Land Use Policy 48 (2015) 190–198

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Climate resilient urban development: Why responsible land governance is important

David Mitchell[a,*], Stig Enemark[b], Paul van der Molen[c]

[a] RMIT University, School of Mathematical and Geospatial Sciences, GPO Box 2476 V, Melbourne, Australia
[b] Aalborg University, Department of Development and Planning, Fibigerstraede 11, DK-9220 Aalborg, Denmark
[c] University of Twente, Geoinformation Science and Earth Observation, Hengelose straat 99, Enschede, The Netherlands

ARTICLE INFO

Article history:
Received 30 September 2014
Received in revised form 11 May 2015
Accepted 27 May 2015

Keywords:
Climate resilient urban development
Responsible land governance
Land administration
Tenure security
Land-use planning and control

ABSTRACT

In less-developed countries, the major global pressures of rapid urbanization and climate change are resulting in increased vulnerability for urban dwellers. Much of the climate impact is concentrated in urban and coastal areas, as urban development spreads into areas that are hazard-prone. Often this development is dominated by poor quality homes in informal settlements or slums on informal or illegally occupied or subdivided land.

Urban development needs to be more climate-resilient to meet the post millennium development goals (MDGs) agenda. One of the elements in achieving climate-resilient urban development is the degree to which climate change adaptation and risk management are mainstreamed into two major elements of land governance, viz. securing and safeguarding of land rights, and planning and control of land-use.

This paper proposes ways in which the growth of human settlements can be better managed through responsible governance of land tenure rights, and effective land-use planning to reduce vulnerability, provide adequate access to safe land and shelter, and improve environmental sustainability.

© 2015 Elsevier Ltd. All rights reserved.

1. Introduction

Two of the key global challenges for land and people in less-developed countries are rapid urbanization, and the threats posed by climate change. In each case, there are significant impacts to poverty, disaster risk, and access to land.

Cities only occupy approximately 3% of the earth's land area. However, the year 2007 has been a tipping point where the global urban percentage approached 50%, and is projected to reach approximately 70% by 2050 (United Nations, 2008). The total world urban population is estimated to grow from 3.3 billion people in 2007 to 6.4 billion by 2050. This whole increase in urban population is estimated to occur in less developed regions with estimated growth from 2.3 billion people in 2007 to 5.3 billion in 2050 (United Nations, 2008). In many less-developed countries, one of the drivers of urban growth has been economic growth. Whilst in other countries urban growth occurs despite no economic growth and in these countries there is likely to be a greater socio-economic impact.

The Working Group 2 submission to the 5th Intergovernmental Panel on Climate Change (IPCC) assessment report notes that approximately three-quarters of the world's urban population, and most of the largest cities, are now in low- and middle income countries and that much of the climate risks are concentrated in urban areas (IPCC, 2014). Further, approximately one in seven of the world's population live in poor quality, overcrowded urban accommodation with inadequate provision of basic infrastructure, and much of the vulnerability to climate change is concentrated in these settlements (Ibid). Many of those most affected by extreme weather events live in urban centres (Ibid). At present, 10% of the world's population (634 million people) live in the Low Elevation Coastal Zone (less than 10 m above sea level), 360 million of whom are in urban areas, and 100 million people live less than one metre above mean sea level (McGranahan et al., 2007). Small Island Developing States (SIDS) are particularly affected as they are low-lying and with a high proportion of coastal urban areas that are densely populated. These are among the regions that will be most vulnerable to climate change.

The rapid growth of megacities in less-developed countries causes severe ecological, economic, and social problems, especially for the urban poor, who often build in hazard-prone areas due to a

* Corresponding author at: RMIT University, Melbourne, Vic., Australia. Tel.: +61 399252420.
E-mail addresses: david.mitchell@rmit.edu.au (D. Mitchell), enemark@plan.aau.dk (S. Enemark), p.vandermolen-2@utwente.nl (P. van der Molen).

http://dx.doi.org/10.1016/j.landusepol.2015.05.026
0264-8377/© 2015 Elsevier Ltd. All rights reserved.

shortage of suitable land. It is increasingly difficult to manage this rapid urban growth in a sustainable way, and many urban governments do not ensure sufficient land is available for housing in safe areas for the urban poor.

It is increasingly understood that rapid urban growth and increased climate risks mean greater vulnerability. Friend et al. (2014) argue that there is a growing realization that climate change effects will be evident in the failure of the complex systems that urban areas depend on. (Yohe et al., 2007) argue that vulnerability to climate change impacts will be most severe when combined with stresses from other sources, such as risks from unequal access to land and resources, natural hazards, environmental degradation, poverty, and food security. Reduced food security, environmental degradation and natural disasters may be directly related to climate change, while external stresses such as rapid urbanization have a significant impact.

Rapid urbanization challenges the basic human right of access to suitable land and shelter. Access to land depends on secure land tenure rights which is a basic requirement for shelter, livelihoods and food security. Rapid growth of cities in less-developed countries has corresponded with a rapid growth of urban communities living in informal settlements (slums) in highly vulnerable areas (IPCC, 2014). Poverty, a shortage of alternative suitable land, the need to access livelihoods, and high land values forces the poor to settle on unsuitable or unsafe lands. This is compounded by inadequate or poorly enforced planning zones and building codes, eviction linked to speculative development by the private sector, and exclusion of the poor from formal land markets. These pressures result in people on or below the poverty line living in poorly constructed houses on unsafe sites.

