



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



A GLOBAL REVIEW OF LAND TENURE, CLIMATE VULNERABILITY AND ADAPTIVE CAPACITY

DAVID MITCHELL¹, DARRYN MCEVOY², DANILO ANTONIO³
1 School of Science, RMIT University, Australia
2 School of Engineering, RMIT University, Australia
3 Land and GLTN Unit, UN-Habitat, Kenya
Danillo.antonio@un.org

Paper prepared for presentation at the

“2018 WORLD BANK CONFERENCE ON LAND AND POVERTY”

The World Bank - Washington DC, March 19-23, 2018

Copyright 2018 by author(s). All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided that this copyright notice appears on all such copies.

Abstract



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



This global research project seeks to investigate the interrelationships between land tenure, climate vulnerability and adaptive capacity. Drawing on a comprehensive literature review on how land tenure relates to natural disasters, climate change, food security and displacement the objective is to then focus on the aspects of climate vulnerability and adaptive capacity.

Other methods include the development of 5 country case studies by local experts (the Philippines, Solomon Islands, , Uganda, Syria and Trinidad and Tobago), the establishment of a reference group of experts, peer review and validation at workshops.

This paper presents the preliminary findings of this review. The final outcome will be a global report on the relationships between land tenure, climate vulnerability and adaptive capacity, and the land tools that can be best applied to address the issues raised.

Key Words: land tenure, climate change, vulnerability, adaptive capacity, adaptation, land governance

Introduction

Various authors have explored the relationship between land tenure and natural disasters (e.g Mitchell 2011, Caron, Menon and Kuritz 2014) and land tenure and climate change in general (e.g. Quan and Dyer 2008, Freudenberger 2012), and on land tenure and climate change mitigation (e.g. Runsten 2011, Knox et al 2011). This global study seeks to focus the discussion on the relationships between land tenure, climate vulnerability, and adaptive capacity.

Anthropogenic climate change can be addressed through either the mitigation of greenhouse gases (GHGs), predominantly through decarbonisation but also including carbon sequestration actions, or adaptation to the change. This study seeks to focus on adaptation, which is of great importance to developing countries that are often the most vulnerable to the impacts of a changing climate. Climate vulnerability is a function of exposure to a climate-related hazard and the sensitivity of people, infrastructure, and buildings to a particular hazard, counter-acted by adaptive capacity. Adaptive capacity is reflective of the fact that humans are capable of identifying risks and taking actions to reduce these risks through adaptation measures. It represents the potential of a system to change and adapt and is influenced by factors such as access to information, enabling governance structures, technology and finance etc.

Climate-related variables include temperature, rainfall, storms, sea level rise, and ocean acidification. Resultant hazards include heatwaves, floods, droughts, coastal erosion, landslides, a decline in the health of coral reefs etc. Although not climate-related, other natural hazards that are of concern - particularly to small island developing states - include earthquakes, tsunamis etc. However, it is also important to note that the actual impact of a hazard is often exaggerated by human influence e.g. excess heat in high density urban settlements, flooding through factors such



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



as upstream deforestation, settlements being built in areas at risk, and inadequate or blocked drainage etc. Indirect impacts also need to be important considerations. These include critical sustainability issues such as food and water security which will be increasingly under stress in the future, through changes in both supply (decreasing rainfall) and demand (population growth) factors.

It is useful to differentiate between current and future climate. Extreme events (a consequence of climate variability) such as storms and floods already cause damage in the current day and are projected to increase in frequency and intensity in many parts of the world. Longer term 'slow onset' issues such as rising temperatures, sea level rise, ocean acidification etc. will also reach critical thresholds in the medium to long term.

This Global Land Tool Network (GLTN) supported research study seeks to deepen the understanding of how land tenure and property rights, and tenure security, relate to both climate vulnerability and adaptive capacity. As the discussion on land tenure, land administration and climate change mitigation payments is already considerable, we choose to focus this study on adaptation.

This global study aims to contribute to global knowledge and awareness of how land related policies, tools and approaches that are pro-poor, gender appropriate can support responses to climate vulnerability and support improved adaptive capacity. According to Reale and Handmer (2011) it is important to understand the impact of land tenure, in order to properly understand vulnerability.. This research specifically looks at how land tenure security influences people's vulnerability and what can be done locally to support the implementation of adaptation actions in a way that enhances security of tenure. Specific objectives of the overall project are:

- i. identify the tenure security impacts related to climate change in various contexts;
- ii. Identify and analyze the relationship between land tenure, climate vulnerability and adaptive capacity;
- iii. Identify and analyze the climate change responses by authorities and other stakeholders that impact on tenure security.

