Managing urban risk: perceptions of housing and planning as a tool for reducing disaster risk

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Published in:
Global Built Environment Review

2004

Managing Urban Risk: Perceptions of Housing and Planning as a Tool for Reducing Disaster Risk

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Abstract

This paper examines current perceptions within international aid agencies regarding the existing and potential roles of housing and urban development planning as a tool for reducing urban disaster risk in developing countries. It is mainly based on interviews with more than 50 professionals from international agencies and a review of documents on planning and risk reduction.

The paper analyses the correlation between planning and the occurrence of naturally triggered disasters, and argues that this correlation is inadequately considered by international stakeholders elaborating pre-disaster initiatives. It shows that the identified gap between the working fields of planning and risk reduction increases the vulnerability of the urban poor in two ways: 1) actively, through existing initiatives, which only focus on planning ***or*** *risk reduction; and, 2) passively, through the lack of developing initiatives that integrate both fields.*

I. Introduction and Outline

The damage caused by the worldwide rise in disasters (see *figure 1*) is felt most acutely by the almost one billion people living in inhuman and dangerous conditions (UN-HABITAT, 2003).[1] When disasters strike in cities, the effects can be worse than in other environments, and it is the communities of the poor and the marginalized in the developing world, that face the greatest risks (e.g. Blaikie et al, 1994; IDNDR, 1990). With growing urbanisation (see *figure 2*) and more and more small and large-scale disasters occurring in urban areas, years of development effort and labour are continually being destroyed and eroded (Sanderson, 2000). As Maskrey (UNDP-BCPR)[2] stated: "The trend is for the risk to become urban".[3] Thus, public policies and disaster response measures are increasingly being tested beyond their capacities, with tragic consequences (Mitchell, 1999). In response to this development, it is essential to determine what kind of pre-disaster initiatives can help to mitigate disaster risk, especially in urban, low-income and informal settlements.

"Urbanisation affects disasters just as profoundly as disasters can affect urbanisation" (Pelling, 2003, p7). However, urban growth, whether planned or unplanned, is seldom carried out with a view to reduce disaster risk. This gap between planning and risk reduction will be demonstrated by the literature, planning history, discourses, and existing international initiatives. Since provisions such as microzonation, land-use zoning, building code changes, and rescue operations at present may not affect the most socially vulnerable people (Velasquez et al, 1999), urban planning and mitigation has to be re-evaluated again in the light of the last 20 years' challenges.

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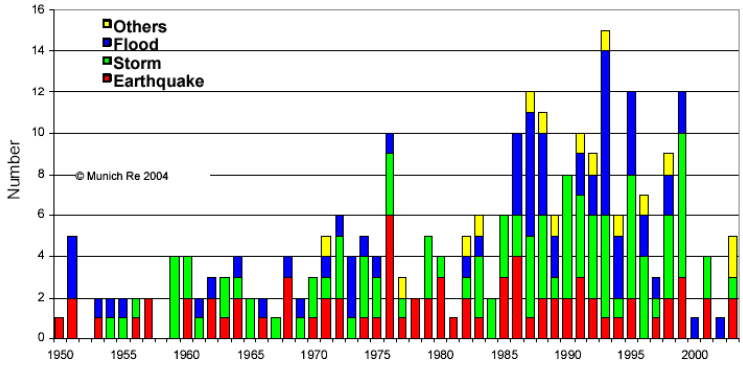
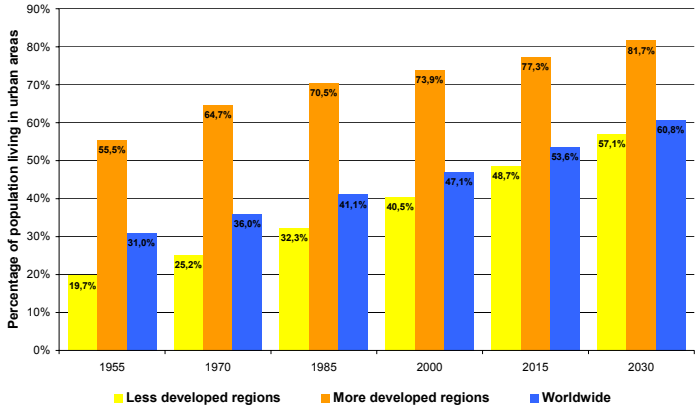
Figure 1: Worldwide increase in the frequency of large-scale disasters. Disasters are classed as large-scale if the ability of the region to help itself is overtaxed



Source: Munich Re, 2004, www.iabm.org/Conference_PDFs/Berzgraph.pdf, retrieved 01.07.2004.

Figure 2: Worldwide urbanisation: Percentage of population living in urban areas



Source: United Nations World Urbanization Prospects, 2003, www.un.org/esa/population/publications/wup2003/2003WUPHighlights.pdf, retrieved 09.07.2004.

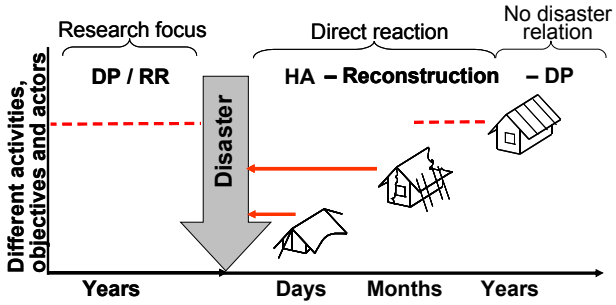
In the following sections, the paper analyses the current linkages, strengths and weaknesses in terms of how literature, planning history, discourses, as well as international aid agencies address, or do not address, the interconnection between risk reduction and planning. Sections III and IV address the issues around the gap and the interplay between planning and the occurrence of disasters, section V and VI deal with the disregard of this interplay, which results in increased urban vulnerability, section VII presents and describes existing integrated risk reduction initiatives.

