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Land Tenure and Disaster Risk Management

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Introduction

In recent years there has been growing attention to land issues within the Disaster Risk Management (DRM) community. This emergent importance is exemplified by the establishment of land issues as one of the key priorities for the period of 2005-2015 within the Hyogo Framework for Action (2005), and the increasing allocation of resources and investments in projects by inter-governmental and non-governmental organizations in this area.[1] Land use management and land tenure in particular, play significant roles in the various stages of DRM. While successful land use management enhances resilience to disasters, it also creates better conditions for post-disaster reconstruction. Moreover, effective land use planning is not only important for securing the shelter needs of disaster affected populations, but also for preserving their livelihoods. When a community, city or region lacks effective land use planning, natural hazards are more likely to result in massive human and economic costs. Thus, land use planning is increasingly considered a central component of sustainable development.

Land tenure, as an important part of land issues, carries significant relevance for DRM. Like other land issues, tenure security is important for different cycles of risk management. When tenure security is lacking, natural hazards are more likely to generate higher costs for households, and to pose serious challenges to livelihoods. When tenure security is lacking, disincentives are enormous for the reestablishment of housing and livelihoods after disasters. Uncertainty in identifying land rights makes it difficult for housing providers to construct shelters. Tenure insecurity also deters investments in land. Moreover, disasters can cause the loss of official records concerning land ownership. For this reason, tenure security or land tenure

[1] For example, the World Bank and the Inter-American Development Bank implemented fifty projects on land administration for the period of 1994-2004. The $2.7 billion projects aimed at establishing reliable systems of land records and implementing mechanisms to secure land tenure (OAS 2006: 2).

requires further attention by international, national, and local DRR stakeholders, and understood as one of the central DRM items shaping vulnerability in the wake of disasters.

Having noted the significance of land tenure, this two-part study will attempt to elaborate its relation to Disaster Risk Management. The first paper will examine the land tenure-DRM link in the broader context of land use management. In this regard, several key issues concerning tenure security will be discussed. In the follow-up paper, the Brazilian case study will discuss the regularization of informal settlements made after the transition to democracy in 1988. In addition, the paper will examine to what extent recent river and flash floods (the January 2011 floods i.e.) pose a serious risk to Brazil in the context of the prevalence of informal settlements throughout the country.

Land Use Planning, Land Use Management, and Land Tenure

ISDR's *Terminology of Disaster Risk Reduction*[2] defines land use planning as a:

> Branch of physical and socio-economic planning that determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community taken into account in resulting decisions.
>
> Land-use planning involves studies and mapping, analysis of environmental and hazard data, formulation of alternative land-use decisions and design of a long-range plan for different geographical and administrative scales.
>
> Land-use planning can help to mitigate disasters and reduce risks by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion, and in the siting of service routes for transport, power, water, sewage and other critical facilities.

GTZ's *Land Use Planning* study describes land use planning as "an iterative process based on the dialogue amongst all stakeholders aiming at the negotiation and decision for a

[2] It is available online at: http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm

sustainable form of land use in rural areas as well as initiating and monitoring its implementation". In addition, this study considers land use planning an essential element to achieve a sustainable form of land use (p.16).

The UN publication, *Land and Natural Disasters: Guidance for Practitioners*, views land issues including land use planning and land tenure important to several humanitarian sectors such as the following: shelter, protection, livelihoods, and early recovery (p.4-5).

Land use management is defined as a "planned method of aggressive action to correct or prevent territorial imbalances, the disorderly occupation and use of land, and the social and environmental externalities that provoke spontaneous economic growth over which the market's control mechanisms are insufficient" (de Cerdan et al 1998: 107). After having established a critical linkage between risk management and land use management, de Cerdan and her colleagues offer three types of intervention policies: policies of conservation and maintenance, corrective policies, and development policies (p.102).

USAID's *Natural Resources Management and Development Portal* defines land tenure as "the institutional (political, economic social, and legal) structure that determines" the following two issues: (1) how individuals and groups secure access to land and associated management of land resources including trees, minerals, pasture, and water, and (2) who can hold and use these resources -- for how long and under what conditions.[3] Thus, land tenure basically refers to the conditions under which land resources are held and used (Kirk et al 1998: 38). In addition, tenure insecurity is defined as "the situation when landholders or reconstruction actors are reluctant to contribute time, capital and money because of uncertainty over ownership or other rights to land" (Fitzpatrick 2008: 4).