The research methods includes an extensive global literature review, the development of 5 country case studies by local experts (Solomon Islands, Philippines, Uganda, Syria and Trinidad and Tobago), the establishment of an expert reference group to provide input to a questionnaire and to provide expert comments on the initial findings, validation at workshops, and a final peer review. The research in this case study is informed by the following research questions:

- a. How does climate change and future risk of climate change affect tenure security in various contexts (e.g. urban, agriculture, forest, pastoral, etc.)?



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



- b. How does insecure land tenure affect resilience and climate change responses?
- c. How does insecure land tenure influence adaptive capacity (e.g. resources, assets, knowledge, governance, innovation etc)?
- d. How do climate change adaptation responses by authorities and other stakeholders (building sea walls, relocation of communities, upgrading water supply, etc) impact on tenure security (in either a positive or negative way)?
- e. What are the land tenure and land administration issues that need to be addressed to allow successful implementation of adaptation actions (e.g. building sea walls, relocation of communities, upgrading water supply, etc)?

This paper presents the interim findings of this review. The final outcome of the global research will be a report with conclusions on how GLTN can potentially address the issues. The knowledge on land tenure, vulnerability and adaptive capacity will be beneficial for informing the projects that seek to improve the tenure security and adaptive capacity of people most affected.

The climate change, tenure insecurity, vulnerability cycle

Climate change can cause a cycle of impact and vulnerability, of which insecurity of tenure is part. The broad stages in this cycle are illustrated in Figure 1 and include:

- Climate change or variability – disaster, drought, sea level rise
- Impact to natural ecosystems, land capability, land use systems
- Impact on livelihoods, water and food security
- Human Mobility (migration, displacement) or conflict
- Loss of access to land and insecure tenure.

Climate change or variability – disaster, drought, sea level rise

According to the IPCC 4th Assessment Report it is very likely that “heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level to rise” (IPCC, 2014b, p10).

Both climate change and climate variability can have a dramatic effect on household livelihood options, and increase the risk of people exposed. For example, natural disasters uncover underlying social, political, economic and environmental vulnerabilities, including land tenure issues. Disasters can cause or exacerbate tenure insecurity, adding to other vulnerabilities households may face (Reale and Handmer, 2011).