II. Methodology and Limitations

This qualitative study is mainly based on semi-structured interviews with more than 50 programme managers, operational or academic staff of international governmental and non-governmental organisations (NGOs), as well as reviews of research and project documentation on planning and risk reduction.[4] Chain and purposeful sampling was used to select interviewees in a balanced way, who were working either in the disaster, development or planning fields.[5]

While risk reduction can be implemented and is essential before, during and after disasters, the term risk reduction in this paper refers to measures of prevention, mitigation and preparedness in a developmental (pre-disaster) context. This was necessary in order to limit the scope of the research, and to focus on the most neglected context (see *figure 3*).

Figure 3: Research focus: Initiatives in the field of Developmental Planning (DP) and Risk Reduction (RR)



Source: Wamsler 2002. HA= Humanitarian Assistance.

III. The Gap between Planning and Disasters

General View in Literature

The literature confirms the separation of the two fields of risk reduction and planning, and the fact that in general the: "linkages between urbanisation and disaster are weakly theorized" (Pelling, 2003, p44).

The limited disaster-related literature from an architectural and engineering perspective, focuses mainly on structural issues related to the post-disaster scenario of exceptionally large-scale disasters, looking at general safety issues for reconstruction programmes or large-scale engineering solutions. Literature which offers a wider view includes Aysan et al (1995), GTZ (2003), Sultan Barakat (2003), as well as a series entitled 'Guidelines for disaster prevention', which looks at the most basic problems in the field of risk reduction related to physical planning, building and the management of human settlements (UNDRO, 1976). Furthermore, research on urban disaster risk has mainly focussed on mega-cities. Important reference examples are Mitchell (1999), Velasquez et al (1999) and Wisner (2002).

More general literature on cities and development often has a limited focus, treating cities primarily as engines for economic growth (see for example World Bank, 2000, pp125-138). This approach has been challenged by the more ecological and health-centred perspective of authors such as Hardoy, McGranahan, Mitlin, Satterthwaite, and Girardet (e.g. McGranahan et al, 2001; Hardoy et al, 2001). These authors, and some compilations on urban sustainability (e.g. Zetter et al, 2002), include, but do not specifically focus on, disaster-related risk reduction measures.

General disaster studies tend to focus, not on the actual vulnerability, but on the hazards, themselves, addressing scientific aspects and related technical solutions, such as expensive high-tech prediction systems, whilst socially-oriented disaster studies look mainly at the social causes of vulnerability and poverty. The latter often neglects planning (including housing) as being vitally important risk reduction measures, since it is perceived as purely physical tool.[6]

Literature on climate change focuses more on the reduction of greenhouse gas emissions and less on searching for possible mitigation in developing countries, although human settlements are given an important role in respect of reducing disasters. In fact, the Intergovernmental Panel on Climate Change (IPCC, 2001, p383) states: "Human settlements are expected to be among the sectors that could be most easily adapted to climate change, given appropriate planning and foresight and appropriate technical, institutional, and political capacity". Nevertheless, in respect of specific planning measures, in the main it is general 'sustainable cities activities' and Local Agenda 21, which are named (IPCC, 2001).

Few examples such as Bull-Kamanga et al (2003), Pelling (2003), Sanderson (2000), El-Masri et al (2002), GTZ (2001) and compilations such as Aysan et al (1992), IDNDR (1990) and the World Bank (2003) integrate social and technical concerns, thus linking the work that arises from disaster risk reduction, livelihoods and sustainable urban planning. In addition, there is a range of related 'grey' literature in the form of case studies and project reports from national organisations such as, for example, SEEDS[7] and DMI[8] in India, as well as La Red[9] in Latin America, and PeriPeri in Africa. However, little attention is given to the analysis of the gaps and linkages between planning and the occurrence of disasters, to their potential for risk reduction, or, indeed, to the professional perspective of planners.

General View of Interviewees

It is becoming more common to integrate an understanding of risk from disasters with risk from other hazards (Hardoy et al, 2001). However, the interviewees confirmed that planners show little attention to small-scale disasters, which result in an increasing number of victims each year, in comparison to that of large-scale disasters.[10] On the other hand, disaster people perceive urban planning only as an issue of land use zoning and of building regulations, without any relation to the concept of risk reducing measures; planning was further seen as an unhelpful tool in terms of tackling problems in low-income and informal settlements. Nevertheless, planners are beginning to recognize that urban scale vulnerabilities encompass much more than the sum of individual buildings and some elements of infrastructure (Bahrainy, 1998).

The interviewees stated directly and indirectly that many of the people working in risk reduction or planning issues are not fully aware of the interconnection between planning and the occurrence of natural disasters. This results in few initiatives being developed, which would integrate both fields (see section VI). Maskrey (UNDP-BCPR) explained that this situation has arisen as the result of little systematic research having been carried out on the issue as well as the general complexity of cities. In fact, the correlation between planning and disasters was principally only seen in the vulnerability of the urban poor, expressed in their current location and the quality of their housing. Haghebaert (ProVention Consortium) summarized: "In the end, whether you are vulnerable to disasters or not depends mainly on where you live, and in what type of house you live. These are key factors if you are a victim or not." Several interviewees saw this basic interconnection primarily in relation to earthquakes, and interpreted it as a one-way cause and effect relationship during the period of destruction, with the natural event being the cause, and the destruction of the urban environment being the effect. Davis (DMC) explained this limited perception by the fact that: "98% of people killed in earthquakes die in buildings – while this does not apply to any other hazard".

