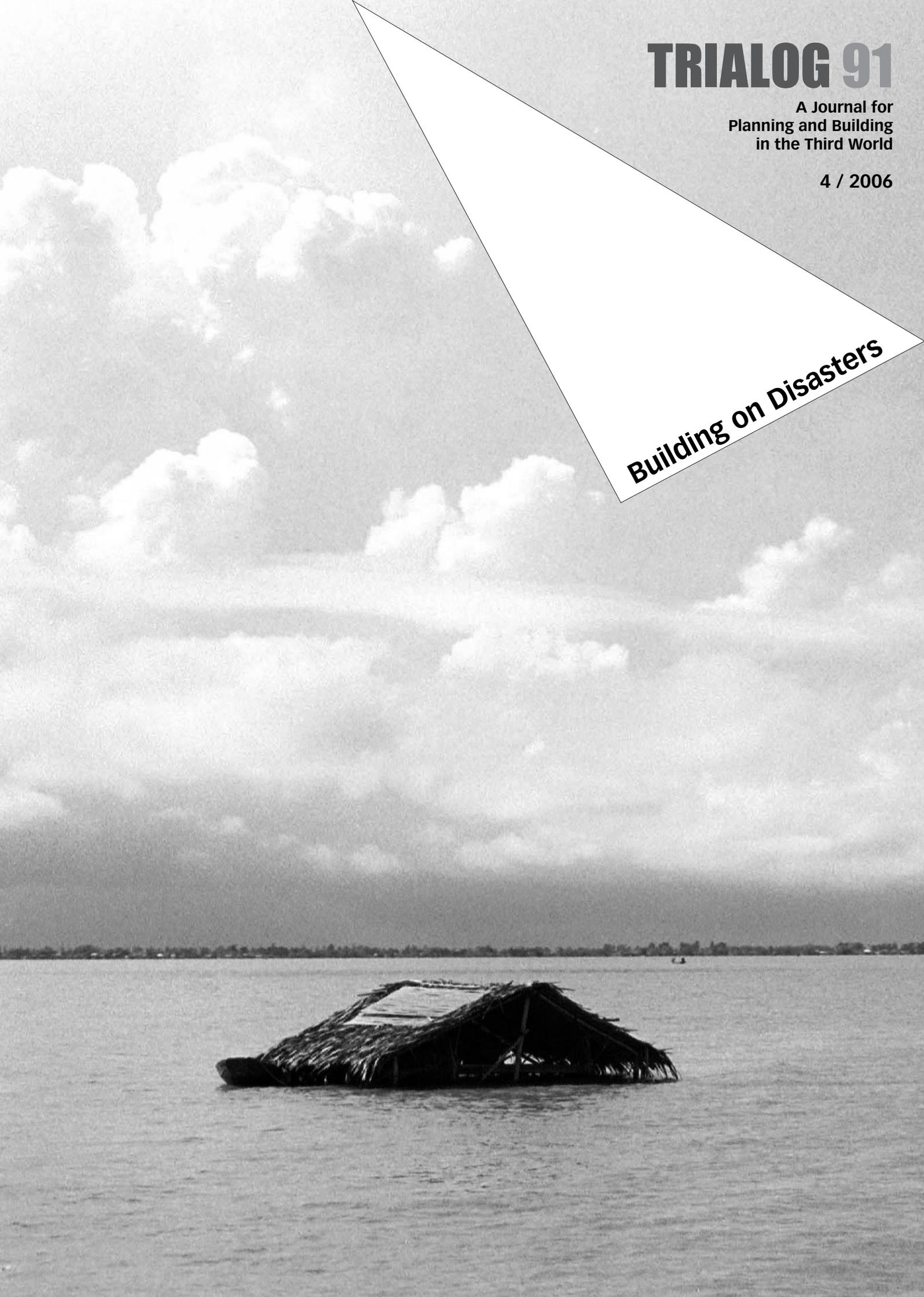


# TRIALOG 91

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**Building on Disasters**



## Editorial

Disasters occur when a hazardous event strikes a vulnerable human settlement whose inhabitants have insufficient capacity to respond. Natural hazards include earthquakes, wind storms, landslides, wildfires, volcanic eruptions, droughts, tsunamis and flooding. The growing vulnerability of human settlements to natural hazards makes disasters more likely and more severe. The numbers confirm this trend: between 1975 and 2005 there was a five-fold increase in disasters, and over the past 10 years, approximately 2.6 billion people have been affected, compared with 1.6 billion during the previous decade.

In cities, disaster risk has increased as a result of (a) high population densities and the concentration of housing, infrastructure and services; (b) the expansion of communities into disaster-prone areas; (c) environmental deterioration; (d) the locating of residential land close to industrial or other dangerous sites; and (e) the large numbers of poor communities. These problems are compounded by a lack of capacity on the part of construction and planning agencies both to keep up with rapid urbanisation and to develop and enforce adequate standards and policies.

Around 85 percent of people exposed to disasters live in low- and middle-income nations; and within these countries, the poor and marginalised are the most affected. Poor households often have no choice but to live in precarious conditions. Currently, more than one billion people worldwide live in slums, a number that is expected to rise to over two billion in 2030. Solutions are thus urgently needed.

The task of responsible engineers, architects and planners is to develop sustainable and secure communities. Given the increase in the number of disasters and the inherent complexity of adequate responses, such a task cannot be fulfilled unless these professionals integrate disaster risk management into their everyday work. This includes instituting prevention, mitigation and preparedness measures before and after disasters strike. However, post-disaster reconstruction tends to fail to improve the security of people at risk and to "build back" people's previous vulnerability. Moreover, to date, pre-disaster development projects have only too often ignored existing risk.

The title of this TRIALOG issue — **Building on Disasters** — hints at the idea that disasters could present a window of opportunity (a) to create safer and more sustainable human settlements in their aftermaths and (b) to positively influence subsequent developments. However, disaster risk management cannot be limited to post-disaster concerns, as "advances" in development in themselves have a huge impact on disaster risk, both in positive and negative terms. Hence, disaster risk management must also become an integral part of development assistance for housing and human settlement planning.

The papers included in this issue present practical experiences from Africa, Asia and Latin America that deal with a wide spectrum of disaster types. The first paper by *Christine Wamsler* analyses disasters from a local perspective. Slum dwellers in El Salvador were asked about their experiences and perceptions regarding disasters, as well as what they need to deal effectively with risk and disaster impacts. Causal loop diagrams, used for the analysis of the local perspectives, show related key variables and causal relations. The outcomes yield important insights into how to improve assistance in the fields of social housing and human settlement planning to sustainably reduce disaster risk.

The remaining papers of this TRIALOG issue were written from the perspective of donor or implementing organisations. *Tiziana Rossetto* provides a general overview of the mitigation and prevention measures that should be considered within development and reconstruction projects in the fields of housing and human settlement planning. She proposes a nine-step methodology for integrating risk reduction into the project development cycle.

*Alfredo Stein* reports on a reconstruction project in Honduras implemented after Hurricane Mitch in 1998 and the experiences gained by the bilateral and multilateral agencies involved. In this case, the donors' collaborative efforts had a positive and sustainable impact on the efficiency of the Honduran social housing sector. The lessons learned suggest that the notion of "building on" disasters can become reality.

The following papers focus on different reconstruction aspects and the inherent conflict between the pressure for rapid delivery of basic services, such as shelter, and the rather long-term aim of "building back" better. Three papers relate to the Asian tsunami of December 2004, of which the first two illustrate post-tsunami reconstruction experiences in Indonesia. *Florian Steinberg* elaborates on the problems and barriers experienced by numerous aid agencies in rebuilding people's housing and livelihoods. He particularly examines community-based working approaches, which can be essential in accomplishing the task of "building back" better. However, the author points out that they can not be a "panacea" for all governments' or contractors' shortcomings. *Regan T. Potangaroa* analyses the engineering and social complexities of providing post-disaster housing, illustrating these with respect to cladding and tsunami-proofing. He argues that poor understanding and communication of these complexities often impede the success of related projects. The third paper on post-tsunami reconstruction, by *Io Karydi*, is based on her AA thesis and suggests a comprehensive recovery plan for the coastal ribbon of Hambantota, Sri Lanka, where the tsunami impacted small-scale fisheries. The proposal represents an alternative to the rehabilitation strategies suggested by the local urban development authority.

The paper by *Sibilike Khamala Makhanu* discusses different approaches to mobilising resources for development and reconstruction projects in Kenya, Africa. While many developing countries benefit from pre- and post-disaster donor funding, they cannot meet the costs of the required reconstruction and sustainable development efforts alone. The author emphasises the potential of indigenous approaches for resource mobilisation to support more disaster-resilient development in the country.

*Colin H. Davidson* and *Cassidy Johnson's* viewpoint paper calls for better information management and proper databases to achieve improved and sustainable reconstruction projects. In this context, it is worth mentioning that the International Council for Research and Innovation in Building and Construction (CIB) recently established a task group on "Disasters and the Built Environment", which also aims to create better databases in the future.

Finally, *Jens Wodzak* reports on the third international I-Rec Conference on "Post-Disaster Reconstruction: Meeting Stakeholder Interest", which took place in Florence in May 2006. Given the increase in the number of disasters and their often dramatic impact on human settlements, such platforms for exchanging experiences are crucial for raising awareness among engineers, architects and planners in terms of accepting and fulfilling the difficult responsibility of providing sustainable and secure communities. This relates not only to physical/structural aspects of such communities, but also to environmental, socioeconomic and institutional ones.