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018

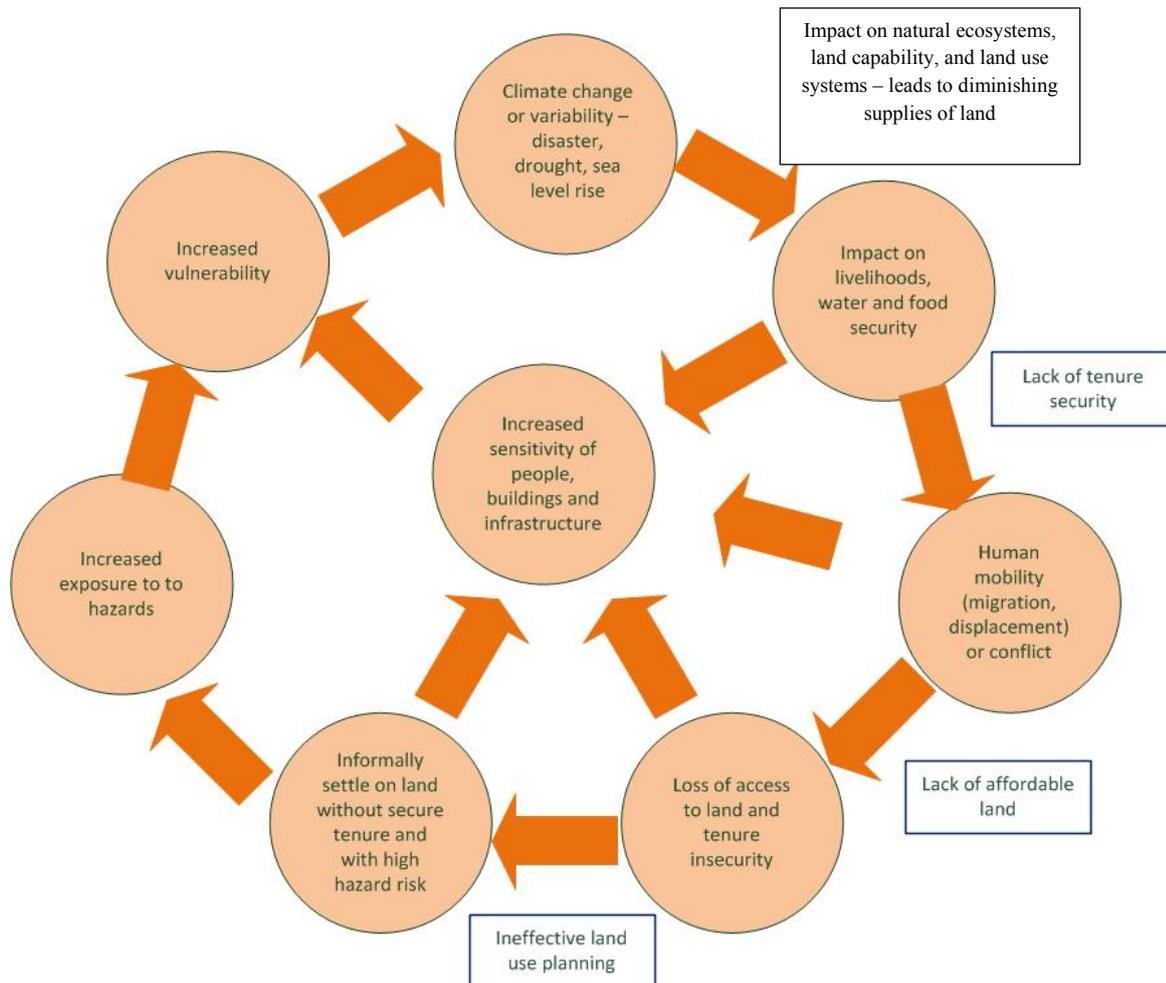


Figure 1 The climate change, tenure insecurity, vulnerability cycle

Impact to natural ecosystems, land capability, land use systems

Climate change or variability elements of drought and water variability also lead to impacts on natural ecosystems, land capability, and land use systems. These changes lead to diminishing supplies of land, placing land use under greater pressure. In some cases the land no longer sustains the occupants. The climate change impacts on agriculture are also affected by development and population pressures and political economy, making good quality agricultural land more scarce and increasing competition for land, further weakening the asset base of the poor. In the absence of guarantees of tenure security, access to land can be lost (Quan and Dyer, 2008). Impact on access to land is the critical decision point and there many possible ways this can affect tenure security. This can depend on whether the tenure is formal or informal:



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



- Formal – the tenure could be legally recognized and also socially recognized in which case the tenure is perceived to be secure. Or it could be legally recognized, but not socially recognized and affected by poor land governance. In this case tenure is likely to be perceived to be insecure.
- Informal – which could be socially recognized but not legally recognized (with strong perception of tenure security), or neither socially or legally recognized (and likely poor perception of tenure security).

Depending on the level of perceived tenure security, there are more options for land users who are considering mobility and perceive their tenure to be secure. If they have land records they may be able to sell their land. If the displacement is a temporary response, family members may be able to protect the land. If their land is customarily held they may be able to move and still retain their customary rights to land. Where tenure is perceived to be insecure, migration or displacement away from their land runs the risk of loss of access to land and landlessness.

Impact on livelihoods, water and food security

When land degradation and reduced rainfall are combined with a need to adapt to changing rainfall conditions, a result is changes in natural ecosystems, land capability and land use systems. The supply of quality arable land reduces and is placed under greater pressure by increased demand for agricultural production and human settlement (Quan and Dyer, 2008). This presents multiple challenges for securing the land tenure rights of people affected. Abrupt or long term changes in land use may lead to human mobility such as migration or displacement, or affect agricultural production. Changes in agriculture and use of natural resources may cause tenure systems to change over time (Quan and Dyer, 2008).

Over one-quarter of the world's urban populations experience some tenure insecurity. The most extreme risk faced by those with insecure tenure is forced evictions. Many people in informal settlements and slums, live in constant fear of being forcibly evicted. The most common justification given for forced evictions include infrastructure projects, international mega-events, and urban beautification (World Bank, 2012). However, insecure tenure also prevents households from connecting to key infrastructure and services. Many government agencies are reluctant to provide infrastructure to informal settlements lacking formal property rights, especially on public land. Security of tenure is also a critical factor in the decision by households to self-investment in property improvements that involves ad hoc adaptation (World Bank, 2012).

Poor tenure security and climate change are both factors that lead to increased sensitivity of people to climate impacts. Where insecure tenure results in the loss of access to land, vulnerability can occur where livelihoods, housing, spiritual or cultural identity are lost, or the



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



household is displaced. Access to land is an important livelihood asset and when land is lost a livelihood is threatened. Where a livelihood is destroyed by a disaster, or conflict, disaster recovery is seriously hampered by poor tenure security (Reale and Handmer, 2011).

Human Mobility including migration away from the affected area is one of the possible responses when access to land is lost, as people seek to build greater resilience and livelihood alternatives. Another possible outcome is conflict over land and resources.

Human Mobility (migration, displacement) or conflict

Human mobility may occur as an adaptation response (voluntary), or through eviction or resettlement or displacement (involuntary). Where it is involuntary there is a real risk of loss of access to land. By leaving behind land they may become landless or arrive at a destination with insecure tenure. Where displaced people or migrants are leaving secure tenure arrangements the result can be landlessness or settling on informal land in inadequate housing, which further contributes to vulnerability (Reale and Handmer, 2011). Another implication for vulnerability includes losing contact with important social networks. These social networks are an important element of people's resilience, and can draw on traditional knowledge, support networks and coping strategies. When they arrive they may face a shortage of affordable land and a lack of safe sites to settle or farm.