IV. The Interplay between Planning and Disasters

In order to study the interplay between planning and disasters, information gathered from the interviews and literature was systematised. In the first instance, the historical development of how the working field of planning interrelates with disasters is examined. Then, the factors that interconnect planning and the occurrence of disasters are analysed. *Figure 5* at the end of this section, summarizes the key aspects.

Historical Development

Although it was shown that planning is not commonly seen as related to disasters, Milbert (IUED) stated that: "looking at the history of cities, the correlation between urban planning and natural disasters is obvious".

Colonialism

Although the nature and character of urban settlements vary to a large extent throughout the different countries of the developing world, many share a history of colonialism, which has exerted a profound effect on the process of urbanisation. Several colonial settlements constitute a case of risk by origin, being exposed to storms, volcanic eruptions or earthquakes (Pelling, 2003; UNDP-BCPR, 2004). Primarily, economic factors were considered for site selection. In contrast to these planned settlements, more naturally grown cities seem to have developed in safer areas (e.g. Milbert, IUED). However, because of the manner in which settlements tend to grow and develop, they create their own hazards, which, in turn, can generate large-scale disasters. Currently, the problem in developing countries is that the planning and building codes are colonial legacies, or mostly imported standards, without much attention being given to local factors, and standards, which are based on quality instead of performance (e.g. Gavidia, UN-HABITAT).

Protective City Planning and Defensible Space

Historically one of the main functions of the city was to provide defence, not against disasters but against human threats from the outside (Kopomaa, 1999). Meurman (1947) coined the term 'protective city planning' for fire and air protection, suggesting the decentralisation and isolation of vulnerable facilities from the rest of the city. While for example Mumford (1938) offered a pessimistic perspective of urbanism, referring to the development of cities racked by war, famine and disease, the architectural Modern Movement saw itself as capable of improving the human conditions (Kopomaa, 1999). Since then, more inner-city, man-made threats have been considered, with a trend towards the increased protection of cities through physical means and electronic surveillance. In this context, the term 'defensible space' was created in the 1970s by Newman (1972). In parallel, 'nature ecology studies' and 'urban ecology' considered planning, which ensured the compatibility between urban planning and the natural environment (Moudon, 1992). However, the focus is mostly on the conservation of the environment and climatic design features.

Preventive Disaster Planning

There are also some exceptional examples of integrated, preventive, urban planning, based on the consideration of naturally triggered disasters. Milbert (IUED) stated that: "looking at the Western world, such as Scandinavia and Japan, the possibilities of urban planning, having created prevention for disasters, become obvious". In fact, in many developed countries improvements in methods of risk reduction, coupled with good planning, have greatly reduced the vulnerability and risk of the population (Velasquez et al, 1999). One case in hand is that of Ruoholahti, a district in Helsinki in Finland, which was planned so that the potential rise of the sea level caused by climate change was taken into account by, for example,

building on higher ground (Kopomaa, 1999). In Tokyo, 'disaster-proof urban planning' is promoted and regulations prescribe regular implementation of 'area vulnerability assessments' (Velasquez et al, 1999). An example from the developing world is Cuba, where national land-use planning and management are integrated into risk reduction considerations (UN-ISDR, 2002). In the case of a disaster, informal settlements are the first to be evacuated (Quevedo, 2002). However, Ruskulis (2002, p8) states that generally: "city-wide disaster mitigation planning rarely includes poor communities".

Influencing Factors of the Interplay

There has been a tendency to exclude nature from analysis (Allen et al, 1999). Consequently: "In urban areas, society is popularly perceived as being in control of a benign physical environment where temperature can be moderate, disease controlled, floodwaters channelled away and food easily accessed" (Pelling, 2003, p14). However, studies increasingly recognize disasters as one of the realities of city life (e.g. Green 1990 in Blaikie et al, 1994, p125). Some recent publications fully recognize urban disasters, pointing out that existing risk is magnified by urbanisation and the failure of adequate planning (e.g. UNDP-BCPR, 2004). Based on the reviews of interviews and documents, the aspects influencing the interplay between urban disasters and planning were analysed and are presented as follows:

Social Aspects: Segregation, Peoples' Priorities, and Health Problems
Due to the functioning of land and property markets in cities, and the inability of formal housing and planning sectors to cater for the priorities of the population (e.g. access to work opportunities), vulnerability expresses itself in the growth and development of illegal settlements in marginal high risk areas. In addition, segregation exists within settlements, with, for example, the poor living on the ground floors of houses, which are particularly vulnerable to flooding. In fact, housing and settlements are the physical expression of the socio-political and economic community processes (e.g. inequality, lack of opportunities and development) (Clarke, IDB).

In cities, a range of factors influence people's priorities resulting in low investment in planning security features, and, consequently, substantially increasing vulnerability. The importance of status results in the construction of modern looking houses in risk areas without technical safety features, or without the necessary resources and knowledge of traditional/rural coping strategies. Another factor is land pressure and tenure; if people fear that their house could be bulldozed by the authorities, they will not invest in security measures. Also landlords, developers and property holders seldom invest in security features. A good example is Santa Tecla in El Salvador, where the supreme court overrode a municipal order, and a developer was allowed to build a new settlement in a risk area that was later severely affected by landslides in 2001 (Rhyner, 2002).

