate the validity of analytical data.

Results of this comprehensive study revealed that intake water exceeded the inland raw water quality standards (SLS 722: 1985) during most of the study period (Total Coliform 70%). When the results were correlated with the flow rates of the sampling point It was observed the positive relationship between the microbial contamination and flow rate of the river. This correlation suggests that most possible courses for this microbial contamination were non-point sources pollution than the point sources. High microbial contamination requires high chlorine demand to disinfect the water to maintain Water Safety. On the other hand, it produces Disinfection By Products (DBP). Therefore urgent attention to control fecal contamination of the drinking water source is a priority issue. Therefore the source protection plays a vital role to keep the source water quality within tolerable limits for surface water used as raw water for public water supply. In this endeavour all possible measures should be taken to controlling point and non-point sources, paying special attention to the sanitary facilities of the people living in kelani River catchment area and implementation of the Water Safety Plans (WSPs) to Ambatale and Biyagama water treatment plants to address the catchment protection with the stakeholder's in river basin. National Water Supply and Drainage Board provides safe drinking water to the consumers but the accountability of source water quality maintaining is multi stakeholder function therefore it has to be addressed in stakeholder forum with the Ministry of Environment.

Keywords: Coliform, E.coli, Disinfection By Products, Water safety plan, Chlorine

Wellbeing as the human outcome of disaster risk reduction: What the field of mental health and psychosocial support can contribute to the problem of accountability

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While the field of Mental Health and Psychosocial Support (MHPSS) has made significant progress in defining its role within the international humanitarian system since the publication of the landmark IASC Guidelines on MHPSS in 2007, there has been very poor engagement to date with the important field of Disaster Risk Reduction (DRR). This is evident in the minimal engagement of the MHPSS field with the formulation of the Sendai Framework.

Building on recent work by the author in the education sector in Region VIII of the Philippines, this paper seeks to demonstrate how the field of MHPSS might contribute to an understanding of wellbeing as the human outcome of DRR activities. Drawing on the work of the Psychosocial Working Group (2003), the PADHI programme of SPARC at the University of Colombo (2008) and the emerging common outcomes framework for M&E of the IASC Reference Group on MHPSS (2015), this paper will propose ways in which the impact of DRR activities may be measured at the level of individual and collective wellbeing. The ability to measure the impact of Disaster Risk Management and Reconstruction activities is a crucial component of ensuring accountability – and this paper offers ways in which conceptual and practical tools from the field of MHPSS may contribute to this important task

Keywords: Wellbeing, Psychosocial Support, Monitoring & Evaluation, Conceptual Framework, Outcomes

Coastal risk assessments; A critical consideration in accountability frameworks

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An accountability framework is a comprehensive communication tool that captures the essential information for the communities at risk including stakeholder agencies. As Coastal communities all over the world are under severe pressure resulting from planned and unplanned development, population growth and human induced vulnerability, coastal hazards accompany high waves and heavy inundation, increasing frequency and magnitude and impacts of global climate change, disaster risk of such communities become high. Therefore understanding underlying risk factors plays a vital role saving lives, conserving ecosystems and protecting built environment. In understanding the risk, assessing hazard, vulnerability and capacities with a special emphasis on deficiencies in preparedness become important. Among the tools available for identifying deficiencies in preparedness analyzing Disaster Risk Reduction (DRR) processes, policies and programmes become important. Land use, key infrastructure and demographic information for identifying dynamics among, human, built and natural environments can support analyzing deficiencies in preparedness. Understanding such dynamics can improve shared understanding therefore, bringing together members of civil society making DRR everyone's business. In this regard, measures that mitigate hazard impact, vulnerability to the hazard and improve preparedness and response capacities become important. Under measures that mitigate hazard, artificial measures such as offshore breakwatdikes and revetments and the effective use of natural coastal ecosystems (Coral Reefs, Sand Dunes and Coastal Vegetation) can be highlighted. For reducing vulnerability, measures such as land use planning, regulatory interventions for example, set back of defense line, in particular for critical infrastructure and those infrastructure to be used by highly vulnerable groups, adaptation of building codes to incorporate guidelines related to coastal hazards for a variety of infrastructure and enforcement regarding the adoption of such building codes become crucial. However unless, preparedness and response capacities are improved with strengthening Early Warning Systems, targeted community education, awareness and training and risk transfer mechanisms (insurance, catastrophe bonds or funds) accountability frameworks will not be disaster risk sensitive for effectively saving of lives and properties during a disaster.