Loss of access to land and insecure tenure.

If new settlement and land use leads to conflict over land, then their sensitivity to disasters is also increased through the creation of disincentives created to adapt and prepare. Migrants are more likely to live in poor quality houses, and lack the social networks that support responses to climate and disasters.

Where land tenure is perceived to be insecure there is a disincentive for people to invest in disaster resistant dwellings. The more affluent are better able to relocate to less vulnerable areas, and to use better quality building materials and take protective measures against flooding. Even where there has been no loss of access to land, insecure tenure may act as a deterrent to investments and therefore increase vulnerability to disasters (Quan and Dyer 2008, Reale and Handmer 2011).

Increase in both sensitivity and exposure.

An increase in both sensitivity and exposure means that the people, buildings and infrastructure are more vulnerable to the next climate event. Loss of land is also a cause of increased sensitivity. Weak or ineffective land use planning and building regulations means that people will informally settle on land (ie no formal rights) and often which is very hazard-prone. Their



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



buildings and infrastructure in informal settlements tend to be sub-standard and not adequate to provide protection during extreme events. This increases both their exposure and the sensitivity of people, buildings and infrastructure.

How tenure security can help to reduce vulnerability

Land tenure is about the person-to-person-to-land relationship (Bohannon 1963, Zevenbergen 2011). In other words it is partly about the way others perceive your rights. If we look at the aspect of people, then when provided with tenure security they have a stronger sense of overall security in their home and their land and the livelihoods that rely on these. They therefore have a greater capacity to invest in their land or their home. This investment could be in the form of improvements to the land that reduce climate and disaster risk (e.g levee banks, irrigation, sea walls, sustainable pasture use, drought resistant crops). Or it could be improvements to their house in the form of better building materials which make the building less vulnerable to extreme events. Also, households with secure tenure can make decisions about resource allocation (e.g. seeking off-farm employment, or a change in land use) that can mitigate their risk (Maxwell and Wiebe, 1999). These measures reduce sensitivity and therefore vulnerability.

There are various mechanisms for improving tenure security across the continuum of land tenure rights. For example, on informal tenures that are neither socially- or legally-recognised, this may involve issuing some low cost form of intermediate tenure such as a certificate of occupancy. Issuing land documents (where they exist) are only one way of improving tenure security. A key is to place a priority on those households where they perceive their tenure to be insecure.

If we consider existing buildings in informal settlements, many have used building materials that provide little protection against extreme events. This is no coincidence, as their lack of tenure security and livelihood options prevent investment in good quality building materials. They may also lack connection to Water, Sanitation and Hygiene (WASH) and electricity infrastructure due to local government requirements that connection requires formal land documents. By providing security of tenure, residents of informal settlements may be able to connect to the formal WASH and electricity infrastructure – an element in reducing sensitivity. Where the household makes highly visible improvements in housing materials or infrastructure, they may perceive their tenure to be more secure, since it is a demonstration to others that the land in question is occupied (Reale and Handmer, 2011).

Secure land tenure can be particularly important to those households displaced after a disaster. In this case, different types of land tenure can vary in the level of security of land tenure rights and this is also context dependent. Those households on land tenure types with secure land tenure rights are much better placed to prove their rights to land and gain restitution back to their pre-disaster lands. Those households with insecure land tenure rights or third party rights (such as



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



renters or share farmers or tenants) may be the most vulnerable. Providing secure tenure through formal and social recognition of their rights is an important pre-disaster risk reduction process that can significantly improve their resilience once a disaster occurs.

The positive message is that even small changes to tenure security can make a difference. Public recognition of the right to be there can be important. In a study in the Philippines of informal settlements in two rural barangays, it was found that the local government was aware that some informal settlements had been there for over 40 years and this demonstrates a level of recognition of their rights. Further, the implementation of laws preventing their settlement remains poor. This includes an administrative order preventing building with 15m of roads and railways (Usamah et al, 2014).

Urban land tenure and adaptive capacity

The vulnerability of urban residents varies, depending on their adaptive capacity. Understanding these different levels of adaptive capacity, and land tenure is one element of the sensitivity and adaptive capacity of urban poor. Understanding this variation in vulnerability, tenure security and adaptive capacity is necessary in developing pro-poor adaptation approaches at individual, household, and community levels (Mearns and Norton 2007, World Bank, 2012). An important element of this is the level of social cohesion of the community.