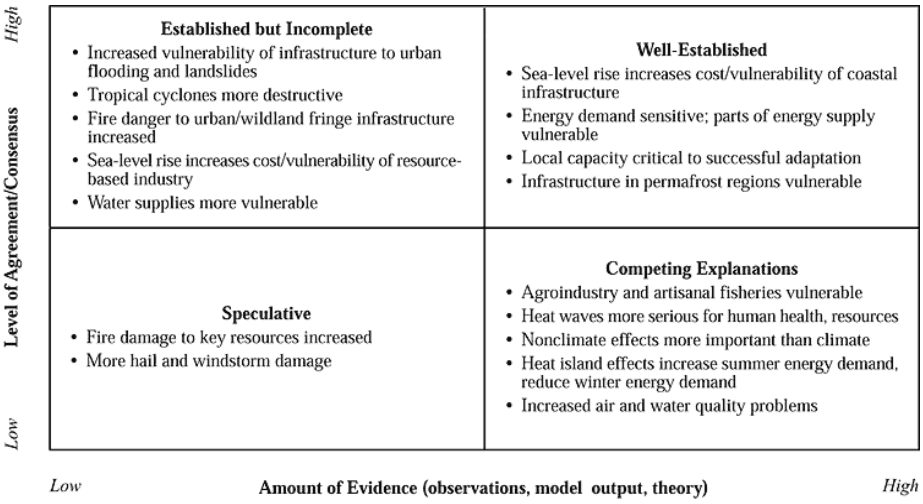
The interrelation between planning and disasters is especially evident in health-related issues and aspects. A study in Accra, Ghana, on environmental problems at household level for different types of residential areas, clearly demonstrates the correlation between poverty and ill-health, which, in turn, is caused by deficient housing and unsanitary neighbourhood environments (Sida, 2002), making people more vulnerable to disaster.

Environmental Aspects: Deterioration and Climate Change
General processes of urban expansion contribute towards increasing risk through environmental degradation, such as the transformation of the physical environment and the overexploitation of natural assets in formal and informal areas (e.g. Hardoy et al, 2001; UNDP-BCPR, 2004). Deforestation and the colonisation of garbage landfills occur frequently. The degradation and deterioration process is fostered by the inadequate use of

infrastructure in low-income settlements, such as inadequate waste disposal, in part from wealthy neighbourhoods, the blocking of drainage systems, causing flooding, illegal electrical connections provoking fire, and inadequate water disposal causing construction instabilities (e.g. Chardon, 2002).

Climate change cannot only increase the frequency and severity of natural hazards resulting in the urban poor being more exposed to risks, but it can also increase the number of immigrants from rural areas, who might be affected by decreased agricultural productivity, rural disasters, etc. The major effects of climate change on human settlements are shown in *figure 4*. These are related to flooding, landslide, and fire, driven by increased rainfall intensity, a rise in sea-level and heat waves (IPCC, 2001).

Figure 4: Impacts of climate change on human settlements, categorized by state of scientific knowledge



Source: IPCC (2001, p383).

Demographic Aspects: Population Growth and Migration

Growing urbanisation creates new challenges for planning as the population is living increasingly closer to hazards, and urban areas generate increasingly higher concentrations (e.g. of people, social networks, buildings and infrastructure), including the central state government and the financial centres of economic life. This concentration generates vulnerabilities as its disruption easily creates disasters. Rural-urban migration is created by the perception that in urban areas people have better opportunities for social and economic development (e.g. Gavidia, UN-HABITAT). In this context, vulnerability is exacerbated by structural forces related to the globalisation of economies. The way multinational corporations operate, and the ease with which capital moves and relocates, creates a competition and, what could be described as a global bidding process between cities, to attract investment. However, such competition is characterised by being a down-bidding process; a down-bidding process, in terms of which cities can lower, or totally turn a blind eye to the environmental regulations, which provide higher tax incentives or tax holidays, more profit repatriation, and, most of all, do not insist on the stringent insurance of worker and assets, etc. (e.g. Hamza, IC).

Economic Aspects: Informal Sector and Economic Growth

With urbanisation, people become increasingly dependent on infrastructure. Economic activities are incrementally related to housing of the poor, which provides space for income

generation through labour opportunities and room rental. Housing ownership is by far the most important productive asset of the urban poor (Moser, 1998). In 2001, in the most earthquake affected area in El Salvador, one fifth of all houses accommodated a small business (Lazarte, ILO). However, Moser (1998) notes that compared to rural areas, the importance of the house and its plot, as productive assets for the urban poor, have received far less attention.

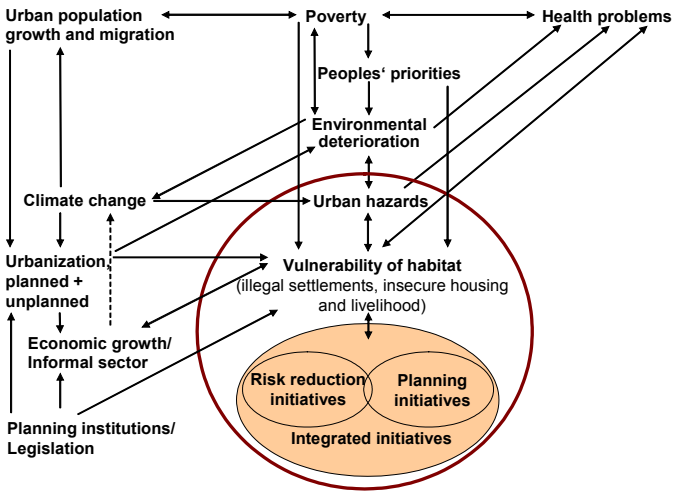
This situation is not a one-way correlation with the destruction of houses destroying many low-income jobs. Economic activities, by themselves, along with related constructive changes, can increase disaster risk. One of the most serious damages in Algeria happened when a ten-floor building collapsed totally in the earthquake, because a bakery on the first floor had created public access by removing a supporting wall; 400 people died (Lazarte, ILO). The local production of dangerous artefacts such as fireworks or dangerous production processes (e.g. use of open fire) are other examples, which can increase vulnerability and risk.