[3] It is available online at: http://www.rmportal.net/library/content/tools/land-tenure-and-property-rights-tools/copy_of_definition-land-tenure

Land and Natural Disasters discusses seven potential sources of tenure insecurity after a natural disaster: (i) poor, incomplete, out of date or fraudulent land records before the disaster, (ii) lost or damaged land records, (iii) inadequate legal recognition of forms of tenure other than ownership, (iv) land grabbing by elites or powerful groups, (v) inheritance disputes among family or community members, (vi) inappropriate measures to restrict reconstruction in areas designated as unsafe, and (vii) breakdown of formal or customary land institutions. (p.75)

On the basis of the above definitions, one should note that land tenure is one of the central components of both land use management and land use planning. Conditions under which land resources are held (land tenure) are key to the efficient use of land resources (land use planning) in a risk-free manner (land use management). Therefore, land tenure deserves a great deal of attention not only for sustainable development but also for disaster risk reduction (UN HABITAT 2010, Kirk et al 1998: 1-5, Cerdan et al 2008: 85).

The Significance of Land Tenure Before, During, and After Disasters

Land tenure is one of the key components of risk management for various stages of the DRM cycle. The way land resources are owned or rented through state, private or communal forms of property influences to a great extent the degree to which natural hazards pose risks. First of all, informal settlers or illegal settlers who lack tenure security are more likely to suffer from deficient infrastructure due to the legal status of their households. Therefore, natural hazards carry high levels of risks for those settlements (World Disasters Report 2010: 53). This is important for understanding how tenure insecurity enhances vulnerability to natural hazards in the pre-disaster period of DRM. Second, settlements without secure land tenure are more likely to be too poor to gain access to necessary insurance mechanisms. As a result, tenure insecurity also affects non-structural elements of disaster mitigation efforts. Also, land tenure might be less

of an urgent issue during the moment of disaster (humanitarian relief stage) as compared to the pre- and the post-disaster periods of mitigation and reconstruction (Brown et al 2006a: 2-7); however, disasters may also cause the loss of land ownership records. When land records are lacking, reconstruction efforts could be more difficult as builders may not be very willing to construct new buildings in those places (Fitzpatrick 2008: 4-6, Mitchell 2009: 131, UN HABITAT 2010). For this reason, tenure insecurity could pose serious challenges for the post-disaster period of DRM.

Mitchell 2009 comes up with a nice table assessing the relevance of land issues in the different stages of the DRM cycle. Land tenure related issues are highlighted in the following table.

Table I: Typical land issues to be considered in a rapid assessment

Pre-Disaster Condition	Pre-disaster attitudes to land
	The main features of the property rights and land tenure systems
	Existing land policies
	Key land laws and regulations
Post-Disaster Condition	The impact of the disaster on individual properties
	The impact of the disaster on communal and customary lands
	The impact of the disaster on land records
	The impact of the disaster on vulnerable groups
	The impact of the disaster on land agencies
	The demand for resettlement and related needs.

Source: Mitchell 2009: 128

Key Issues Concerning Land Tenure

A study on the relevance of land tenure for disaster risk management should deal with several issues. In this regard, the following section will discuss the following items:

(i) Property rights

(ii) Evidence of land and land conflicts

(iii) Land Reform

(iv) Livelihoods

(v) Land policies and political commitment

(vi) Federal, state, and municipality level governmental authority

(vii) Customs and traditions

Property Rights

Property rights systems are central components of land tenure. The way land is owned or rented depends on the extent and type of property rights. In general, four types of property rights regimes can be identified: (i) open access (access to resources is free and open to all), (ii) state property (government regulates and controls access to land resources), (iii) common property (a specific group has exclusive rights), and (iv) private property (individuals or corporations have exclusive and transferable rights). The four types of property regimes differ in "the nature of ownership, the rights and duties of owners, the rules of use and the locus of control" (Brown et al 2006b: 5). For both resilience to natural disasters and restoration of livelihoods after disasters, it is critical to have clear and predictable property rights. As suggested earlier, informal settlers or illegal settlers pose a serious problem for both mitigation and reconstruction phases of DRM. Moreover, the extent of rights needs to be supported by clear rules concerning conditions for