In a review of rural informal settlements in two barangays in the Philippines it was found that the communities faced geographical exposure, economic limitations, inadequate housing and a lack of formal land tenure, compounding their vulnerability. While the lack of formal recognition of their land tenure rights is an element of their vulnerability to disasters, they perceived themselves to be resilient and have secure tenure. This resilience is built through strong social cohesion, a strong sense of community, active community involvement and respect for existing cultures and values. A lack of formal tenure and the frequency of disasters that hit the area has helped to develop an inbuilt resilience. Also, as the informal settlements are compact, this tends to strengthen social cohesion. However, it could also be argued that compactness might increase conflict. The study found that in the disaster recovery phase people, cope by sharing resources and helping each other in rebuilding houses, demonstrating strong social resilience. Conversely, despite the lack of legal recognition, the informal settlers perceived their land tenure rights to be secure. This represents strong social recognition and provides a foundation for adaptive capacity and resilience. The strength of their community cohesion emphasises the importance of social resilience in times of disaster. This is based on the ability of informal settlers to respond to the disruption, thereby building adaptive capacity in a crisis situation (Usamah 2012, Usamah et al, 2014).



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



The quality of housing and WASH systems, are other elements of adaptive capacity. This is closely connected with tenure as those dwellings without formal tenure often are prevented from connecting to the formal water and electricity supply. There is also little incentive to improve house quality. Adaptation of existing and new building requires access to affordable housing, built to recognised climate-resilient standards to provide long term protection against extreme weather.

In Honiara in the Solomon Islands, a lack of formal land tenure isolates members of informal settlements from government and international disaster response services. This lack of formal tenure therefore reduced their adaptive capacity. However, the strength of community structures in these communities can provide an alternative form of adaptive capacity and climate resilience. A city-wide stakeholder assessment of adaptive capacity (the Honiara Urban Resilience and Climate Action Plan) demonstrated the strengths and critical roles of community-level climate hazard awareness and leadership at a whole-of-city level. Examples included the coordination of community fundraising following disaster events, informally arranged temporary housing and improvised evacuation centres (through either local community structures or *wantok* language-based social networks), and detailed understandings of flood risk zones and climatological changes communicated by community elders and leaders (Trundle et al, 2018).

The way that formal and informal housing is integrated can also contribute to adaptive capacity. Where informal and unplanned settlements are interspersed within formal planned residential areas, strong linkages can develop with higher-income households which may improve their adaptive capacity (World Bank, 2012).

Adaptive capacity and security of rural tenures

The climate change, tenure insecurity, vulnerability cycle exacerbates inequality increasing the risk of political disruption, and conflict. Another key factor is that indigenous peoples and local communities with customary land tenure systems own more than half the world's land, but have legally recognized rights to only 10 percent. This is another example of the 'cadastral divide' and places them at risk of evictions, land conflict, and land grabbing, with female land tenure rights defenders very vulnerable. It also threatens livelihoods and can lead to deforestation and degradation (White, 2017).

White (2017) argues that secure, legally recognized land tenure rights are the linchpin of climate change adaptation and poverty reduction for the world's indigenous peoples, local communities, and rural women. This is because almost one-third of the world's population (more than 2.5 billion people) depend on community lands for their livelihoods and food production. However, the discussion above about the importance of social cohesion on adaptive capacity also applies to rural customary and communal lands – which are social tenures. If these social tenures have



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



social recognition this can lead to strong adaptive capacity. They may not need land documents to improve tenure security or indeed adaptive capacity. Another way of saying this is that formal legitimacy may not necessarily improve adaptive capacity of socially legitimate land tenure regimes. The key is seeking to improve the security of tenure of the customary land tenure system by the most appropriate method. This is easier when the community has social cohesion and can help to protect the land tenure rights from external threats.

Where climate change impacts poor rural households dependent on agriculture, another potential good land governance principle includes recognising, respecting and recording legitimate (socially recognised) land tenure rights. However, many of these households may also be at risk of disasters, or be internally displaced, and recording land rights may change the power balance - so care is needed. These problems can intensify with a changing climate and political instability. ANGOC (2017) made specific suggestions based on local consultations in Asia to improve land governance. These included providing support services, crop insurance, expansion of socialized credit windows, establishment of market links for farmers' produce and mandatory social preparation for potential agrarian reform beneficiaries (ANGOC, 2017).

Recognising and respecting their land tenure and property rights allows local communities and households to sustain livelihood options and choose their own development path. Experience shows that households with secure tenure are more likely to protect these communal lands, to the benefit of all. Also those community forests that are legally recognised store more carbon and have lower deforestation rates than government protected areas (White, 2017).