Keywords: Coastal risk, preparedness measures, accountability

Access to information and disaster recovery measures: Role of libraries in times of catastrophes (with special reference to Batticaloa District)

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Preparedness and recovery plans are essential to every organization. In this line, Sri Lankan libraries need to ensure the uninterrupted access to information and the preservation of valuable resources in times of adversity. Nevertheless, their effectiveness is often curbed by inadequate funds, absence of materials and equipment, and lack of required expertise and manpower. National Library and Documentation Services Board (NLDSB) has developed Sri Lanka Disaster Management Committee of Library Services and Archives (SLDMC of LISA), which is a dedicated unit for disaster recovery programmes. The research objective focused in this study is to find as to how well disaster recovery plans are operational and effective in libraries and documentation units across Batticaloa District. The district is subjected to heavy floods and thunder storms. It was hit by cyclone in 1978, tsunami in 2004 and experienced over 30 years of war. At present, many rural areas are prone to elephant attacks that result in losses of human life and properties. Although the administrative bodies have documents related to disaster recovery and aftermath plans, the effective operations through collaboration, congruent measures and transfer of accountability are in question. Thus, the study analyses as to how far disaster recovery plans are in place for libraries located in disastrous zones of Batticaloa District. With respect to disaster response, statuses and policies of libraries and documentation units in Batticaloa District were taken into account for analysis. The survey also highlights on what disaster recovery measures the school, public and government libraries and entities alike implement to recover damaged information resources. Eastern University Library has developed an Operations Manual that includes procedures and indicators to act upon disasters. Finally, the study results propose measures to streamline information retrieval, establishment and proper updating of disaster management system, and guarantee the reliability, viability and availability of information for policy and decision makers and other stakeholders. Linked to this, the study offers a number of indicators that can be used to ensure accountability of library services to their respective constituencies and governance structures in relation to disaster preparedness and recovery planning.

Keywords: Disaster Recovery Plans, Natural Disasters, Libraries, Batticaloa District

Food disaster risk management: Social accountability on wild grown underutilized crops in Sri Lanka

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Resilient livelihoods which bear potential capacity to ensure food and income security of rural communities is the key concern in current global development context. According to Pasiecznik,(2009) the world food supply depends on few crops species, identified as 'major crops' where almost 95% of the world food requirement is met by 30 plant species, focusing on the cultivation of three staple crops such as rice, maize and wheat. Country's dependency on few crops, rice for food and tea, rubber and coconut as cash crops make more vulnerable to food supplies as well as foreign exchange earnings. Climate shocks together with other environmental, economic, and social challenges increase system vulnerability levels and eagerly looking for strategic research interventions. Our approach aimed to identify the role of underutilized crops in disaster risk management, focus on household food security and social accountability on wild collected food. Five villages representing five districts of Uva and Eastern province were the study locations and participatory tools were used to data collection. The paper describes the importance of social accountability concept to ensure sustainable utilization of wild-grown underutilized crops. Our community consultations recognized that competitive exploitation of wild-resources by host and new communities, gradual deterioration of traditional knowhow especially related to plant behaviour based meteorological predictions, enhancing the capacity among youths on identification of such plants and appropriate technologies to minimize harvesting and post harvesting losses of wild varieties are key areas where social accountability need to play a significant role. The diversified community based organizations established and operating under informal village leadership are in a strong position to foster social accountability matter towards the conservation of those resources. However strong community mobilization process on social accountability is must to ensure the initial boost required for attitude change transition initiatives across the respective societies.

Keywords: Resilient livelihoods, food disaster risk, food and income security, underutilized crops, social accountability

Preparedness and countermeasures and risk of earthquake disaster in Sri Lanka

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Among all natural disasters, earthquake is one of the most frequent disasters in the world and which is difficult to predict. However, through preparedness and awareness programmes risk of the disaster has been minimized. Tectonic earthquakes are the most destructive and this type of earthquakes cannot be controlled. There are few other types of earthquake trigged as a man made activities such as reservoir induced, nuclear blast, high raised buildings, over exploitation of groundwater, hydraulic fracturing for shale gas extraction etc. In the world, disastrous earth quakes occur mainly as tectonic earthquakes along major tectonic boundaries. Average occurrence of high scale earthquakes over magnitude 6 per year is about 134 and it over magnitude 5 is about 1319. Thus, three to four earthquakes per day which can be disastrous take place in the world.