It is a great challenge to make cities to become the solution rather than the cause of disaster risk. Some of the key issues that need to be tackled include: improved land-use management, urban planning and governance, disaster-resistant constructions, as well as related building and planning codes, frameworks and policies. It is hoped that this issue of TRIALOG will contribute to this process by spreading awareness and stimulating further discussion regarding integrating disaster risk management into housing and human settlement planning.

Christine Wamsler (Guest Editor)

## Building on Disasters

Volume Editors: Christine Wamsler / Kosta Math y

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# Understanding Disasters from a Local Perspective

## Insights into Improving Assistance for Social Housing and Settlement Development

Christine Wamsler

*Die Schäden der weltweit ansteigenden Naturkatastrophen sind erschütternd. Marginale Armen-siedlungen in Entwicklungsländern sind gegenüber diesen Naturkatastrophen am anfälligsten und somit am stärksten betroffen. Der vorliegende Artikel untersucht im Detail die dem Katastrophenrisiko und -vorkommen in Slums zugrundeliegenden Hauptvariablen und deren kausale Beziehungen, zu deren Analyse sogenannte „causal loop diagrams“ herangezogen werden. Die Sicht und das Wissen von Slumsiedlern in El Salvador stehen im Fokus dieser Untersuchung. Ein besseres Verstehen dessen, wie betroffene Familien Katastrophenrisiko und -vorkommen wahrnehmen und erfahren, gibt wichtige Einblicke, welche für die Verbesserung von Entwicklungshilfe — einschließlich sozialen Wohnungsbaus und Stadtplanung — von entscheidender Bedeutung sind.*

1

Risk is defined as: “The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Conventionally, risk is expressed by Risk = Hazards x Vulnerability.” See <http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm>. Risk reduction has become a popular term used to bring together those measures to minimise disaster risk throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards within the broad context of sustainable development. It is also a component of successful reconstruction.

2

[www.unmillenniuproject.org](http://www.unmillenniuproject.org)

3

The case studies were carried out within the framework of a broader research study on managing urban disasters which was initiated by the author in 2003. The outcomes so far are summarised in several publications (Wamsler 2007; 2006a,b,c; 2004).

The damage caused by the worldwide increase in natural disasters is staggering, with the poor and marginalised slum communities being the most vulnerable. This paper analyses the key variables and their causal relations underlying the complex system of risk and disaster occurrence in slum areas in El Salvador. Slum dwellers' views and knowledge are the focus of this inquiry. A better understanding of what households perceive, experience, and hence need in order to deal with risk and disasters can yield important insights into how to improve reconstruction and development aid, including assistance for social housing and settlement development. Causal loop diagrams, one of the main tools of systems analysis, is presented as an instrument that can help aid organisations in this process.

### Background

Over the past decades, the frequency of so-called natural disasters has increased worldwide, resulting in growing human and economic losses. In 2005 alone, over 360 disasters were reported, with around 92,000 people being killed, another 160 million suffering adverse impacts, and direct material losses of about US \$ 160 billion (UNISDR, 2006). Developing countries bear the highest losses in terms of human lives and gross domestic product (GDP), and El Salvador is no exception to this. On the contrary, being located in one of the most disaster-prone regions in the world, the country is strongly affected by natural disasters (Lavell, 1994).

Slum dwellers are particularly vulnerable to natural disasters. Low-income human settlements are often located on marginal land near rivers or on steep slopes; housing and infrastructure are

substandard and thus less disaster-resistant.

Among other problems are leaking sewage pipes from better-off settlements passing through slum areas to discharge into nearby rivers, a lack of water and waste management services, limited access to information, and overcrowding. Currently, more than one billion people worldwide live in slums and are forced to accept inhuman and dangerous living conditions. It is estimated that their numbers will double over the next 24 years (UN-HABITAT, 2003).

During recent years, increasing attention has been given to the need to reduce disaster risk<sup>1</sup> within the context of development work. The stated aim of the Millennium Declaration, namely, to achieve a significant improvement in the lives of at least 100 million slum dwellers by 2020, alludes to this need;<sup>2</sup> and the Hyogo Framework for Action 2005–2015 urges governments to address the issue of disaster risk in their sector development planning and programmes (UNISDR, 2005). However, aid organisations working in human settlement development in the field still struggle to sustainably reduce existing disaster risk in their everyday work.

A better understanding of the underlying drivers of risk and disaster occurrence in slums is a first urgent step towards improving the situation described.

### Objectives and Methodology

This paper is based on case studies carried out at the household level in El Salvador in 2005/2006.<sup>3</sup> Its objective is to investigate, from a local perspective, the existing disaster risk, the related causes and impacts, and the resulting local needs. The main focus is on analysing the key variables — and their

causal relations — that underlie the complex system of risk and disaster occurrence in slum areas. Slum dwellers' views and their extensive knowledge as to what makes them vulnerable or resilient to natural disasters are presented. The outcomes provide an understanding of what households perceive, experience, and hence need in order to deal with disaster risk and disaster impacts. This yields important insights into how social housing assistance could be improved.

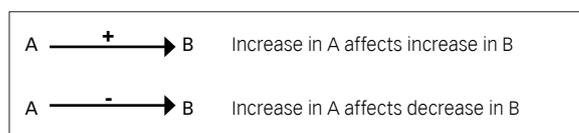
The research included observation, walk-through-analyses and interviews with 62 households, comprising a total of 331 persons, living in 15 disaster-prone slum communities.<sup>4</sup> For the data analysis, a combination of grounded theory (Glaser and Strauss, 1967) and systems analysis (Haraldsson, 2004) was applied.

In the following, analyses of the current situation in El Salvador will be presented, providing a "snapshot" from the household level of the selected slum communities. Discussed are, firstly, the significance of disaster occurrence, secondly, its underlying drivers, and thirdly, its impacts on slum dwellers. Finally, general conclusions are drawn regarding the needs and possible conditions that could assist in improving aid organisations' social housing assistance to effectively and sustainably manage risk and disasters.

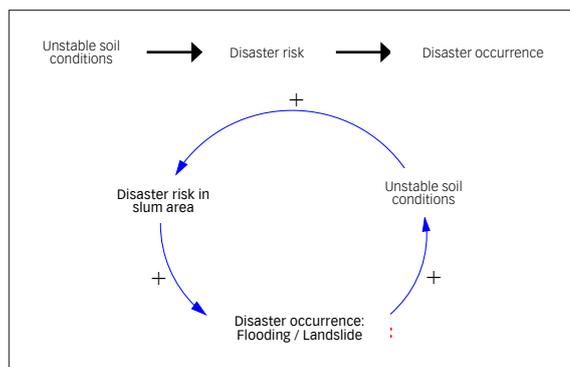
## Understanding Risk and Disaster Occurrence in Slums

In the slums analysed, flooding and landslides affect many slum dwellers, not only sporadically but annually, usually during the winter period. These were generally seen as the main risk to lives and livelihoods. Earthquakes and windstorms were next in importance. The lack of job opportunities and water provision, and the insecurity due to violent juvenile gangs (*maras*) were also seen as substantial "risks".<sup>5</sup>

Causal loop diagrams, one of the main tools of systems analysis, were used to develop illustrative models of the key variables and their causal relations that influence risk and disaster occurrence in slums.<sup>6</sup> A causal relation between two variables is portrayed by an arrow with a plus (+) or minus (-). As shown in *Figure 1*, a plus (+) or minus (-) indicates the type of change that occurs if variable A, at the beginning of the arrow, increases: A positive symbol (+) shows that the increase in variable A affects the increase in B. However, a negative symbol (-) means that the increase in A results in a decrease in B.



▲ fig 1: Illustration of positive or negative causal relations between two variables

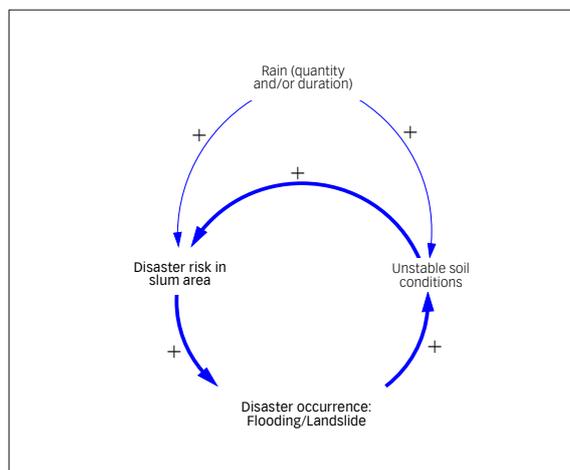


◀ fig 2: Flow diagram and corresponding causal loop diagram

The inclusion of non-linear relationships is one of the most important advantages of causal loop diagrams compared to conventional models, such as flow charts. Causal loop diagrams usually have at least one closed loop, representing feedback. *Reinforcing feedback loops* are circular relations between various variables, which are all connected with arrows going in the same direction (see *fig 2*). These loops could create a vicious circle and can be highlighted through the use of bold arrows.

When slum dwellers were asked about the underlying drivers of risk and disaster occurrence, the primary response of most referred to natural drivers (i.e., weather [rain] and soil conditions). *Figure 3* illustrates how the identified key variables "rain" and "unstable soil conditions" relate to risk and disaster occurrence. As can be seen, an increase in the amount of rain or in its duration could increase disaster risk and hence the occurrence of flooding and landslides.<sup>7</sup> In turn, flooding and landslides can make unstable soil conditions worse, resulting in a further exacerbation of disaster risk. In addition, more rainfall further destabilises unstable soil conditions, which again influences the occurrence of risk and disaster (see *fig 3*).