tenancy. That also requires a well functioning system of rule of law. (Kirk et al 1998: 15-6, World Disasters Report 2010: 53) Otherwise, land tenure is plagued by uncertainties, and worst of all, land conflicts, which might result in devastating consequences for risk management (Brown et al 2006b). For this reason, solid systems of property rights are essential for tenure security and disaster risk management.

Evidence of Land and Land Conflicts

Land conflicts pose substantial challenges to tenure security. Conflict can stem from the lack of official documentation for land ownership. In addition, land policies, laws, and regulations can be ambiguous, resulting in land conflicts. In this case, both mitigation and re-construction tasks of disaster risk management could face serious deficiencies. Tenure security requires effective management of land conflicts. Legal frameworks are critical elements in resolving land disputes. Moreover, disasters can cause the loss of official documentation of land ownership. Fraudulent, damaged or lost land records could hinder re-construction plans to a great extent (Brown et al 2006a, Fitzpatrick 2008: 4-6). For this reason, it is urgent to resolve land ownership disputes and land claims before reconstruction. A central problem for most developing countries is that land records have not been kept up to date, seriously limiting the timely resolving of land disputes (Mitchell 2009: 131). Disorderly land records also make land conflicts more likely. Unfortunately, many developing countries have to undertake fundamental reform in this area. In this regard, they need financial and technical help from the international community and non-governmental actors engaged in DRR. Up-to-date, well-maintained, and credible land records systems are key to tenure security.

Land Reform

An effective system of land administration is one of the key elements for tenure security (Quan 2005). In contrast, unequal distribution of land resources in a country poses severe problems. In many developing countries in the world, the possession of land resources by only a small percentage of the people is a typical structural problem hindering agrarian development. In addition, it poses an important problem for disaster risk management. When a majority suffers from the lack of land resources, informal and illegal settlements will likely become more numerous. In such cases, weak infrastructure and lack of insurance mechanisms in these settlements will enhance vulnerabilities to natural hazards to a great extent. For this reason, land reform efforts to resolve the question of unequal land distribution should be considered an important issue in regard to land tenure in the context of disaster risk management. In this context, land reform could be a critical part of tenure security in many developing countries. In the follow-up paper, land reform issues will receive particular attention when examining land tenure in the case of Brazil.

Livelihood

Land tenure is an important issue not only for structural and non-structural measures related to pre-disaster mitigation efforts but also for incentives concerning livelihood opportunities (Mitchell 2009). If farmers or informal settlers do not have tenure security, they are less likely to make investments for production. Then, both disaster risk management and sustainable development will be negatively affected in those settings. The following quote by a tenant farmer in the Philippines is a good example of how tenure insecurity hinders incentives for production:

> "The rice field we farm is low-lying and flooded on a more-or-less annual basis…Flooding greatly reduces our harvest…This land would be better suited to growing plantation trees. However, as tenant farmers, we cannot plant trees. Even if we got permission, as tenants, we would have no guarantee that the landowner would not reclaim the land (and trees)…We have no tenancy contract-landowners do not need to give notice or compensation to their tenants if they wish to reclaim their land" (World Disasters Report 2004, quoted in Brown et al 2006b: 8).

When people do not have tenure security, there is not much incentive to invest in their land. In many countries throughout the Latin American and Caribbean region there are large numbers of informal property holders and insecure property rights for women and indigenous groups. As a result, these countries experience disadvantages in terms of sustainable development. In addition, the negative repercussions on livelihood conditions enhance the risks to natural disasters.

Land policies and political commitment

Tenure security is possible to a great extent if it is maintained by a well functioning rule of law and effective political-governmental authority. Clear sets of land policies and laws are essential elements in this regard. If land policies do not address ambiguous lines of demarcation, unclear land ownership or property rights, then one cannot expect a solid legal basis for land tenure. Moreover, political commitment and governmental authority in favor of comprehensive land policies and legal frameworks are fundamental elements to sustain an effective system of land tenure (Mitchell 2009: 133-34, Reale and Handmer 2011: 160).