Another link between planning, economic activities and disasters is the fact that in the poor urban areas of developing countries, construction is mainly an activity of the informal sector, which has major economic importance (Sida, 2002). The construction industry focuses on higher profit sectors and offers a limited social responsibility (e.g. Gavidia, UN-HABITAT). Furthermore, on the one hand, corruption within the building industry, together with non-compliance to building codes, can create vulnerabilities throughout the whole construction process (e.g. Molin Valdes, UN-ISDR). On the other hand, the construction sector constitutes a good potential for decreasing vulnerabilities at the local level. This is due to the fact that: "construction and its related trades usually have a low content of imported goods and employ a lot of semi-skilled or unskilled people" (Sida, 2002, p44).

Institutional Aspects: Planning Institutions and Legislation

Centralized and separate disaster and planning institutions and inadequate enforcement schemes can create vulnerabilities. Inappropriate planning legislation can exacerbate the vulnerability of the urban poor through the enforcement of inadequate standards or the general disregard of informal and low-income settlements (Ruskulis, 2002). An example of increasing vulnerability as a result of legislation can be demonstrated by a study of disaster risk in Zambia (Charvériat, 2000). Since widows are denied any claim on household possessions following the death of their spouse, female-headed households become much more vulnerable.

Figure 5: The complex interplay between planning and the occurrence of disasters showing the potential of integrated risk reduction and planning initiatives



Note: The research focus is highlighted.

In summary, the urban poor are caught in a complexity of factors that aggravates their poverty, with the occurrence of disasters rather intensifying, than equalising, the differences of status and the patterns of social inequality.

V. Increasing Vulnerability through Developmental Planning Initiatives

Section IV demonstrated that there is a really interesting mixture of factors completely intermingled with buildings and planning, and yet: "it is no-one's problem to do the intermingling, and no-one is responsible" (Davis, DMC). The disregard of the correlation between planning and the occurrence of disasters on the part of international and also national stakeholders, together with: "the erroneous assumption that pro-poor development automatically reduces risk" (Tearfund, 2003, p6), can result in actually increasing risks. Development, in itself, is a cause of disasters (Wijkman et al, 1984), whilst disasters in their turn, place development at risk.

The livelihoods approach adopted by many development specialists and generally favoured by aid agencies and donors alike is insufficient as: "some key mitigation requirements are not usually related to livelihood protection. For example, making dwellings safe against hazard impact may not have a direct impact on livelihoods, but this does not negate the strategic life-preserving importance of such action" (Tearfund, 2003, p20).

Examples of how vulnerability can be increased through developmental planning initiatives are presented as follows:

Reconstruction and Resettlement

Increasing risk can be simply demonstrated by post-disaster initiatives that reconstruct or repair houses, settlements, services, and infrastructure in hazard-prone areas. The reason behind this is the fact that there is an inherent problem in recovery programmes; most initiatives aim at returning communities to 'normality' as quickly as possible. This ignores the fact that such 'normality' could be the condition of vulnerability that allows a hazard to become a major disaster in the first place (e.g. Hamza, IC). Reconstruction of buildings or infrastructure in the same vulnerable location reproduces not only the problem and risk, but it can also create increased and additional risks (e.g. Rhyner, 2002). This is the case when, for example, light structures on flood plains are replaced by permanent structures, thus producing more damage in communities, whereas seasonal evacuation may have been a better solution. Additional risks are also created when initiatives ignore the changes in the physical landscape following a disaster, reconstructing a 'better' house that is adapted to the former landscape (e.g. ignoring a change of the course of a river, or changed soil conditions).

An example of the consequence of the disregard of the interconnection between the sectors of planning and construction, in respect of social and economic aspects, is the reconstruction in Mozambique after the floods in 2000. A large sum of money was approved by donors to contract companies from South Africa, who arrived in Mozambique bringing equipment, technicians and even, in some cases, unskilled workers. Four hundred million dollars were invested and the whole economic benefit was exported to South Africa (Lazarte, ILO).

Vulnerability can also be increased by resettlement initiatives (Blaikie et al, 1994). Several interviewees stated that whenever programmes tried to reduce vulnerability by re-locating people to theoretically safer locations, they ended up destroying their livelihoods.

New Urban Developments and Structural Adjustment

Not only post-disaster, but also pre-disaster initiatives, can increase the vulnerability of the urban poor. Inadequate developmental planning initiatives can actually cause disaster risk, as structures such as bridges or schools, destroyed by disasters, were in part the result of development initiatives (e.g. Maskrey, UNDP-BCPR).