Upon probing, the majority of the interviewees knew of at least some other factors that increase their vulnerability. In fact, apart from natural drivers, it was possible to identify space-related, infrastructure-related, socioeconomic, organisational and institutional drivers.<sup>8</sup>



**4** The communities analysed are: La Chacra; Llanos de la Charcra; Quiñones Privado; Quiñones Municipal; San Martín Privado; San Martín Municipal; Casitas del Coro, Coro Nuevo; San Luis Portales, Bolívar, Granjero II and Nueva Esperanza (making up the slum area called "Los Manantiales, situated in San Salvador), José Cecilio del Valle and Divina Providencia (also situated in San Salvador) and Refugio (situated in and made up of people from the slums of the Bálamo region).

**5** For more information on juvenile gangs in El Salvador see Kotowski (2005).

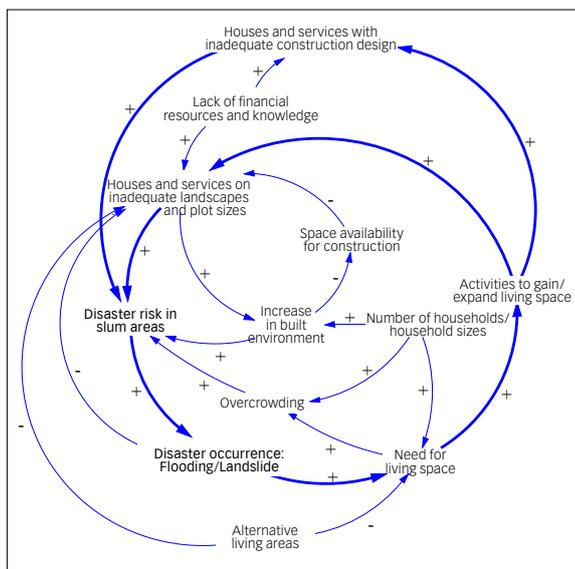
**6** The computer programme Vensim® was used to support the creation of the diagrams/models. These models can be used as a basis for computer simulations. See [www.vensim.com](http://www.vensim.com).

**7** Note that the relation between disaster risk and disaster occurrence is definitional. However, it is important to illustrate the variables separately in order to show causal loops as affected by disaster occurrence (i.e., not by disaster risk).

**8** Note that there is a range of variables that are inherent of different sub-diagrams and interconnect the different thematic loops. Those interconnecting variables are only partially included in the following figures.

◀ fig 3: Natural key variables underlying risk and disaster occurrence

fig 4. Space-related key variables underlying risk and disaster occurrence



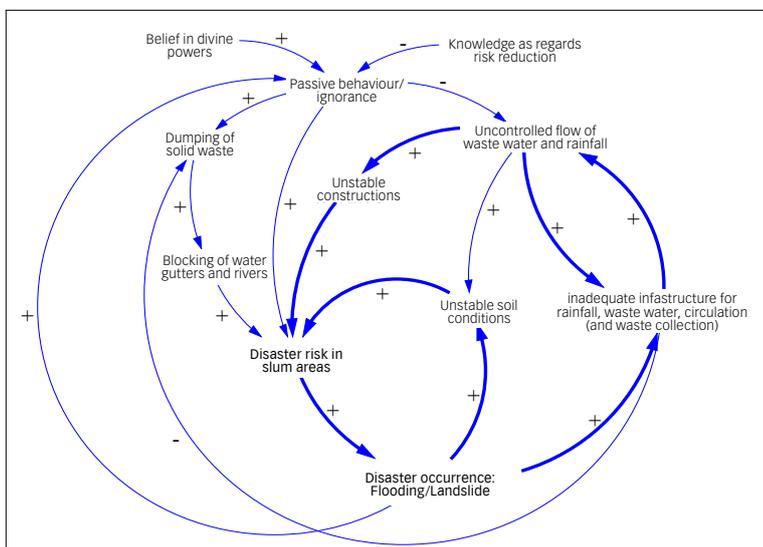
**9** Note that in all thematic causal loop diagrams presented, some influencing variables from other thematic groups are also included. For instance, in Figure 4, “number of households/household sizes” is a socioeconomic factor. However, as it has an important influence on space-related aspects, it was included in this diagram.

**10** In addition, disasters could increase the differences in the levels of residents’ financial resources.

**Space-related drivers.** Interviewees reported on residents’ different strategies to gain and expand their living space to cope not only with the growing number and size of slum households but also with the lack of alternative living areas. Strategies included neighbours downhill felling trees or excavating the slopes below their houses; neighbours uphill building latrines close to the declivity; and other residents claiming land from nearby rivers. As illustrated in Figure 4, a vicious circle could develop, with the increasing need for living space encouraging people to expand their living areas. Under slum conditions, this could result in unsuitable buildings and services being constructed in inadequate locations and on too-small plots. This is related to a lack of financial resources, knowledge, and available space for mitigation works. The outcome can be increased disaster risk and hence floods and landslides, which in turn affects the need for living space (due to loss of housing and land). Moreover, an increasing built environment (in terms of space and density) and overcrowding foster disaster risk. Figure 4 portrays the related key variables.

**Infrastructure-related drivers.**<sup>9</sup> Lack of adequate infrastructure (for waste collection, pedestrian and

fig 5: Infrastructure-related key variables underlying risk and disaster occurrence



vehicle circulation, rain and waste water) was another key variable identified. Slum dwellers reported on neighbours uphill allowing waste and storm water to flow on to their land, and people from inside and outside the settlement tipping solid waste down their hills or into the nearby rivers. Insufficient knowledge about how to reduce existing risk and the conventional belief that disasters are purely “divinely driven” may — together with a range of other needs — foster such behaviour. Blockage of water gutters and river flows, as well as unstable constructions, such as pathways and housing, are the outcome. Figure 5 illustrates related key variables and causal relations.

**Socioeconomic (and organisational) drivers.** The lack of financial resources due, among other things, to unemployment and low income levels, was mentioned frequently as one of the underlying causes of risk and disaster occurrence. The research indicated that a lack of financial resources, apart from its more obvious influence on the quality of housing and infrastructure and on people’s ability to absorb disaster impacts, further influences individuals’ community engagement (see fig 6). In fact, as people need to work at several jobs and take care of family members (e.g., children and the elderly), they have little time available for community efforts to reduce risk. Furthermore, better-off household members opt out of community involvement, which can have a negative effect not only on social cohesion but on the disaster resilience of the entire community. A general mistrust of community cohesion and the local community organisation was also identified. This was related, among other things, to corruption, co-optation, and political factionalism.

Figure 6 highlights a vicious circle that could develop: Disaster affects people’s already poor financial situation through, for instance, reduced income and additional expenses for reconstruction. Hence, increased disaster occurrence can result in an increased lack of financial resources.<sup>10</sup> This, in turn, increases people’s disaster risk, and hence flooding and landslides are more likely to occur.

**Institutional drivers.** Lack of or inadequate outside help was further mentioned by slum dwellers. In fact, national and municipal governments were often seen as unhelpful, and even a hindrance, to slum dwellers’ efforts to improve their situation. The actions taken by planning authorities and the information obtained by them with respect to the development and legalisation of planned settlements were often viewed as contradictory and unreliable. Further outside help was seen as crucial for, among other things, easing people away from passive behaviour.

The incremental improvement of housing and infrastructure in slums, which reduces disaster risk, is generally supported by governmental and non-governmental organisations, religious institutions

and political parties. Unequal distribution of such support was identified as being related to the level of community organisation, levels of corruption, and slum dwellers' individual relationships with the organisations mentioned. *Figure 7*, which summarises the institutional key variables, further shows that insecure tenure as well as promises of outside help being unfulfilled, can result in passive behaviour on the part of slum dwellers; that is, a general unwillingness to invest in reducing risk.

In the slum communities analysed, there was not only little sense of the mutual rights and obligations related to the settlements' maintenance and development (e.g., forbidding excavation of the slopes below houses or the construction of latrines close to declivities), but also a lack of information on risk reduction. Thus, the asymmetric disaster risk that the inhabitants incur is strong and rising, increasing tension among neighbours.

### Understanding Disaster Impacts

Within the slums analysed, the key variables and causal loops identified result in the regular and presumably increasing occurrence of natural disasters. As shown in *Figures 3–7*, disasters subsequently have a negative impact on some of the key variables. Disaster impacts often have long-lasting negative effects on slum dwellers' livelihoods as well as on the development of their settlements. The information obtained by slum dwellers suggests that disaster impacts can be classified as immediate and delayed, as well as short- and long-lived:

- a. *Immediate and short-lived*: Examples are electricity failures; temporary evacuations or resettlements; blocked accesses to houses or settlements; community distress; and psychological shocks.
- b. *Immediate and long-lasting*: Examples are destruction of or damage to housing, infrastructure, household and vegetation; loss of land and personal belongings; modification of the landscape; deaths; and traumas.
- c. *Delayed and short-lived*: Examples are secondary hazards, such as landslides during "normal" rain or through waste water flows due to soil instability and erosion caused by disasters; burglaries due to damaged houses; and reduced incomes.
- d. *Delayed and long-lasting*: Examples are illnesses caused, for instance, by waste water entering houses; accidents due to insecure pathways; family disruptions due to a permanent move of children to other family members; contamination of the environment as a result of the plastic sheets used for protecting slopes from rain being blown away; and reduced support (e.g., legalisation of land) by planning authorities due to increased and unacceptable risk levels.

