

GUEST ARTICLE

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## Implementation of Sustainable Development Goals (SDGs) and Disaster Risk Reduction (DRR): a Case Study

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### Abstract

Climate change adaptation and mitigation measures a complicated process and community livelihoods are being seriously impacted. The current local community reality is that climate change and associated disasters are becoming more intense, unpredictable, frequent and costly impacting on rural and urban areas. Disaster Risk Reduction is very important. United Nations General Assembly already set the global policy with the hope that the impact of future disaster events on the community is substantially reduced. Solutions to internal refugee crises start at the local level and require that everyone plays a part: every city, every neighbourhood including farming areas, and every individual can contribute. Leaders must create spaces where everyone can live in safety, become self-reliant, and contribute to and participate in their local community, and not allow people to shift into slum areas after disasters strike. The UNISDR suggests community's use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities; through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment.

**Key words:** Disaster risk reduction, climate change, community

## Introduction

The United Nations SDG Goals together with the UNDRR Disaster Risk Reduction Sendai Framework set the global policy action required by Nations to address local health issues and emerging risks.<sup>1</sup> The UNFCCC - Cooperation of Parties fund research and guide climate change adaptation and mitigation measures.<sup>2</sup> It's a complicated process and community livelihoods are being seriously impacted. The current local community reality is that climate change and associated disasters are becoming more intense, unpredictable, frequent and costly impacting on rural and urban areas. Many rural communities particularly in low income countries and their local governments, residents and small to medium business enterprises (SMEs) find in the context of climate change adaptation that shifting towards Disaster Risk Reduction (DRR) difficult.<sup>3</sup> Local governments in rural areas particularly in developing countries and SMEs are often exposed and lack the capacity to better protect and prepare themselves. However, there are many resilient rural communities, farmers, businesses and good tools and examples where more public-private sector partnerships can help local government and business shift to DRR.<sup>4</sup> This case studies, based on research in this area at CESDI - Griffith University's Centre for Sustainable Development for Indonesia with its main office in Brisbane, Australia.<sup>5</sup> This paper will discuss examples of climate change impacts effecting Australian and Indonesian community development. Communities, government and business all have an important role to play.

## Methods

This is case study from 3 countries, Indonesia, Bangladesh and Australia regarding community participation for disaster risk reduction.<sup>6,7</sup> The brief explanation of each are as follows. A cross-sectional study in Bangladesh compares participants' present and retrospective information (before migration) in seven slums located in the 3 areas of Dhaka City; 74 participants who migrated from rural places of origin because of slow onset drought were interviewed about health status.<sup>8-11</sup> Second, traditional subsistence farming case study in West Timor, Indonesia is an important part of rural society in Indonesia, the seasonal yield is the main source of food to maintain health and livelihoods of these rural

households, this yield is under threat from drought and then intensive rains.<sup>12,13</sup> Third, an Australian case study in the Lockyer Valley Region in South-East Queensland will be discussed. This rural setting experienced extreme flash flooding in January 2011 that resulted in significant impacts in the rural farming township of Grantham. In order to reduce future risks, the local government (Council) immediately committed to an innovative community resettlement project.<sup>14</sup>

Whatever the disaster impacts all communities need to 'Build Back Better'; this UNISDR concept will be discussed. In fact, in all communities collaboration between all sectors involved including community (farmers) members, governments and land-use planning, business and emergency management and public health practitioners was essential. This research highlights the importance of community participation and the need for ongoing assessments in the DRR planning, response, resettlement and recovery processes.

## Results

A comparative understanding of access to basic services, disease issues and economic conditions of internal migrants living in slums in Dhaka was completed in 2017 by Mohammad Ehsanul Kabir, Ph.D. Candidate supervised by Dr. Peter Davey from Griffith University.<sup>11</sup> The purpose of this first case study was to make a comparative assessment of access to basic services, disease issues and economic condition of the disadvantaged internal migrants related to their places of origin and places of destinations. The analysis took place in seven slums located in Mohammadpur, Rayerbazaar and Jigatola areas of Dhaka City in Bangladesh. In brief the findings show some improvements in basic household infrastructure and hygiene practices after migrating from their droughty affected rural farm to these city slums compared to their previous status in places of origin. However, the frequency of diseases increased in the short to medium term after migration, as reported by the participants. The study argues that increased incidents of disease at places of destination can be associated with a limited access to free healthcare benefits and increased burden of living cost compared with the participants' places of origin. This study considered some key issues of internal migration with a temporal account before migration at places of origin and after migration at places of destinations. The feedback from the

disadvantaged migrants which compared their current living conditions with life at their place of origin has not previously been studied in low income countries. However, the most significant trend in human mobility continues to be and will likely remain internal migration or inter-regional migration as opposed to movement across international boundaries. To date, the majority of the research into the vulnerability of human systems has tended to focus on the biophysical impacts of hazards. There is only limited understanding of how such groups are affected by various aspects of vulnerability.