Most international agencies accept local building standards for the majority of structures, but find it often difficult to promote codes, as this would create additional costs, thereby rendering human settlement planning and improvement initiatives unreachable for the urban poor (Stein, Sida). In addition, within developmental initiatives, environmental impact assessment (EIA) and hazard impact analysis are seldom carried out in respect of urban developments (e.g. Manock, IC). In countries where EIA is legally binding, problems with non-compliance, especially with the housing and infrastructure ministries, are common (e.g. Egypt (El-sheikh, Urban Training and Studies Institute)). Rowell (CARE) mentioned an example from Delhi, where the disregard for environmental analyses resulted in the construction of a road through the final remaining watershed outlet for the monsoon rains, leading to the destruction of a whole community during the rainy season.

Income and employment generating planning initiatives can also increase the vulnerability of the urban poor. Examples are industrial development in high risk areas increasing the vulnerability of the surrounding residential areas, as well as large-scale infrastructure works, forcing tens of thousands of people to move to risk areas where they can hardly make a living (e.g. Haghebaert, ProVention Consortium). Another example within the informal sector, is the idea of trying to ‘deal’ with this sector by 'formalising' it, thus imposing regulations that make it impossible for its inhabitants to make a living, since formalisation deprives them of their comparative advantage (e.g. Hamdi, CENDEP).

Further, Hamza et al (1998) argues that structural adjustment processes that were introduced by the World Bank and the IMF[11] in the 1980s and 1990s increased vulnerability. With structural adjustment, investment in urban planning ceased and the size of planning ministries or units were reduced, or they disappeared completely. As decentralization in the developing world took place many times without resource-decentralization, planning functions were decentralized to municipalities, without having technical or financial resources (e.g. Molin Valdes, UN-ISDR). The net result has been an erosion of living standards in urban areas (Hamza et al, 1998). An example of this is Jamaica after hurricane Gilbert 1988, where the planning and housing sectors were blamed for the losses, partly because of structural adjustment policies that resulted in the poor maintenance of rental property and non-compliance with building regulations (Ford 1987 in Blaikie et al, 1994).

VI. Lack of Integrated Risk Reduction Initiatives

The lack of integrated risk reduction initiatives can be summarized with the words of Hamza (IC): “There is a huge gap between what is actually happening today and what should happen”. Reasons for this lack are, for example, the competing and decreasing interests of international stakeholders in combining risk reduction and planning, as well as a lack of knowledge regarding the possibilities of integration. This results in the development of initiatives that adopt a deficient approach, with only partial integration.

Competing Interests

Whilst the interviews revealed a strong interest from international stakeholders in the post-crisis and post-disaster scenario, in putting more effort into developing closer linkages between emergency and reconstruction programming, relatively little concern and minimal concrete action could be identified regarding the pre-disaster scenario and the integration of risk reduction into developmental initiatives. However, the old view of disasters as 'one-of' events was replaced by an awareness that development processes can influence the impact of disasters (Twigg et al, 2002), resulting in the creation of a range of disaster management units and the expansion of aid agency capacity to deal with risk reduction (e.g. Twigg, Benfield Hazard Centre).

Within the identified initiatives, the interviewees confirmed that the focus is mainly on the rural context. Within the few risk reduction initiatives, the housing and planning sectors generally inspired little interest and were repeatedly described as a 'nightmare' and a 'bad experience'.

Decreasing Interests

With few exceptions, the interviewees agreed that the interest in integrating planning aspects and risk reduction is not only very limited, but has also decreased during the last decade. During the 1970s and 1980s, earthquakes were the most prominent disasters, with planners focussing on related physical issues (Aysan, UNDP-BCPR). Since then, the definition of the term 'disaster' has significantly broadened. Instead of including additional factors to develop new and more integrated measures, several interviewees stated that physical planning measures have lost relevance and disappeared from the risk reduction agenda. Currently, Asia seems to be the most active area, and there is a decrease of interest in Latin America. The latter is probably because there have been less urban disasters in the region than during the 1970s and 80s. The other possible factor could be the cessation of international funding in several countries which returned to democracy, where many people working for NGOs have moved into government organisations (Satterthwaite, IIED).

Deficient Approach

The few existing risk reduction initiatives that are related to planning were criticised by many interviewees, since they often have a deficient approach (e.g. lack of community-participation; missing vertical links between the community, the municipal and the national level; missing links between large and small-scale measures, as well as between physical/structural, socio-political and environmental measures). The focus is on refining specific issues that, because of the afore-mentioned criticism, often does not get translated into long-term improvements.

Existing internationally promoted initiatives can be put into three groups: Firstly, cutting across all types of organisations, there are the 'stand-alone' structural measures, which aim to increase the safety of public buildings and services, such as schools and hospitals, within the formal sector. Secondly, there are those initiatives that work on large-scale disasters, mostly together with national agencies, by using technological measures, such as early warning systems and geographical information system databases and maps. Thirdly, there are the community-focused initiatives that partly include small-scale planning measures, targeting everyday hazards, by connecting health and socio-environmental issues.

VII. Integrated Risk Reduction Initiatives

Those interviewed had limited knowledge about integrated initiatives and stakeholders which indicates a lack of such initiatives, and could also point to weak networking within the community working with disaster, development and planning.[12]

Integrated Initiatives

Interviewees stated repeatedly that existing integrated initiatives of international stakeholders are often only implemented because of the personal interests of programme managers or the informal relations between people working in planning and disaster units, not because of institutional legislation or mandates. This supports Twigg et al (2002, p473) who point out that: "well-placed individuals can push significant [risk reduction] innovations through".