Migration is one of the strategies used in rural areas to improve resilience in areas where there is competition over resources. How much migration contributes to resilience depends on adaptive capacity, vulnerability and exposure to risk. Where tenure security supports adaptive migration responses it supports adaptive capacity (Brzoska and Fröhlich, 2016). In the Karamoja region of Uganda, policies discourage pastoralism, on the basis that herding large number of livestock is considered outdated and not economically viable. However, value chain analysis shows that livestock value chain can be unlocked with simple adaptive measures. Livestock has value and this has added to the wealth of the Karimojong. Production and product development will depend on many factors but securing land tenure rights that enable the product (livestock, meat and others) to thrive is critical. This includes land tenure regimes that support and don't prevent the existing short- and long-term migratory patterns of people and livestock. Thus the importance of land tenure rights security in enabling adaptive capacity for the pastoralists is clear. The policy changes by government are hampering the adaptive capacity of the pastoralists. By contrast, guaranteeing land tenure rights that would enable access to pastures and water would help increase adaptive capacity of the pastoralists in Karamoja. In a society with legal dualism such as Uganda, enhancing the communal ownership with rules of temporary migration, learning from



traditional mechanisms of kraal and elders' consultation on migration routes and destinations (ideally within the Aromar system), will help to protect grazing lands as inputs to the value chain (Lwasa, 2018).

Securing land tenure does not guarantee improved adaptive capacity on its own. It should be considered as one of a range of measures to improve adaptive capacity. For example in Uganda, securing communal land tenure rights would give pastoralists access to pasture and water through the year and for all seasons is the critical cornerstone of the public policy intervention for enhancing adaptive capacity. The securing of land tenure rights can be coupled with providing timely and useful weather information on short term but also seasonal basis to enable herding decisions for product development and sustenance (Lwasa, 2018).

Legal and policy frameworks can provide for informal social institutions to undertake sustainable management of access to land and resources, possibly using traditional resource management (Quan and Dyer, 2008).

Lessons for land governance and adaptive capacity

The Sustainable Development Goals indicators on land provide incentives to address the issue of tenure insecurity. Monitoring of the SDG land indicators will require the land sector to improve data collection. Many countries are lacking good data on tenure security, making it difficult to prioritize adaptation and other actions (Cornish, 2018).

Pinheiro Principles

Although the linkages are complex, land use change and adaptive interventions by the state will have a variety of tenure implications related to human displacement and migration, growth in competition over land, and land use conflict. According to Pinheiro Principle 2:

“2.1 All refugees and displaced persons have the right to have restored to them any housing, land and/or property of which they were arbitrarily or unlawfully deprived, or to be compensated for any housing, land and/or property that is factually impossible to restore as determined by an independent, impartial tribunal.

2.2 States shall demonstrably prioritize the right to restitution as the preferred remedy to displacement and as a key element of restorative justice. The right to restitution exists as a distinct right, and is prejudiced neither by the actual return nor non-return of refugees and displaced persons entitled to housing, land and property restitution” (Centre on Housing Rights and Evictions, 2015, p9).

This is a land governance challenge that will be too great for many states. It calls for land governance approaches able to adapt to deliver adequate tenure security for all, including



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



refugees and displaced persons, and provide incentives for the sustainable management of land and resource, and reduced vulnerability. This will require solutions suited to the local context and sufficient flexibility to allow land tenure rights to be reassigned (Quan and Dyer, 2008). At the local level, the response is essentially a land administration issue. The Pinheiro Principles recommend that States designate specific public agencies to be responsible for enforcing property restitution decisions, and that local and national authorities be legally obliged to accept the decisions of these agencies.

Humanitarian aid

Also, if we consider climate-related extreme events and disasters, the structures for humanitarian aid have difficulty working within complex urban dynamics that come with climate change and migration and lack of tenure security. Land is valuable in urban areas. However access to land is often contested and its settlement and use is subject to local customary norms and standards. Many people live in illegal or informal settlements with government agencies reluctant to provide infrastructure and services. Both the informality and the lack of services reduce adaptive capacity. In this context a challenge for humanitarian agencies is understanding the needs of marginalized and vulnerable groups and responding their needs. Marginalised groups may be excluded from humanitarian or disaster response aid through a lack of formal identity. Squatters, and people with third-party land tenure rights such as renters, often miss out on other public upgrading programs such as strengthening tenure rights (Dodman et al, 2013). Those who perceive their tenure to be insecure may leave a family member behind to protect the land from others during the emergency evacuation phase after a disaster, and there can be a strong pull back to the pre-disaster land at the earliest opportunity (Mitchell, 2011).

Political economy and human rights

Political economy is an important element in both tenure security and adaptive capacity. Land tenure and property rights follow the power structures in a society, with the powerful elite having more land tenure and property rights. Climate change adaptation also involves understanding resilience within dynamic social-ecological systems. The political economy and power relationships shape how climate risk is understood and which adaptation actions are prioritised (Ensor et al, 2015). When displacement or migration occurs, it is the inherent power relations in the society that decide the probability of conflicts occurring.