Kabir and Davey<sup>10</sup> reported that climate-migration research in general and noted that more recent studies have recognized the need to investigate how climate and environmental vulnerability could result in incremental or non-linear migration outcomes, depending on various contexts of natural hazards. In order to examine such complexities, the concept of 'drivers of vulnerability' offers a valuable analytical alternative.<sup>9</sup> Kabir and Davey<sup>11</sup> supports an approach that can explain how multiple drivers can influence the livelihoods of various diverse populations across the contexts of natural hazards, time and space, and between and within social groups. This study adopted a multi-method approach and answers the research questions by means of a structured interviews, focus group discussions and key informant interviews. Finally the results illustrate details of the underlying drivers of vulnerability which potentially influence involuntary internal migration from the affected areas, mostly to cities and to slum areas. A range of drivers of vulnerability were identified and classified into five broad thematic divides including economic, institutional, infrastructural, environmental and health-and-wellbeing.

This second case study<sup>15</sup> investigated food insecurity issues in Atoin Meto, a subsistence community in semi-arid parts of West Timor. It discussed the concept of subsistence living from the perspective of food insecurity in severe drought conditions. Yenny Tjoe a PhD graduate also from Griffith University from 2014 collected data in Kupang and Timor Tengah Selatan Regencies in West Timor.<sup>16</sup> Data were analysed via mixed-methods of quantitative household surveys, and qualitative in-depth key informant interviews and participant observations assisting a way forward for subsistence farmers. In summary this case study looked impacts on at traditional subsistence farming as an important

part of rural society. This community maintains food sovereignty without overly using the local resources: following seasonal cycles to grow staple food (being self-sufficient) and earn cash income via multiple activities within and outside the community to offset declining food stock in drought conditions. This study found that local knowledge and values of Atoin Meto is founded on their existing clan regime and emotionally-bonded moral values, which is a historical sustainable approach. However, the system has weaknesses and to support their adaptation to climate change and drought Tjoe<sup>16</sup> suggested three solutions - to enhance their food production; improve nutritious value of local diets and develop their ability to market produce, but keeping enough nutritious produce in the household for families to survive droughts.

Third, a case study in the Lockyer Valley Region in South-East Queensland, Australia will be discussed. This rural setting experienced extreme flash flooding in January 2011 that resulted in the loss of 19 lives including 12 in the rural farming township of Grantham. In order to reduce future risks, the local government (Council) immediately committed to an innovative community resettlement project despite an environment of political resistance and bureaucratic turmoil. During the summer of 2010–2011 Queensland experienced a series of natural disasters that will long be remembered. The floods that devastated central and southern Queensland coupled with the destruction by Severe Tropical Cyclone Yasi resulted in the entire State being declared disaster affected and the tragic death of 37 people. Grantham floods near Brisbane was a major disaster and the community working with local government built back better away from the flood plain and the low lying productive farming areas.

To monitor and coordinate the Government's program of reconstruction and recovery the Queensland Reconstruction Authority (the Authority) was established.<sup>14</sup> The Authority operates under the auspices of a comprehensive and integrated recovery and reconstruction plan for the State – Operation Queensland, its mission is to 'reconnect, rebuild and improve Queensland, its communities and economy'. This is supported by four strategic objectives, two of which specifically focus on resilience: build a resilient Queensland and support resilient Queenslanders; and enhance preparedness and disaster mitigation. As part of Operational Plan

for Queensland, six lines of reconstruction were also established to co-ordinate key aspects of the reconstruction and recovery effort: 1. Human and Social 2. Economic 3. Environment 4. Building Recovery 5. Roads and Transport and 6. Community Liaison and Communication.

In summary, disaster resilience is 'the capacity to prevent, mitigate, prepare for, respond to, and recover from the impacts of disasters'. Building resilience enhances our ability to minimise the effects of future disaster events on our communities, economy and environment. The Queensland Government Reconstruction Authority in 2011 commented that building disaster resilience is about improving the capabilities of individuals, families and communities, as well as that of businesses and governments.<sup>14</sup>

Integral to this is strengthening partnerships between communities, the not-for-profit sector, industry, the private sector and tiers of government. For many in the community an important aspect of this is planning ahead to reduce disaster risks and produce co-ordinated and effective efforts during disaster events. This approach is referred to as 'Betterment – Build Back Better'; building back better enhances a community's immunity to natural disasters.<sup>14</sup>

## Conclusion

The research climate change impacts is important including building resilience towards disasters particularly drought and floods but embrace the concept of 'Build Back Better'. The UNISDR suggests community's use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities; through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment.

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