The style of development in areas of high hazard risk is dominated by poor quality homes in informal settlements or slums on informal or illegally occupied or subdivided land (Van der Molen and Mitchell, 2014). Over 70% of all land parcels are currently outside of the formal systems of land administration systems. The resultant tenure insecurity inhibits investment in more climate resilient buildings. The outcome is development that is not resilient to the impacts of climate change, and many residents who live with a constant fear of land grabbing or eviction.

In the post-MDG context, long-term sustainable "climate-resilient" development cannot occur in these rapidly changing urban areas without addressing the impacts of urban expansion and climate change at the local level. Achieving climate resilient development will require responding to the drivers of rural–urban migration and urban growth, and informal settlements. Addressing these issues requires the impacts of rapid urban expansion and climate change be understood and addressed at the local level.

In an overall sense, this means controlling where development of land occurs, and preventing the spread of informal settlements onto hazard-prone land. However, it is clear that where the most rapid urban growth is occurring, conventional land-use planning is not effective in controlling the spread of informal settlements, or preventing informal settlements in areas of high hazard risk. Birkmann et al. (2014) reviewed cases in Vietnam and Indonesia and found that the risk assessment undertaken was not instructive in preventing building on areas of high-hazard risk. They found that regulatory planning tools such as land-use plans did not strengthen adaptation, and were "too static for rapidly expanding cities".

The pattern of land use in a city is a reflection of the development decisions made, and the quality of land use control. Further, the impact of natural disasters is magnified by inappropriate land-use planning. Therefore, hazard risk is the cumulative result of deficiencies in previous decisions about land use, land development, and building standards. The need to respond to poor land-use planning decisions made in the past is becoming more obvious in the context of climate change. Without effective land-use planning, development spreads out into areas where land is less in demand including sites which are not suitable for development or unsafe. Necessary infrastructure and services are not provided, and environmental degradation is intensified (UN-HABITAT, 2010; Correa, 2011).

In addition to the inadequacies of traditional land-use planning, the vulnerability of the urban poor relates substantially to the lack of secure tenure (Quan and Dyer, 2008). This is particularly relevant to people living in informal settlements, who often have very insecure tenure and constantly face eviction or resettlement – at times without adequate compensation. Improved tenure security also provides the landholder with confidence to implement measures to reduce climate related risks. There has been much recent literature about the impact of poor land tenure security on vulnerability to natural disasters (e.g., Barnes and Riverstone, 2009; UN-HABITAT, Reale and Handmer, 2010UN-HABITAT, Reale and Handmer, 2011 Mitchell, 2011; Usamah et al., 2012).

Against this backdrop, the paper discusses the importance of responsible land governance in support of climate resilient development in less-developed countries. The paper is structured as follows. In the following sections, we introduce the term 'climate resilient urban development' to emphasise the focus on urban growth, and discuss why responsible land governance is an important element. The discussion then considers in more detail how the two major elements of responsible land governance – safeguarding and securing land tenure rights, and effective land use planning and control – contribute to climate resilient urban development.

2. Toward climate resilient urban development

Many cities already face significant risk from natural hazards, including extreme weather events, floods and periods of water shortage (Friend et al., 2014). The increasing number and size of cities and the growing concentration of people in urban areas can generate different patterns of disaster hazards, and vulnerability. This is evident in the increased number of urban disasters such as storms, flooding, fires and landslides in many less-developed countries (United Nations, 2011). Central to the response will be both climate change adaptation (changes that moderate potential damages) and mitigation (reducing greenhouse gas emissions).

The UN Framework Convention on Climate Change, called the Cancun Adaptation Framework (UNFCCC, 2011), seeks to enhance action on climate change adaptation (CCA), and invites all Parties to undertake the following adaptation and risk reduction actions:

1. Impact and vulnerability assessments,
2. Strengthening institutional capacities,
3. Building socio-economic and ecological resilience,
4. Enhancing disaster risk reduction (DRR), and
5. Strengthening information and knowledge systems.

Each of these actions is related to, and affected by poor governance of tenure and land-use planning. The first three of the actions above – impact and vulnerability assessment, strengthening institutional capacities, and building socio-economic and ecological resilience – are important to the sustainability of CCA actions. In particular, impact and vulnerability assessments underpin all climate change adaptation responses. The fifth element – strengthening information and knowledge systems are also relevant to the land sector.

However the fourth element – enhancing DRR – is where the connections between climate change, vulnerability, land use, and tenure insecurity are perhaps the most evident. According to the IPCC, disaster risk management is increasingly considered "a frontline sector for integrating climate change adaptation into everyday decision-making and practices" (IPCC, 2012). They argue

Download English Version:

https://daneshyari.com/en/article/6547914

Download Persian Version:

https://daneshyari.com/article/6547914

Daneshyari.com