Involvement of local people and their local, traditional, or indigenous forms of knowledge in decision making is critical for ensuring their human security (IPCC, 2014a). An important part of this on customary land is the cultural norms associated with customary tenure regimes. Traditionally these customary land tenure system norms have worked together with customary adaptation processes to support adaptive capacity. However, impacts such as urbanisation and



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



globalisation have eroded customary culture and knowledge and some of this traditional adaptive capacity has been lost.

This can be addressed to some degree by the integration and co-production of local traditional knowledge with scientific knowledge to help increase adaptive capacity and reduce vulnerability (IPCC, 2014a). This also applies to land tenure regimes. Undertaking household surveys and mapping to identify the complex people to land relationships on customary or other types of informal or social tenures, may be needed to capture the traditional (and often verbal) knowledge of the customary land tenure system norms.

Ensor et al (2015) proposes protecting marginalised groups and individuals by adopting a rights-based approach to development, arguing that human rights principles enable resilience practice to become pro-poor. A rights-based approach changes the balance of power in favour of the marginalised (Ensor et al, 2015). If we apply this to land tenure, property rights are secured when rules and norms are enforced by the different legal and land administrative provisions. This can include through customary land tenure systems. Rights-based strategies could seek to have property rights recognised by formal or informal land administration “regimes”, or through social and political arbitration or advocacy processes, or through appeal to legal or administrative systems (Ensor et al, 2015). However, human rights-based approaches can be difficult to implement and enforce at the local level. The costs or time required to implement may mean the intervention is prohibitive for agencies.

Challenges for land administration

In the context of this paper, land-related disaster vulnerability factors that land administration should address include unsustainable land use, weak or ineffective land use planning, non-existent or poorly enforced building codes, and weak land administration. Vulnerable settlements are allowed to develop on flood plains, water catchments or other unsuitable areas. Consequently, natural protections are destroyed and communities face the risk of the impacts of natural disasters. Failure of the land use planning system to control the spread of informal settlements is widespread. Allowing people to settle on hazard-prone land creates a challenge that is difficult to address later and may require settlement of communities – which is a very challenging process. Another relevant dimension of vulnerability is the quality of housing construction and how resilient it is to extreme events. Non-existent or poorly enforced building codes exist in many affected informal settlements, resulting in poor quality housing. Also, in many cases the poor could not afford appropriate building materials.

Land administration should be considered as fundamental to addressing these vulnerability challenges at the local level. In particular, more effective and enforced land use planning can address human mobility onto unsuitable land. The provision of more affordable land and housing



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



in safe locations and within reach of livelihoods can help accommodate migrants while addressing tenure insecurity, and providing tenure security to people exposed to climate variability or change can reduce their sensitivity. However, this will require information on vulnerability and adaptation plans into the land administration process.

A challenge for land administration is the cadastral divide – with an estimated 70% of land parcels not having their land tenure rights formally recorded. This is a challenge for vulnerable rural communities and for urban and peri-urban informal settlements. Legal and policy frameworks often fail to provide equal land tenure rights for women, the vulnerable and marginalized increasing their vulnerability (UN-HABITAT 2010, Cornish 2018).

Addressing the land tenure insecurity issues that affect adaptive capacity requires land agencies to have sufficient capacity. In many countries, this is not the case and weaknesses in capacity are highlighted when a disaster occurs. Land agencies also struggle with capacity challenges after natural disasters. This affects their ability to quickly process decisions about rights to land of the potentially thousands of people displaced by a natural disaster. Often in the global south, the existing land administration system is in poor condition with records only covering formal tenures. There may be no land records for rural lands, and people may live too far from land offices to record land transactions. Improving the capacity of land administration agencies is important in areas at high hazard risk.

Adaptation and DRR projects provide an opportunity to improve capacity to help build resilience and improve tenure security (Mitchell, 2011). Practical measures such as developing a well-maintained register of all interests in land, and their level of tenure security, would be of great benefit to land agencies if a disaster occurs. (Mitchell, 2011).

Concluding remarks

This paper has explored the inter-linkages between climate impacts, vulnerability, tenure insecurity and adaptive capacity and provided some preliminary findings. These interlinkages are complex and cover issues such as displacement, conflict and livelihoods. More research is warranted into the role of strong social tenures in developing adaptive capacity. This includes how to we improve the tenure security of social tenures so that it supports adaptive capacity.

More research is also needed into how rural land tenure regimes can evolve while maintaining or improving adaptive capacity, how a human-rights based approach to land tenure could support improved adaptive capacity, and how a human-rights based approach could be practically implement and enforced at the local level.