Only three initiatives were named frequently by the interviewees as having a more integral approach regarding planning and risk reduction: 1) Manizales in Colombia, 2) the CARE project 'Mainstreaming mitigation to reduce urban poverty', and 3) the United Nations Risk Assessment Tools for Diagnosis of Urban Areas Against Seismic Disasters (RADIUS).

In a recent publication, Manizales, an initiative that is among others supported by IDB, was called: 'the world leader in disaster prevention and planning' (Quesada, 2004). One of its main strengths is its community-based approach and the strong coalition between the municipality, universities (including the faculty of architecture and engineering), and the private sector. This helped to set up a municipal disaster prevention system based on municipal development and land use plans, incorporating disaster prevention as a strategic and political cornerstone (Quesada, 2004; Velásquez, 1998).

The CARE project started in the year 2000 and was completed at the end of 2003.[13] It promoted activities for the reduction of risks in three urban locations in Nepal and India. Its approach is also inter-institutional (including CENDEP at the Oxford Brookes School of Architecture) and community-based, focusing on urban improvement on a very small scale (Hamdi, CENDEP), as well as general urban governance processes (Rowell, CARE).

RADIUS was initiated in 1996, linking different stakeholders, and working in nine cities to develop earthquake risk assessment methods. Post-project evaluations provided action plans for urban development, land use planning and the updating of official disaster management structures.[14] Despite repeated positive naming of this initiative, critical comments were that it has too strong a structural focus, and a lack of broader linkages.

International Stakeholders

Besides the three initiatives mentioned above, some interviewees pointed out agencies, which partly work with both risk reduction and planning. Those most frequently mentioned were analysed in order to filter out the few existing activities, which integrate to some extent planning and risk reduction.

IFRC/RC was generally seen as the main stakeholder within the field of preparedness. However, it does not have a systematic approach towards planning in general (Oelreich, IFRC/RC). Its community-planning activities include the establishment of risk maps, the construction of emergency housing and small-scale risk reduction measures, such as raised embankments, etc.

Almost all interviewees mentioned UNDP, although it does not particularly focus on planning (Maskrey, UNDP-BCPR). Currently, UNDP-BCPR, together with IIED and the ProVention Consortium, have implemented an initiative named 'Urbanisation, Environment and Disaster

Risk Management in Africa'. It aims to integrate risk reduction into urban development planning through supporting the activities of the established African Urban Risk Analysis Network (AURAN) (ProVention Consortium 2004).

UN-HABITAT was acknowledged to be the mandated organisation for urban issues, including urban risk reduction. In 2002, together with UN-ISDR and MINURVI[15], a regional consultation in the Caribbean was carried out, leading to the formulation of a programme named 'Strengthening Capacities in Local Risk Management for Urban Development in the Spanish-speaking Caribbean Basin'. Activities will probably commence towards the end of 2004 (Gavidia, UN-HABITAT). Apart from the aforementioned programme, UN-HABITAT was criticised on account of its limited initiatives on the subject.

UN-ISDR was mentioned as an important advocate, influencing agencies working in disaster related areas. Their publication 'Living with risk' has a special section on land use planning (UN-ISDR, 2002, p221). Within the edition from 2004, another section deals with safe building constructions (UN-ISDR, 2004, p323).

The World Bank was named as having linkages with both planning and disaster management. The World Bank's Hazard Management Unit (HMU), in the 'Transport and Urban Development Department', was established in 1998. In 2002, the Bank organised a meeting together with the ProVention Consortium on: 'The future of Disaster Risk: Building Safer Cities' (World Bank, 2003). Cities Alliance, established in 1999 with initial support from the World Bank, UN-HABITAT and others, has, so far, only supported one initiative (out of 107) in Mozambique, with a primary focus on risk reduction (Milroy, Cities Alliance).

IDB has been engaged in Central America since the early 2000s. Based on its action plan (IDB, 2000), risk reduction components are integrated with planning initiatives. In addition to this, IDB recently elaborated a risk assessment checklist as a tool for integrating risk reduction into its development work. For this purpose, ten developmental sectors were selected, including one for housing, and one for water and sanitation (Keipi, IDB).[16]

Sida was mentioned as a bilateral agency that is especially engaged in urban planning issues. The agency supports municipalities in the process of learning how to carry out planning with communities, thereby introducing some aspects of risk reduction (Stein, Sida). Some interviewees referred to ITDG and its engagement in risk reduction in Peru.

National and Regional Stakeholders

Finally, some interviewees named national and regional organisations such as DMI and SEEDS (together with UNCRD[17]) and its urban projects in Nepal, as well as ADPC[18]. The AUDMP-programme[19] of ADPC is designed to respond to the need for safer cities in Asia, and is aimed at reducing the disaster vulnerability of urban areas, including the infrastructure, critical facilities, and shelter. La RED was mentioned as one of the most important regional networks.

VIII. Conclusions

This paper has focussed on looking at the interface between the built and the related socio-economic and environmental components. It has demonstrated how urban planning and the occurrence of disasters interact. In fact, the outcomes of decisions about planning, low-income housing and related socio-economic activities are not only affected by disasters, but can also have a direct influence on creating new ones. With growing urbanisation and climate change, this interplay is becoming increasingly important.

The analysis demonstrates the need, as well as the potential, to address the interplay between planning and disasters by combining risk reduction and planning initiatives, in order to reduce disaster risk in hazard-prone areas (see *figure 5*). Nevertheless, the analysis revealed that, firstly, internationally promoted initiatives in the field of risk reduction do not seem to actively integrate issues related to planning. Secondly, development agencies, whose focus is planning, seem to mostly overlook the occurrence of disasters in their initiatives. This omission can not only cause the further deterioration of the living conditions of the urban poor, but such neglect can also increase their vulnerability.