Since Sri Lanka does not fall within a major tectonic boundary, there are no records of very high magnitude earthquakes. Only one event was recorded in 1615 near Colombo of a magnitude of 6.4. But many low magnitude earthquakes around 4 to 5 magnitude, small tremors and tele-seismic activities were recorded. However, major earthquakes occur along the tectonic boundary between Indo-Australian plate and Eurasian plate. Still the scientific analysis of these minor earthquakes in Sri Lanka and the impact by human induced activities which may be the major cause of activities have not been addressed properly.

In Sri Lanka, accountable government, non government or private sector institutes have not been properly established and coordinated for all phases of the disaster such as disaster management cycle, mitigation, awareness, response and rehabilitation. This leads to lack of preparedness and awareness about the earthquake disaster in Sri Lanka. All past events and the present awareness of the disaster studies reveals that only very few people are awareness about preparedness, safety exits and risk of earthquake situation. Generally, it is clear that the people in the city are not prepared for a sudden disastrous situation and accountable institutions have not been properly set up.

Keywords: Earthquakes, Colombo, risk, tectonics

An analysis of lightning related deaths in Sri Lanka during the inter monsoons

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Every year lightning causes a tremendous loss to property and even results in loss of life. The lightning related losses are not only limited to direct damages to structures, power and telecommunication networks and electrical, electronic and communication equipment. Indirect economic losses due to down time of power and communication networks, loss of electronically stored data, lightning related fires etc. could be many folds than the direct damages. In Sri Lanka, the estimated death toll due to lightning in 2013 is over 50. Global annual mortality rate could be well over thousand. It is estimated that in every second, over 1000 lightning strikes take place in the world. Taken with the frequency of the event, lightning can be considered as a number one contender for biggest natural disaster resulting in loss of life and large economic losses.

Sri Lanka due to its geographic location is effected by two major lightning seasons during the inter monsoon periods in the months of March-April and October-November. Lightning related deaths and damages are at peak during these two seasons. However, there has been no comprehensive survey or investigation on the lightning related losses and therefore it is difficult to quantify the financial losses, effected sectors and more importantly, the loss of human lives. Detailed case studies are important in the case of human losses to determine the mode of interaction, types of injuries and survival rate. Lack of such data is a major setback in taking effective risk reduction measures and thereby increasing the reliance.

Thus, a study was undertaken to investigate the deaths due to lightning during the inter monsoon seasons. Several incidents were investigated in detail and causes for the deaths were identified. This paper highlights few case studies.

The paper also highlights the lack of accountability in this regard and discusses the difficulty of implementing an accountability mechanism due to the unpredictable nature of the event. Possible accountability mechanisms are also proposed.

Keywords: Lightning, disaster risk reduction, disaster risk management

From local to national policy adaptation towards accountability issues to meet the challenges of climate and weather in paddy ecosystems. A pilot study in Nilwala flood protection scheme, Southern Sri Lanka

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The Nilwala Ganga Flood protection Sceme (NGFPS), in Matara District commissioned in 1986, intended to manage the urban floods, and protect the paddy ecosystems (Nearly 3000 Ha) in the lower basin of the river by adding hard Engineering measures (Dams, Dikes. Pump houses etc.). This disrupted the existed Social, hydrological and natural balance of the paddy eco systems, creating unexpected soil, water and agronomical puzzles. Climate and weather changes of the recent years aggravated the problems.

In the present paper the methodology adapted to address the policy and accountability issues to reduce the vulnerabilities linked to paddy farming through Stakeholder Integration (academia, government institutions, farmer organizations, media, local governments etc. under the leadership of the District Secretary) for technology interventions and adapting them in a rational way. The timely availability of weather and climate information at the grass root level farmers and their awareness building to orient towards the cropping strategies has been identified as the most critical and deceive factor lie on the success of the field activities. The findings has been brought up to the national level to incorporate to the national Agricultural policy frame work. A platform is proposed to be created for line ministries and Institutions (Agriculture, Irrigation and Meteorology, Farmer organizations) to seriously take up the responsibilities to track on accountability on decision arrived at "Kanna meetings " prior to the crop commencement.

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Keywords: Ecosystems resilience, climate and weather, technology intervention, policy adaption

This book contains the abstracts from a workshop that addresses how to ensure accountability in Disaster Risk Management and Reconstruction. We attempt to answer this question in the light of sub topics such as, accountability of government and other institutions for their conduct and performances in preventing and managing disasters, tools of accountability and access to information, role of the organised and capable citizen groups in establishing social accountability, contextual and cultural appropriateness of the accountability tools and accountability in the built environment after major disasters.

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