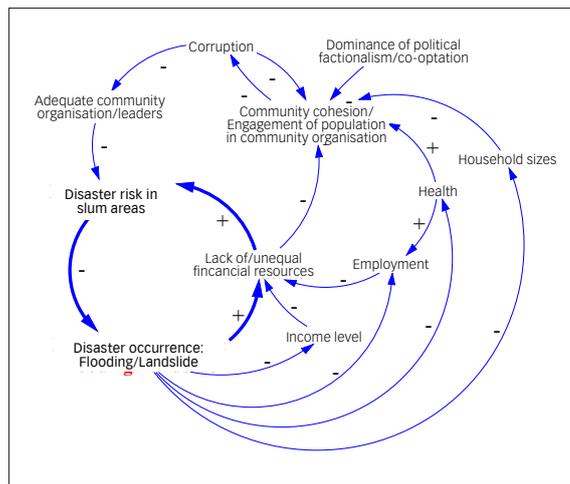


fig 6: Socioeconomic (and organisational) key variables underlying risk and disaster occurrence

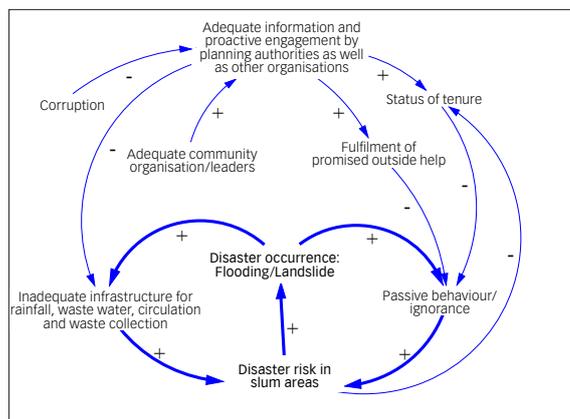


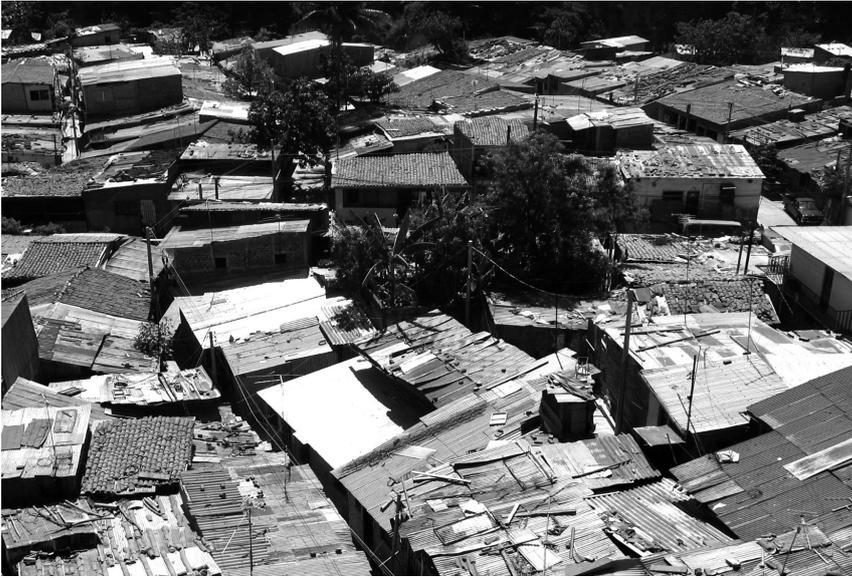
fig 7: Institutional key variables underlying risk and disaster occurrence

As with the key variables underlying risk and disaster occurrence, the impacts can also be classified as:

- Natural (environmental),
- Space- and infrastructure-related (physical),
- Socioeconomic and organisational,
- Institutional.

fig 8: Location of a slum community on marginal land and steep slopes





▲  
fig 9: Slum community in San Salvador

**11**  
The slum dwellers' coping strategies were analysed in detail and are presented in Wamsler (2007).

### Acknowledgements

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### Conclusions

The paper discusses — from a local perspective — key variables and causal loops underlying the complex system of risk and disaster occurrence in selected communities in El Salvador. It provides a comprehensive “snapshot” of what drives risk and disaster occurrence in slums. This new “vision” may provide fresh input into ongoing discussions which currently deal with the issue only in terms of location and construction quality — aspects that are seemingly “solved” simply through post-disaster resettlement. The paper shows that disasters are the outcome of a non-linear development process, with the key variables and disaster occurrence reinforcing each other. Disasters make the already precarious conditions of slum dwellers worse, creating vicious circles of increasing risk. “Poverty traps” can be the outcome. Assistance provided for social housing and settlement development could counteract such developments.

Causal loop diagrams, a tool of systems analysis, can help to provide an understanding of local contexts, perspectives and needs, and also assist in analysing the effectiveness of people's interrelated efforts to cope with risk and disaster occurrence.<sup>11</sup> This knowledge, which contributes to a better understanding of the conditions and conditionality for effective and sustainable project implementation, is crucial for development aid organisations that service slum communities, as they often do not have such information at their disposal and seldom carry out related analyses.

The research outcomes, illustrated in causal loop diagrams, confirm the respondents' views that improved housing and infrastructure in situ are crucial if physical/structural vulnerabilities are to be reduced. However, because of the complex system of risk and disaster occurrence, such improvements are not enough to achieve the sustainable security of slum dwellers' habitat, lives and livelihoods. The analysis

supports the accepted view that an integrated perspective regarding disaster risk management is necessary to achieve sustainable risk reduction. Hence, integrating disaster risk management into social housing assistance has to combine purely physical/structural improvements with environmental, socioeconomic, organisational and institutional risk reduction. The use of causal loop diagrams can help to develop and validate concrete and slum-specific project measures. For instance, only local efforts to cope with risk and disaster occurrence that, in effect, tackle the key variables and causal loops identified in a sustainable way should be supported by aid organisations. In addition, the study indicates that, to be sustainable, projects need to consider the improvement of social relations within slum communities, as well as the trust of these communities in national, municipal and local authorities. This could be achieved, for example, through improved communication structures, the creation of community rights and obligations, the offer of *communitarian and individual* project measures for risk reduction, professional education in disaster-resistant construction, and training both in risk awareness and in the repair and maintenance of community infrastructure.

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# Reducing Disaster Risk through Construction Design, Building Standards and Land-Use Planning

Tiziana Rossetto

*Der Artikel zeigt auf, dass angesichts des zunehmenden Katastrophenrisikos in Entwicklungsländern die Vernachlässigung von Mitigation und Prävention, das heißt von Maßnahmen zum Katastrophenschutz und zur Abschwächung von Katastrophenfolgen, in Entwicklungs- und Wiederaufbauprojekten nicht hinzunehmen ist. Die Anwendung der „best local practices“, also der bewährtesten lokalen Technologien, in Planung und (Wiederauf-)Bau der Infrastruktur ist nicht ausreichend, um eine nachhaltige Entwicklung angesichts von zukünftigen Naturkatastrophen sicherzustellen. Folglich sollten Entwicklungshilfeorganisationen verantwortlich sein für die in ihren Bauprojekten vorgesehenen Risiko minimierenden Maßnahmen sowie auch für Verluste, die dadurch entstehen, dass diese nicht berücksichtigt werden. Dieser Beitrag bietet Anleitungen dazu, wie Ansätze zur Prävention und Mitigation in Bauprojekte einzubeziehen sind, um nachhaltige und sozial akzeptierte Konstruktionslösungen zu entwickeln. Nur formelle Konstruktionen (vorwiegend Gebäude) werden hier betrachtet und keine spezifischen technischen Lösungen vorgeschlagen, da jeder Standort und jede Art von Risiko eine maßgeschneiderte Lösung erfordert, um den lokal vorhandenen Bedürfnissen und Ressourcen zu entsprechen.*

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## Introduction

In the event of a natural disaster, structural damage to the built environment constitutes the main direct and indirect cause of human and economic loss as well as setting back development goals. Despite a significant amount of development and reconstruction assistance being spent on housing and infrastructure, insufficient measures are currently being taken to ensure that this investment is not lost in the case of any future disaster. In past (re-)construction projects the selection of the location for services or critical facilities has often been made on the basis of land cost and availability, rather than from consideration of safety from potential natural hazards. Typically, development organisations will hire contractors who adopt "best local practice" for the design and construction of infrastructure. However, in many cases "best local practice" ignores relevant building codes for hazard-resistance. Even when building codes are used, in many cases these do not properly account for local hazards (EEFIT, 2007). The latter type of codes often exist in countries where natural disasters do not occur very frequently or where there is an incomplete historical record of past disaster events, leading to hazard or zoning maps that do not adequately represent the frequency of occurrence and potential magnitude of natural hazards.

The latter was recently observed for the October 8, 2005 Kashmir earthquake that had a magnitude significantly larger than predicted by the Pakistan seismic zone map for the area (EEFIT, 2007). In developing countries (especially former colonies) the building codes are derived from those existing in developed countries. For example the UBC, 1997 building code for seismic design is commonly used in Pakistan instead of their own building standards (EEFIT, 2007).

However, due to implicit assumptions of good workmanship and building materials in the latter codes, the safety factors and design provisions may not adequately account for local forms and quality of construction in developing countries (see *fig 1*) (Wamsler, 2004). Even when specific hazard-resistant building codes do exist, their correct application requires skilled engineers, architects, builders and effective enforcement and inspection procedures. However, in many countries this can not be guaranteed because certification and licensing of professionals is absent or because of a tradition of poor governance and corruption (see *fig 2*). Deficient enforcement is not limited to developing countries but may also be a problem in developed countries, as was highlighted by Hurricane Andrew in Florida 1992, USA, and the Izmit Earthquake in Turkey, 1999.

The negligence of disaster mitigation and prevention measures in development and reconstruction projects is unacceptable in view of the increasing disaster risk in developing countries caused, amongst other things, by environmental degradation, growing urbanisation and un-regulated land-use. The use of “best local practice” for designing and (re-)building development infrastructure is insufficient to ensure longevity of the development gains against future natural disasters. Consequently, development organisations should be obliged to include adequate hazard-proofing measures in their (re-) construction projects — if not be made accountable for future losses resulting from not doing so. This applies both to projects where the infrastructure design and construction is directly carried out by organisation staff or where the work is carried out through the hiring of consultants and contractors.