International planning initiatives should include an explicit component, which aims to reduce vulnerability. In fact, risk reduction has to be actively integrated and a constant, ongoing commitment to active collaboration between communities and stakeholders working in disaster-related issues and planning has to be achieved. This does not mean to overstate the role of planning, but to emphasise its current, somewhat marginal role, and the need to change current practices and concepts in order to improve its out-moded performance, as well as to promote its risk reduction potential, especially in terms of addressing the issues of informal settlements. Based on this outcome, ways how risk reduction can be mainstreamed within the fields of urban planning and governance have to be discussed.[20]

IX. Acknowledgements

The author would like to thank all the interviewees for their time and hopes that she has attributed their comments correctly. In addition, the author wants to offer special thanks to Ian Davis, Jorge Gavidia, Helena Molin Valdes, John Twigg, Jaime Valdes Aguayo, Annette Wong Jere and Johnny Åstrand for helping to develop this research. Furthermore, the research was supported by Sida.

Notes

[1] Important definitions used in this paper:
The term *disaster* is used as a generic term for large and small-scale disasters as well as everyday hazards that have a natural trigger. *Disaster risk* is composed of three factors: hazard, vulnerability and response capacity. The impact of hazards is profoundly influenced by the extent of people's vulnerability.
Risk reduction involves measures designed to avoid (prevention) or limit (mitigation and preparedness) the impacts of disasters.
The term (*urban) planning* includes the provision of housing, infrastructure and basic services. Planning is the "public forethought and conscious involvement preceding the pursuit of community-determined action, achieving social goals for the common good in both the public and private domain" (Riddell, 2004, pXV). It "includes the way places work and matters such as community safety, as well as how they look. It concerns the connections between people and places, movement and urban form, nature and the built fabric, and the processes for ensuring successful villages, towns and cities" (DETR, 2000, p8).

2 Citations and comments that are based on interviews are indicated with the name of the interviewee and their organisational affiliation.

3 In cities disasters can cause the greatest damage (Velasquez et al, 1999), and the majority of the most destructive disasters since 1990 have occurred in or near urbanized areas (Ruskulis, 2002).

4 The interviewees were independent international consultants (IC) and representatives of: Benfield Hazard Research Centre (UK), CARE International (UK), Centre for Development

& Emergency Practice (CENDEP, Oxford School of Architecture, UK), Cities Alliance (USA), Cranfield Disaster Management Centre (DMC, UK), Department for International Development (DFID, UK), Development Planning Unit (DPU, University College London, UK), German Association for Technical Cooperation (GTZ, Germany), Graduate Institute of Development Studies (IUED, Switzerland), Inter-American Development Bank (IDB, USA), Intermediate Technology Development Group (ITDG, UK), International Federation of the Red Cross/ Red Crescent (IFRC/RC, Switzerland), International Institute for Disaster Risk Management (IDRM, Philippines), International Institute for Environment and Development (IIED, UK), International Labour Organisation (ILO, Switzerland), King's College (UK), Oxfam International (UK), Pan American Health Organisation (PAHO, USA), Post-war Reconstruction and Development Unit, York (PRDU, UK), ProVention Consortium (Switzerland), Swedish International Development Cooperation Agency (Sida, Sweden), Tearfund (UK), United Institute of Development Studies (IDEA, Colombia), United Nations Development Programme, Bureau for Crisis Prevention and Recovery (UNDP-BCPR, Switzerland), United Nations Human Settlements Programme (UN-HABITAT, Switzerland and Brazil), United Nations International Strategy for Disaster Reduction (UN-ISDR, Switzerland), United Nations Office for Project Services (UNOPS, Switzerland), United States Agency for International Development (USAID, USA), World Bank (USA), and WSP International Management Consulting Ltd (UK). The interviews, as well as visits of implemented initiatives were carried out between November 2003 and September 2004.

5 The study differentiates between people working in the field of development (*development people*) and in the field of disasters (*disaster people*). Urban specialists form part of the development people; in turn, planners form part of the urban specialists. The term *planner* will be used as an umbrella term for experts of physical applied science, including architects, urban planners and engineers.

6 Blaikie et al (1994) has a broader view, analysing how to address root causes, how to reduce pressures, and how to achieve safe conditions.

7 The Sustainable Environment and Ecological Development Society.

8 Disaster Mitigation Institute.

9 The social studies network of prevention of disaster.

10 Website LA RED: www.desinventar.org/ (retrieved 01.04.2004).

11 International Monetary Fund.

[12] For example, the Healthy Cities Programme of the World Health Organisation, as well as LACDE (Local Authorities Confronting Disasters and Emergencies) mentioned in Twigg (2004, p245) under: 'International initiatives in urban risk reduction', were not mentioned.

13 The project was funded by DFID and is currently in the process of systematisation in order to analyse its strengths and weaknesses (Twigg, Benfield Hazard Research Centre), www.careusa.org/careswork/projects/IND149.asp# (retrieved 01.06.2004).

14 www.geohaz.org/radius/ (retrieved the 01.05.2004).

15 Regional Assembly of Ministers and High-Level Authorities of Housing and Urbanism in Latin America and the Caribbean.

16 Up to now, only a general checklist for all sectors has been drawn up.

17 United Nations Centre for Regional Development.

18 Asian Disaster Preparedness Center.

19 Asian Urban Disaster Mitigation Programme.

20 Another paper by the author discusses this topic.

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