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



Acknowledgement

The authors would like to thank Prof Jaap Zevenbergen for reviewing a draft of this paper and for his insightful comments.

References

- Asian NGO Coalition for Agrarian Reform and Rural Development (ANGOC), (2017), *From the Farmland to the Table: Exploring the Links Between Tenure and Food Security*, Quezon City: ANGOC and GLTN, Quezon City, Philippines.
- Bohannon, P. (1963). "Land", "Tenure" and "Land Tenure", in Daniel Biebuyck (ed.) *African agrarian systems*, International African Institute, London, pp 110–15.
- Brzoska, Michael and Fröhlich, Christiane (2016) Climate change, migration and violent conflict: vulnerabilities, pathways and adaptation strategies , *Migration and Development*, 5:2, 190-210, DOI: 10.1080/21632324.2015.1022973.
- Caron, C., Menon, G., and Kuritz, L., (2014) *Land Tenure & Disasters*, USAID Issue Brief, 13 Nov 2014 .
- Centre on Housing Rights and Evictions (2015) *The Pinheiro Principles: United Nations Principles on Housing and Property Restitution for Refugees and Displaced Persons*, Geneva, Switzerland.
- Cornish, L., (2018) Q&A: Why land tenure rights are worth a multimillion dollar investment, Accessed 2/2/18, <https://www.devex.com/news/q-a-why-land-rights-are-worth-a-multimillion-dollar-investment-91935>.
- Dodman, D., Brown, D., Francis, K., Hardoy, J., Johnson C., and Satterthwaite D., (2013) *Understanding the nature and scale of urban risk in low- and middle-income countries and its implications for humanitarian preparedness, planning and response*, Human Settlements Discussion Paper Series - Climate Change and Cities 4, International Institute for Environment and Development, London.
- Ensor, J.E. Park, S.E. Hoddy, E.T. Ratner B.D. (2015) A rights-based perspective on adaptive capacity, *Global Environmental Change*, 31 (2015) 38–49.
- IPCC, (2014a) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken,



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



- K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1132 pp.
- IPCC, (2014b) *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- Lwasa, S., (2018) *A case study for Uganda on land tenure, climate vulnerability and adaptive capacity in Karamoja*,
- Maxwell, D., and Wiebe, K., (1999) Land Tenure and Food Security: Exploring Dynamic Linkages, *Development and Change*, Volume 30, Issue 4, October 1999 , Pages 825–849.
- Mearns, R., and Norton, A., (2007) Equity and Vulnerability in a Warming World: Introduction and Overview, In: *Social Dimensions of Climate Change Equity and Vulnerability in a Warming World*, Edited by R. Mearns and A. Norton, New Frontiers of Social Policy, Washington D.C.
- Mitchell, D., (2011) Assessing and Responding to Land Issues in Disaster Risk Management, *FAO Land Tenure Manual 3*, Rome.
- Quan, J., and Dyer, N., (2008) *Climate Change and Land Tenure: The Implications of Climate Change for Land Tenure and Land Policy*, FAO Land Tenure Working Paper 2, IIED (International Institute for Environment and Development) and Natural Resources Institute, University of Greenwich, FAO, Rome.
- Reale, A., and Handmer, J., (2011) Land tenure, disasters and vulnerability, *Disasters*, 2011, 35(1): 160–182.
- Trundle, A., McEvoy, D., and Mitchell, D., (2018) *Land Tenure, Climate Vulnerability, & Adaptive Capacity Project Honiara, Solomon Islands - Case Study Report*.
- Usamah, M., (2012) *Land Tenure Security and Resilience to Multiple Disasters: A Study of Camalig Municipality, Province of Albay, the Philippines*, PhD Thesis, RMIT University.
- Usamah, M., Handmer, J., Mitchell, D., and Ahmed, I., (2014) Can the vulnerable be resilient? Co-existence of vulnerability and disaster resilience: Informal settlements in the Philippines, *International Journal of Disaster Risk Reduction*, Volume 10, Part A, , Pages 178-189.



Land Governance in an Interconnected World

ANNUAL WORLD BANK CONFERENCE ON LAND AND POVERTY
WASHINGTON DC, MARCH 19-23, 2018



White, A., (2017) Opinion: Leaving no one behind — Why land tenure rights must be the linchpin of sustainable development, Devex, Accessed 2/2/18, <https://www.devex.com/news/opinion-leaving-no-one-behind-why-land-rights-must-be-the-linchpin-of-sustainable-development-90593>

World Bank (2012) Climate Change, Disaster Risk, and the Urban Poor: Cities Building Resilience for a Changing World, Judy L. Baker (Editor), Washington DC.

Zevenbergen, J., (2011) A Pro-Poor Land Recordation System; Towards a Design, Pre-publication, with support from UN-HABITAT staff and EGM participants, Enschede, 25 April 2011.