Within this paper some of the reasons for which disaster mitigation measures have been excluded

from development and reconstruction projects are discussed. General guidance for incorporating disaster mitigation and prevention into infrastructure (re-)construction and upgrading projects is then provided. This has been summarised from the “Construction design, building standards and land-use planning” guidance note, written by the author as part of the International Federation of Red Cross and Red Crescent Societies / ProVention Consortium Tools for Mainstreaming Disaster Risk publication series (ProVention Consortium, 2007). The latter draws on lessons learned from the study of development and reconstruction projects that have been successful or have failed in providing sustainable hazard-resistant infrastructure, and combines these with current design and risk assessment theories in the field of hazard-resistant engineering (e.g. “performance-based design” in the earthquake engineering field).

### Dispelling a Myth and Learning from Past Successes

Two of the reasons for which the hazard-resistant design of development infrastructure has not entered standard practice are the perceived higher cost and the lack of appropriate expertise in hazard-resistant construction. The first of these can be considered a myth. The implementation of hazard-proof measures in building can be relatively inexpensive in terms of construction costs. For example, introducing earthquake-resistant principles (optimum layout, use of capacity design principles and more stringent criteria for the design of connections) at the design stage of modern infrastructure will only increase the construction costs by 5-14%. In fact, the retrofit for hurricane-resistance of the Victoria Hospital (St Lucia) in 1993 and the Princess Margaret Hospital (Dominica) in 1980 was estimated by Consulting Engineers Partnership to be 1% and 2.2% of their contemporary replacement costs, respectively (Gibbs, 2002). These costs are insignificant compared to the potential costs of activity disruption, repair or reconstruction following a natural disaster event. For example, a deep sea water port in Woodbridge Bay, Dominica, which construction was funded by the Caribbean Development Bank, USAID and the government of Dominica, experienced severe damage to its port facilities due to Hurricane David in 1979, one year after the project completion. Repair costs amounted to US \$ 3.9 million (estimated for 1982), 41% of the port construction costs, whereas strengthening of the port structures at the design stage would have cost only 10% of the construction costs (CDMP, 2004).

The expensive element in mainstreaming hazard-resistant construction is the provision of an effective framework for the take-up of these measures, for instance the provision of skills training, appropriate hazard studies, research into low-cost strengthening solutions. However, if an effective mechanism exists for the enforcement of codes of practice and of

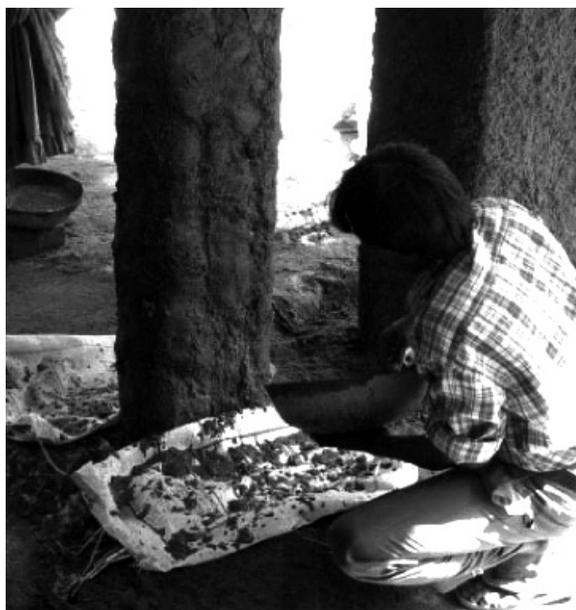


fig 1: Example of poor workmanship: worker adding concrete to a damaged column in Ahmedabad, India, following the 2001 Bhuj earthquake

fig 2: Repair (continued construction) of an unsafe building in Abbotabad, Pakistan, that was damaged by the October 8, 2006 earthquake



quality control, these costs will all be covered by the construction industry or the national government, and hence not by aid organisations. The problem in many cases is the lack of legal mandating of building codes and consequent lack of their enforcement, which puts the onus on agencies commissioning and funding development and reconstruction projects to also provide the necessary research and development, training and education. Even in this case, however, it has been found in the Caribbean Disaster Mitigation Project (CDMP, 2001) that the development and enforcement of appropriate building codes and standards does not make development and/or reconstruction costs prohibitive.

In development agencies, there is generally a lack of expertise for the design and implementation of sustainable hazard-resistant construction solutions. It is therefore essential that hazard and construction experts are consulted and engaged in the coordination and design of the project and construction works. A small input by such people at the outset of the project design can ensure the correct level of hazards and level of risk are being designed for and that appropriate technical solutions/construction practice is being employed. The actual construction may then be executed by others, so long as there is a strict control on construction. A significant number of cases exist where development or reconstruction infrastructure projects have been successful in ensuring longevity beyond the next disaster event by incorporating expert consultation and appropriately considering potential hazard and community needs. For example, in 1987 after Typhoon Sisang, 450 housing units were constructed in the Philippines by the Department of Social Welfare and Development (DSWD) in consultation with the Asian Disaster Preparedness Centre in Bangkok (ADPC). These houses were built with a strong timber core shelter clad with local materials, and resisted two subsequent typhoons without significant damage (Diacon, 1992). A further example is that the only two surviving schools in Grenada after Hurricane Ivan in September 2004 had been subject to retrofit through a World Bank initiative (World Bank, 2004). The proven success and benefit of such projects provides a compelling argument for mainstreaming of hazard-resistant construction in development and reconstruction projects.

### **Incorporating Disaster Risk in Housing and Infrastructure Projects**

ProVention Consortium Guidance Note no.12 outlines the considerations that need to be made in the appraisal of development and reconstruction projects for infrastructure building or upgrading (Rossetto, 2007). These considerations provide a basic and very general methodology for the inclusion of disaster risk in each relevant stage of the latter projects, and are summarised here.

### **Step I: Defining Roles and Responsibilities**

Roles and responsibilities with regard to the main aspects of the project (i.e. the hazard and risk assessment, design and siting of appropriately hazard-resilient infrastructure, enforcement of design and quality control of construction, operation and maintenance), of the various individuals, agencies and organisations involved in the project must be clearly defined at the project outset. It is good practice to seek to coordinate with other development or humanitarian relief organisations working in the area to avoid duplication of research effort into hazard-proof construction, and to promote a harmonised use of hazard-proof construction standards.

It has already been stated that it is important to involve hazard assessment and hazard-resistant design experts right from the start of the project. A system for consultation with these experts during the design and implementation of the project should be set up. It is also essential that local stakeholders are consulted throughout the project. These include direct beneficiaries, the wider affected community, local authorities, the government and local academic and building experts. This will aid in the development of a truly sustainable technical solution (for infrastructure upgrading or reconstruction) and will increase acceptance of the project.

### **Step II: Review of Legislation and Good Practice**

A review of existing building codes for hazard-resistance should be carried out to determine whether they are adequate. This involves: (1) looking at the representation of hazards in the codes and their compliance with the hazard assessment findings; (2) investigating the performance of infrastructure designed to the codes during past disaster events; and (3) comparing loading and design criteria to building codes developed for countries with similar hazards and neighbouring countries with similar construction practice. If local building codes are deemed unacceptable, good practice, international building codes and design guidelines appropriate to the identified hazards should be reviewed and their applicability assessed.

Ideally, such a review would have already been completed at the national level, by a development organization or by a local research/academic body. This can then be drawn upon as relevant to the specific project context.

### **Step III: Assessing the Hazards and the Socially Acceptable Risk**

In order to set the design criteria for a development or reconstruction project, the hazards, the current risk and level of risk that is socially acceptable must be identified.



fig 3: The collapsed roof structure of a school in Muzaffarabad, following the October 8, 2005 Pakistan earthquake

**1** Building codes are defined by OAS (2006) as standards and guidelines for the construction of buildings and infrastructure to a minimum level of safety for the occupants. However, as described in the foregoing section, in practise this is not always the case.

The “socially acceptable risk” is the probability of failure (damage) of infrastructure that is acceptable to governments and the general population in view of the frequency and size of local natural hazards, the infrastructure use, its importance and the potential consequences of its damage. For example, it is completely unacceptable that a nuclear power station is damaged under any natural hazard event due to the potentially severe consequences of its damage. Hence the acceptable risk in this case is zero. However, for most other buildings it is uneconomical to build to fully resist the largest possible natural hazard, especially in view of the rare nature of such events. Therefore, a limited risk is accepted and an event smaller than the maximum possible is typically designed for. In order to determine the socially acceptable risk, local and national building codes,<sup>1</sup> international legislation and good practice should be looked at in the first instance. These will provide an idea of the current accepted levels of risk for different hazards and infrastructure. For example, in the case of most earthquake engineering codes, structures of normal importance are designed to withstand an earthquake with a 10% probability of being exceeded in 50 years (i.e. an event with a return period of 475 years). The local government and community should then be consulted and a level of risk determined for the design. Special consideration should be given to critical infrastructure such as hospitals, which should be operational after a natural disaster, and for schools where the socially acceptable risk is less than for normal buildings (see *fig 3*).

In order to determine the hazard level for design, a multi-hazard appraisal is required at an early stage. All potential sources of natural hazards (geological, meteorological or hydrological) in the area should be identified and their likely severity and recurrence evaluated. Existing academic studies and hazard maps may provide information for the hazard evaluation. However, depending on the prevalent hazards and the site, it may also be necessary to conduct site specific risk analysis or micro-zonation studies. The aim of the hazard assessment is to determine the most likely hazard scenarios for consideration in the infrastructure design.