The legal framework concerning land tenure is one of the basic pillars of efficient land use management. In this regard, de Cerdan et al 2008 presents a nice analysis of land use management laws. This study argues that "a land use management law constitutes the maximum aspiration in legal matters for land use management". It cites several key components for land

use management law: object and purpose of law, a clear definition of concepts, a definition of the related agencies, plans, and projects, conditions of viability of the plans from sociopolitical, economic/financial, and technical viewpoints, and responsibilities at the municipal and local government levels (p.136-7). Like land use management, clearly-specified rules and responsibilities outlined in a legal framework that is well supported by the political authorities, are essential to sustaining an efficient system of property rights and land tenure.

Federal, state, and municipality level governmental authority

The existence and implementation of land policies is often divided among different levels of governmental authority. The central and local governments may have overlapping or conflicting sets of responsibilities in this area. In federal states, the process of determining which roles belong to the central government and which to local authorities is further complicated. An ideal system of land tenure requires a well functioning set of relations among governmental authorities at different levels. For this reason, the way authority is divided across these levels of government is an important issue when one examines tenure security in regard to disaster risk management. Ambiguous lines of authority across different levels of government and excessive centralization of authority could make the effective implementation of land policies difficult. In the follow-up paper, Brazil's land policies will be examined in reference to the federal, state, and municipal level authorities. A successful system of tenure security or land tenure requires an efficient allocation of legal responsibilities across different levels of government.

Customs and Traditions

Customs and traditions could play important roles in resolving disputes concerning land conflicts. In many developing countries, customs, traditions, and religious values could be

helpful in dealing with land conflicts in the post-disaster period of disaster risk management. In his brief note on the Aceh, Indonesia case study, Daniel Fitzpatrick argues that community-based adjudication of land rights can be very helpful for disputes concerning tenure security. In the Tsunami affected Aceh case, most land records were severely destroyed during the tsunamis in December 2004 and March 2005. By working with the Indonesian government and the World Bank, the RALAS (Reconstruction of Land Administration Systems in Aceh and Nias) project was a successful community-driven effort to restore documentation in regard to land rights. The project aimed at providing systematic land title certification. The religious authorities also played important roles in the project (Fitzpatrick 2008: 4-7). The village head and village imam (religious official) helped in the identification of heirs where landowners passed away in the disaster. The religious court also became involved in the process of issuing new land certificates. The RALAS project, Fitzpatrick argues, was a success story in general as it helped to avoid delays and conflict during the reconstruction efforts. Furthermore, customs and social attitudes also play important roles in helping informal settlers find sympathy from society. Social attitudes may also be important in post-disaster land grabbing (Reale and Handmer 2011: 169-70)

Conclusion

Land issues have received an increasing level of attention from the international DRR community in recent years. The Asian tsunami in 2004 became a particularly notable turning point in this regard. Like land use planning and land use management, land tenure is one of the key issues for disaster risk management. Tenure security is related to different stages of the DRM cycle, and affects to a great extent the level of vulnerabilities to natural disasters. The relevance of land tenure for DRM is certainly not only for housing but also for livelihood in the post-disaster period of reconstruction.

The paper has discussed several key issues concerning land tenure: property rights, evidence of land/land conflicts, land reform, livelihood, land policies and political commitment, federal, state, and municipality level governmental authority, customs and traditions. Only the examination of all these issues can provide a comprehensive analysis of land tenure in the context of disaster risk management. It should be noted that land issues, including tenure security, deserve further attention in the realm of DRM. Despite the fact that the Hyogo Framework for action (2005-2015) noted land issues as a priority DRM item, international DRR actors and national governments need to allocate more resources in this area. If clear sets of rules and effective implementation concerning land use management, land use planning, and land tenure are lacking, natural hazards could result in severe damages for housing and livelihoods. For this reason, political commitment on the part of federal, state, and local governmental authorities to land issues, including land tenure, should be considered as one the key components of successful DRM.

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