If the project involves the development of a large area, locations likely to become unsafe in the event of a natural hazard (e.g. locations prone to flooding, landslides or earthquake induced liquefaction), need to be identified and their land-use assessed. This assessment should consider the possibility of local secondary hazard effects (e.g. landslides from excessive rain or ground shaking).

In view of the determined acceptable risk and the assessed hazard risk, clear and measurable objectives for hazard-safety should be defined. These objectives are those to which agencies carrying out development or reconstruction projects should be held accountable.

#### Step IV: Review of Construction Methodologies and Local Capacity

The ability of local construction techniques and materials to resist the identified hazards needs to be assessed in order to determine the current disaster risk. In project areas where construction codes are enforced, this may be answered by the review of local building codes for hazard-resistance previously carried out. Where hazard-resistant codes do not exist or have not been enforced, an on-site survey of existing buildings and infrastructure can help identify specific construction vulnerabilities for the relevant type of infrastructure and natural hazard. A fairly rapid survey may suffice in the case of new (re-)constructions, but a more detailed analysis is required in a retrofitting project. An assessment of the vulnerability of infrastructure to the identified natural hazards will include an evaluation of the level of building code compliance, of the strengths and durability of construction materials and of who carried out the design and construction (engineered, non-engineered, self-build or contractor build).

A local capacity assessment includes looking at the types and sources of local building materials, and the level of training of local builders.

#### Step V: Designing a Sustainable Hazard-Resistant Building Solution

The objective is to design a sustainable and socially acceptable strengthening or building solution that satisfies the hazard-safety objectives previously identified. Such a solution must consider limitations of construction skills and material availability identified in the local capacity assessment, and methods for enhancing these capacities if necessary. Financial constraints must be considered as well as the potential environmental and social impacts of the proposed solution. A procurement strategy should be established in conjunction with the design solution, which provides overall value for money and resources during the whole life of the service/facility. Furthermore, in designing a strengthening solution or hazard-safe

(re-)construction technique, it is important that the chosen design should consider *all* potential hazards, not just the natural hazard causing the most recent disaster. In many cases design features intended to enhance resilience to one type of natural hazard will also enhance resilience to others, for example the provision of good connections between foundations, frames, walls and roofs of buildings. However, in certain cases design features that are desirable for the resistance of one type of hazard may be detrimental to the resistance of another. For example heavy roofs are desirable for the resistance of strong winds due to cyclones, storms or typhoons, but will increase the forces on buildings subjected to earthquakes.

A heavy-handed engineering approach which adopts new materials and building technologies to enhance hazard-resilience may not necessarily provide a solution which can be correctly applied (see *fig 4*), sustainable, acceptable to the local community. It is often not necessary to implement completely new building methods and materials in order to provide a safe solution. Simple and inexpensive structural improvements, combined with good quality construction methods and continued maintenance can overcome major weaknesses (Aysan et al, 1995). For example, in Peru sheets of welded steel mesh covered in cement-sand mortar were applied to the walls of existing adobe houses during a prototype reconstruction programme carried out by the German Agency for Technical Cooperation (GTZ) in 2001. When another earthquake shook Peru in 2002, these houses survived undamaged, whilst nearby houses collapsed or were severely damaged (Pinto et al, 2003). If new materials are introduced care must be taken to ensure that there exists an adequate skills base for their use, or that training is provided, in order to avoid increased vulnerability from poor construction.



As previously stated, in view of the fact that their post-disaster event operation is essential, critical facilities and infrastructure should be designed for a lower accepted risk level than normal buildings. This means that hazard-resistant criteria set out in building codes for normal infrastructure may not be applicable. New developments (e.g. FEMA, 2000; PAHO, 2004) advocate the “performance-based design” of critical facilities. This involves the association of desired performance objectives (e.g. operation and life-safety ensured) with different hazard-event return periods (e.g. a very rare event and largest possible event) for the determination of the loading for the building design. In order to ensure serviceability, the hazard-resistance of infrastructure serving critical facilities should also be assessed and their up-grading included in the development project if their resistance is deemed insufficient. Most importantly, all critical facilities should be designed by professionals with appropriate certification and specialised expertise.

#### Step VI: Selecting Adequate Construction Sites

Site selection forms an important part of the infrastructure design process. Choosing a site in an area of reduced disaster risk may remove the need to adopt hazard-resistant construction techniques. Topographical features and landscape can be used to reduce the impact of potential natural hazards (e.g. to minimise flood risk or modify wind-speed and wind direction). De-concentration of critical services introduces redundancies and avoids the “domino” effect of service outage in communities affected by disasters.

In most cases however, the site for development or reconstruction will be defined by local governments based on availability and economic criteria. The suitability of these sites needs to be assessed in view of the hazard assessment previously carried out. Checklists such as those of Corsellis and Vitale (2005) and The Sphere Project (2004), amongst others, can also be used to assess site suitability and whether additional engineering works are required to render the site suitable.

#### Step VII: Construction

It is essential that the quality of the construction does not compromise the design intent. A procedure must therefore be established for the multi-disciplinary inspection and checking against specifications of works throughout the building process.

#### Step VIII: Operation and Maintenance

The importance of funding provision and guidance for operation and maintenance is often overlooked. In order to maintain the design level of hazard-resilience guidance for maintenance works should be specified, a financing method for these works provided and an enforcement procedure put in place

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 fig 4: Example of incorrect strengthening solution: steel bracing has been added to strengthen the masonry columns in a building in Ahmedabad, which lies 150 km from the epicentre of the 2001 Bhuj, India earthquake. This bracing has no structural use and will not result in a good performance of the building if another earthquake happens close by.

for ensuring the work provision. A procedure should also be set up for the approval of any structural alterations carried out through the design life of the structure which might affect its hazard-resistance.

### Step IX: Project Evaluation

The adequacy of the chosen infrastructure design and the success of the project as a whole must be evaluated. Its intended and unintended functionality, impacts on socio-economic, environmental, institutional and organisational vulnerabilities, social acceptability, related sustainability, and observed performance under any disaster event that may have occurred should be considered. Also, the final project cost should be compared to the potential benefits of (a) the hazard-proof design in future events, (b) any skills provided to builders, and (c) new construction guidelines introduced. Finally, lessons learned regarding strengthening hazard-resilience should be summarised, divulged and drawn on for future projects.

### Conclusions

In view of the increasing disaster risk in developing countries caused, amongst others, by environmental degradation and growing urbanization, the exclusion of disaster mitigation and prevention measures in development and reconstruction projects are no longer acceptable. It is argued that the cost of introducing hazard-resistant principles in construction is not prohibitive, and past initiatives that have adopted such measures have proven they can yield a large benefit in the occurrence of a natural disaster. A general methodology was presented for introducing sustainable hazard-resistant building solutions in development and reconstruction projects involving housing and infrastructure construction. Specific technical solutions are not proposed as each location and hazard requires a solution tailored to meet local needs and resources.

Ensuring the successful mainstreaming of safer construction in development and reconstruction projects goes beyond the elaboration of a methodology for the inclusion of disaster risk issues. Development agencies need to engage hazard assessment and design specialists in the coordination and design of the project and construction works. In developing countries, technical guidance, training and education may need to be provided to local engineers, builders and architects to promote hazard-resistant construction. In addition, more research into the hazard-resistance of non-engineered structures needs to be carried out in order to develop cheap and sustainable strengthening methods for vernacular structures. Pre-disaster risk studies need to be carried out and, on this basis, building codes for developing countries improved.

A regulatory system is further required for the enforcement of hazard-resistant building codes

and quality control of construction. The latter two cannot be achieved on a wide scale unless national governments become sensitised to disaster risk issues. Finally, increased ("performance-based") criteria for hazard-resistance need to be introduced into the design of critical infrastructure.

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# Collaborative Donor Support for Reconstruction in Honduras: Lessons Learned

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*Der Autor erläutert Erfahrungen bilateraler und multilateraler Geberorganisationen im Zuge der Wiederaufbaumaßnahmen nach dem Wirbelsturm Mitch, der 1998 große Bereiche Mittelamerikas verwüstet hatte. Der Text beleuchtet die positiven Einflüsse (und auch deren Grenzen), die die sorgfältige Abstimmung der Geberaktivitäten haben kann hinsichtlich (1) der Erhöhung des Wirkungsgrades von Wohnungsbauprogrammen, wenn gleichzeitig sichergestellt ist, dass sie tatsächlich die Ärmsten erreichen; und (2) der Bildung und Stärkung institutioneller Kapazitäten innerhalb der für die Durchführung verantwortlichen Einrichtungen. Die abschließend aufgestellten „lessons learned“ legen nahe, dass es durchaus möglich ist, mit Wiederaufbaumaßnahmen in Folge von Naturkatastrophen nachhaltige Verbesserungen der sozialen Wohnungsbauförderung in Gang zu setzen.*

## Introduction

After Hurricane Mitch in 1998, a range of donors engaged in Honduras in order to help rebuilding the country. The paper presents lessons learned from the collaborative experience that two bilateral donors KfW (the German Bank for Development and Reconstruction) and Sida (the Swedish International Development Cooperation Agency), as well as a multilateral agency IADB (the Inter American Development Bank) had in supporting and transforming two governmental low-income housing programmes into the 'Social Foundation for Rural and Urban Social Housing' (FUNDEVI).<sup>1</sup>

The paper illustrates the potentials and constraints donor coordination can have in (a) up-scaling the outputs of post-disaster housing programmes while ensuring that they reach the poor, and (b) generating institutional capacities of national executing agencies. The gained experiences in finding ways to support policy and operational changes in the housing sector further encouraged similar efforts in other countries in Central America.

## The Impact of Hurricane Mitch in Honduras<sup>2</sup>

Rapid population growth<sup>3</sup>, environmental degradation, inadequate infrastructure, and massive disparities in the distribution of wealth and land<sup>4</sup> manifest in extremely vulnerable living conditions for the rural and urban poor in Honduras. This situation became obvious when Hurricane Mitch struck Central America in late October and beginning of November 1998. In Honduras, 5,000 people died, 8,000 were declared missing; and 12,300 wounded. 50,000 houses and 90 bridges were destroyed; 1,700

potable water systems were collapsed; and 70% of all agricultural land became unproductive. Economic losses were calculated around 3.8 billion US Dollars, which is equivalent to 70% of the Honduran GDP. One year later, the country's GDP had a negative growth of -5.7% and unemployment increased from 3.2% to 5.1% of the total labour force. The situation generated massive migration to the United States of America and Canada. Unfortunately, the country was unprepared for recovery and reconstruction, both in terms of policy systems and resources.

## Post-Disaster Efforts of Donor Agencies

The damage caused by Hurricane Mitch was of historic proportions and so was the national and international reaction to the disaster. Solidarity from the world flowed through different channels and networks to governmental and non governmental development agencies. The process of dealing with the emergency and reconstruction phase gave birth to important discussions on the best ways to achieve "development", as well as on the type of development that should be targeted. The disaster provoked discussions on how to reduce poverty, inequalities and vulnerability, and how to increase democratization and a less destructive use of the region's natural resources. This was based on the fear that the damages produced by Mitch could reverse the political and social recovery process that the region had been initiating after decades of civil wars and social turmoil.<sup>5</sup>

The 'Stockholm Conference for the Reconstruction and Transformation of Central America' in late May 1999 was an important benchmark in this process. At

**1** The paper draws from previous documents prepared by the author (Stein 2005a and 2005b).

**2** The following sections are based on UNDP (1999); ECLAC (1999); CEDAC (2002); Frühling (2002); Pearce-Oroz (2005); Telford et al, (2004), as well as the personal experience of the author who was directly involved in the reconstruction process as programme officer at the Swedish Embassy in Tegucigalpa, Honduras.

**3** Population grew from 1.4 million in 1950 to 7.0 million in 2004 and the percentage of urban population increased from 29% in 1970 to 40.3% in 1990 and to 49% in 2004. From 1990-1995, average annual urban growth was 4%.

**4** In 2001, the Ginni coefficient which measures income inequality for Honduras was 0.564 (amongst the highest in the region). The richest 20% of the population earned 59.4% of the total income while the poorest 20% earned only 2.3%.

5

Between 1965 and 1995, half a million people lost their lives as result of political and social unrest and civil wars. Honduras did not suffer as Guatemala, El Salvador and Nicaragua, but its territory was used by the counter revolutionary forces to destabilise the Sandinista Regime in Nicaragua.

6

The Declaration called for the region's governments and the international community to commit to the reconstruction efforts based on six principles: a) the need to reduce social and ecological vulnerabilities; b) an integrated approach of transparency and good governance; c) consolidating democracy by reinforcing the process of decentralization and participation of civil society; d) respect for human rights by promoting equality between women and men, and the rights of children and ethnic minorities; e) coordinating donor efforts guided by priorities set by the recipient countries; and f) reduction of the external debt burden of the affected countries (see: [http://www.iadb.org/regions/re2/consultative\\_group/declaration.htm](http://www.iadb.org/regions/re2/consultative_group/declaration.htm)).

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Working groups were set in the following areas: risk reduction; housing; water and sanitation; education; health; food security; agriculture and natural resources; roads and bridges; transparency and accountability; decentralization and municipal strengthening; justice and human rights; macroeconomic policies and poverty reduction; and small and medium size enterprises.

8

According to data provided by the Ministry of Public Works, Transport and Housing, US \$ 309 million was channelled through 75 organisations that by the end of 2001 had produced 37,155 housing solutions.

the meeting, bilateral and multilateral donors pledged 9 billion US Dollars to be used over a period of three years (1999-2001) for the reconstruction of the region.

About one third of these resources were given to Honduras. The condition to obtain the money was that the recipient governments had to comply with the Stockholm Declaration.<sup>6</sup>

In Honduras, the follow-up process to the Stockholm Declaration enabled an intensive dialogue on reconstruction and transformation. Three dialogue spaces were established: 1) a group of ambassadors and representatives of the donor community met regularly with high-ranking members of the Honduran government to discuss political sensitive and strategic issues; 2) a technical commission formed by the donor community, civil society, local governments and key ministries of central government analysed in detail how the principles of the Stockholm Declaration translated to broader policies and coordination efforts; and 3) several working groups of representatives of civil society, local and central governments, and donors directly involved in a particular sector shared regularly information, discussed concrete policies and programmes and set follow-up indicators to assess the reconstruction progress.<sup>7</sup>

### Human Settlement Reconstruction

While external resources helped to satisfy basic necessities, the human settlement reconstruction process was not smooth at all. The need to act quickly, combined with logistical difficulties and a lack of effective management on the part of the Honduran central government and local authorities, resulted in improvised and uncoordinated efforts.

In spite of the massive resources available for housing<sup>8</sup>, there were several difficulties: Suitable and uncontested land for resettlement was scarce, the Honduran government and some donors failed to install basic infrastructure and services in time, and there were no consistent and efficient systems for evaluating projects and issuing the legally required environmental permits. No legal framework existed for the enforcement of planning and construction standards and codes. No clear criteria existed to determine who (and to what degree) had been affected by Mitch, and therefore who might be eligible for state and/or international assistance. Furthermore, criteria were lacking for deciding on temporary versus permanent solutions, be it for water drainage or housing reconstruction.

Some international aid organisations arrived with little or no prior experience in the country. The quality of the work of many non-governmental organisations (NGOs) was inadequate and competitive (as regards to donor resources, land purchase and access to beneficiaries).

Many NGOs reported that it was their first involvement in housing reconstruction. Hence, sub-standard work and an absence of environmental impact assessments, socio-economic evaluations of intended beneficiaries, and sound appraisals of possible construction sites were common. Some international charitable organisations (confessional and non-confessional) started introducing schemes that generated passivity and disempowerment among the project beneficiaries, by not involving them in any of the phases of the housing project cycle, and without having a clear strategy for long term financial sustainability.

Furthermore, conflicts accentuated generally between families affected by Mitch and poorer families that historically were excluded from governmental housing schemes but did not suffer damage during the disaster.

Huge settlements emerged in the periphery of cities some located dozens of kilometres away from the resettled households' livelihoods. Examples in point are 'Limón de la Cerca' in Choluteca where more than 2,300 housing solutions were built, and the Amaratoca Valley housing projects located 20 kilometres away from Tegucigalpa, with more than 3,500 housing solutions.

### Impact on Developmental Social Housing Programmes

PVMR (The low-income rural housing programme) and PRIMHUR (The integral urban housing improvement programme) were two semi-autonomous governmental programmes created in the 1980s and beginning of the 1990s, with the support of KfW and the Honduran Government. Since they started operations until 1998 (before hurricane Mitch), both programmes had given technical and financial assistance to about 12,000 low-income families to improve their housing conditions through self-help methods and affordable loans.

Given their proven track record of assisting poor families to find housing solutions, it was natural for both programmes to start working in resettlement, in-situ rehabilitation and slum upgrading for families affected by the hurricane. With resources from Sida and additional funds given by KfW, both programmes managed to work in 27 different municipalities providing financial and technical assistance to the reconstruction of about 10,000 housing solutions. Sida also gave the Honduran Social Investment Fund (FHIS) a special fund for the provision of basic services and infrastructure for those resettlement housing reconstruction projects in urban areas where PRIMHUR would be working.

From the beginning, the cooperation between the two donors aimed at overcoming some of the problems that occurred at the national and local levels during

the reconstruction process. The idea was to show that incentives for community participation, cost sharing and cost recovery to create long-term sustainable financial and institutional models were possible, and that appropriate consultation with beneficiaries and local governments can result in better housing solutions. KfW and Sida were both of the opinion that it is possible during a post-disaster period, to resettle families effectively and efficiently without recreating new slums. It was decided with PRIMHUR and PVMR that marginalised poor but unaffected families should be targeted together with affected families and be resettled in the same territory in order to produce a more heterogeneous social and economical settlement composition.

In Choluteca, PRIMHUR decided not to work in the settlement called 'Limón de la Cerca'. Instead, it collaborated with the municipal authorities in developing the settlement 'Inmaculada Concepción', which was designed for 510 families and where innovative approaches were tested: (a) secure land tenure for all participant families and secured by the Municipality as pre-condition for starting a project; (b) an agreement between the local authorities, service providers and the community for the incremental development and maintenance of basic infrastructure and services; (c) housing construction through self-help incremental methods; (d) financial mechanisms to secure project execution and financial sustainability; and (e) most importantly, the mixing of poor families that were and were not affected by the hurricane as project beneficiaries.

The project faced different obstacles: given their income sources, some families decided to go back to their original living place and left project houses incomplete; FHIS was slow in delivering basic services, causing a delay in the resettlement of some families; and activists from the main political parties and some community leaders started a campaign against PRIMHUR to stop loan repayment by the beneficiaries, as part of the election campaign that started early in 2000. Yet, the experience helped to shape a new working model for settlement development that became known as 'incremental urban resettlement'. The model had the following components: basic houses are built in good standards as a basic unit but not a complete structure; individual credits are repaid as regular loans which are combined with subsidies allocated by the State according to households' income; and the introduction and maintenance of roads, drainage, water, electricity and schools is done incrementally and under the responsibility of the state and local authorities, but with community participation.

### Cooperation for Social Housing Transformation

With KfW and Sida's support, the two housing programmes PVMR and PRIMHUR started addressing some key issues that were evident even before Mitch: the need for a long-term housing policy and of creative strategic financial perspectives that allow more efficient operative methods to address the housing and infrastructure problems of the poor. Some of the key aspects/products which were supported in this process are presented in the following.

fig 1: Settlement in Honduras



9

In December 2001, the Honduran Parliament approved the bill for the transformation of PVMR and PRIMHUR into FUNDEVI based on an agreement between KfW, Sida and the Honduran Government by which the parties approved that the resources of the revolving funds and assets managed by the two programmes would be transferred to the new entity.

10

The housing reconstruction loan approved by IADB's Directory in June 1999 was reformulated in two opportunities because the Honduran Government did not comply with the conditions established in the agreement. It late 2002 resources were made available to FUNDEVI.

*Institutional change:* PVMR and PRIMHUR were restructured and transformed into a private foundation of public benefit known today as FUNDEVI. The new operational, institutional and legal framework gave FUNDEVI greater political and financial autonomy and a permanent legal status that the two separate governmental programmes did not have before.<sup>9</sup>

*Formalized subsidy schemes for social housing:* The housing reconstruction efforts were used as pilot projects to define a subsidy scheme that could complement the self-help efforts of participating families as well as the loans provided by FUNDEVI. The projects became the basis for a formal and national housing subsidy policy for low-income families that earn less than 500 US Dollar/month.

*New financial products for social housing financing:* New financial products were introduced within FUNDEVI in order to address some of the main obstacles that were identified before and during the reconstruction process, including the lack of serious efforts to recover the loan portfolios. These new products include the offer of micro-loans for housing rehabilitation, improvements and repairs, and the establishment of a financial facility within FUNDEVI for municipal authorities for the development of infrastructure and basic services in existing and new settlements.

*Donor coordination:* Administrative and operational procedures were harmonized and reporting routines uniformed in a way that suited both donors.

*Institutional strengthening:* The Urban and Housing Planning Unit within the Ministry of Public Works, Transport and Housing (SOPTRAVI) was strengthened to be responsible for a housing geographic information system (GIS), to set new building norms and codes and to assist and supervise other institutions in the execution of housing projects.

*Improved social housing policy:* Urban and rural low-income housing issues were promoted and

introduced as an integral part of the Poverty Reduction Strategy elaborated in the year 2002.

The acquired experiences and the new operational and legal status of FUNDEVI attracted other donor agencies interested in channelling reconstruction resources. The European Union (EU) gave €4.28 million for 1,250 houses and the IADB provided 10 million US Dollars for subsidies that would complement the loans given by FUNDEVI to 6,500 families for the repair or reconstruction of their houses. Both KfW and Sida assisted IADB in finding alternative ways so that the funds could be used by FUNDEVI, given the fact that the channelling mechanisms and executing agencies that the Government of Honduras and the Bank had identified previously were discarded.<sup>10</sup>

The resources from the different donors were used to finance the introduction and expansion of infrastructure and basic services, the legalization of land tenure, the purchase of land, the improvement and repair of houses, and the construction and acquisition of new houses. The direct outcome of the collaboration effort are more than 20,000 low-income families that have found a housing solution in both existing and new settlements (about 41% of the participant families live in extreme poverty and 79% under the poverty line). After the reconstruction phase, between 2002 and 2005, FUNDEVI's active loan portfolio grew from 18 to 28 millions US Dollars. In 2004, about 3,300 housing units were built, with an investment of 12 million US Dollars: 54% were loans (with resources provided by KfW and Sida), 35% were subsidies (with resources provided by IADB) and 11% contributions by participant families.

Yet, not everything worked smoothly. The rush to complete the IADB resources in a short period of two instead of four years, created enormous pressures upon the institution that resulted in confusions and in some cases lack of clarity on how to apply basic loan and subsidy assessment analysis. In the short term this affected the quality of the loan portfolio and had immediate financial repercussions as arrears increased. It has taken some years to fix this problem.

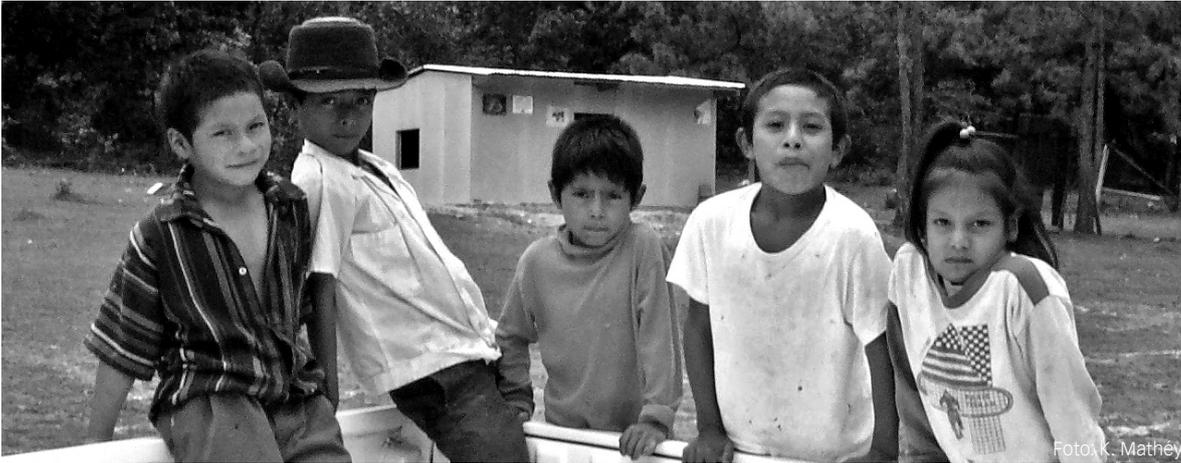
## Lessons Learned and Recommendations

The coordinated channelling of donor resources of KfW, Sida and IADB through the social housing foundation FUNDEVI was one of the first experiences of donors in harmonizing their reconstruction work after Hurricane Mitch in Honduras. To replicate the experience in other contexts, the lessons and recommendations deriving from this effort need to be carefully looked at:

*Increased social impact:* The expansion of FUNDEVI's operation increased its social housing delivery capacity from annually 1,000 units before the hurricane to about 4,000 units after the disaster.

fig 2: Housing reconstruction in Honduras  
Source: Sida





◀ fig 3: Children of housing beneficiaries in Honduras

Furthermore, its geographical span expanded from 30 to 100 municipalities. Such an increase in the delivery pace of housing solutions requires that the executing organisation rapidly adapts the identification and appraisal of potential project beneficiaries to the new conditions (i.e., type of long term housing solution needed per household and the socio-economic characteristics of each specific target group).

*Financial sustainability:* The transformation of the two governmental programmes into a public foundation allowed the financial sustainability of the low-income housing programmes. FUNDEVI's assets and the volume of its loan portfolio and revolving fund also increased considerably. To make such changes possible, post-disaster demand from different donors for rapid disbursements should be reconsidered and unified. The use of post-disaster funds given for the creation of revolving funds should not force the executing agency to blur the need for sound financial analysis of the loans provided to the beneficiaries. Furthermore, executing and lending organisations, such as FUNDEVI, need to define a clear strategy of negotiations with donors that will not jeopardize this financial effort.

*Harmonized procedures:* Unified methods for project planning; procurement; budgeting; financial management; reporting and monitoring was achieved through permanent training of staff. To achieve this, donors, however, need to have a clear picture of who is the agency leading the post-disaster harmonization process in order to avoid overlapping and excessive and diverse demands on the executing organisation.

*Accountability:* The auditing process and accountability to all donors made more transparent the way different financial resources are used. In this context, it is important that the executing organisation and the donors agree on the type of procedures and norms that need to be altered and modified during the emergency and post-emergency phases.

*Comparative advantages:* The leverage capacity of the bilateral and multilateral agencies to influence policy changes increased through their

cooperation, while their strategic and operational differences have to be recognized. This leverage capacity increases with the successful creation of a process which allows donors to discuss and share a strategic vision of what changes ultimately want to be achieved within the social housing sector.

*Leadership:* Since leadership weaknesses affect programme implementation, donor agencies ensured a collective dialogue and clear working relation with the executing agency through the support of adequate governance structures. To do so, donors need to consider and assess very carefully how the leadership of the executing agency is reacting and adapting to the changed environment resulting from the disaster occurred.

The listed lessons learned suggest that "building on" disasters is possible since it can lead to a long-lasting, i.e., sustainable, improvement of the delivery of social housing.

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# After the Tsunami: Rebuilding Housing and Lives in Indonesia

Florian Steinberg

*Wiederaufbau und Reparatur von Häusern und kompletten Siedlungen in Indonesiens Provinz Aceh und auf der Insel Nias stellen eine große Herausforderung für internationale wie lokale Organisationen dar. Eine bis dahin ungekannte Solidaritätsbekundung und Bereitstellung von Hilfe haben es ermöglicht, dass mehr als 90 Nichtregierungsorganisationen, sowie zahlreiche bilaterale und multilateral Geber nach dem Tsunami Ende 2004 dort aktiv geworden sind. Unter diesen Organisationen sind auch etliche, die vorher eher auf andere Sektoren als den Wohnungssektor spezialisiert waren. Erschwerende Faktoren für Wiederaufbau und Rehabilitation waren unter anderem (a) die Inflation der Baupreise, (b) Grund- und Bodenkonflikte, (c) Schwierigkeiten der Rekonstitution von Grundbesitz, (d) die Beschaffung von Baumaterialien, (e) der Mangel an Habitat-bezogener Infrastruktur, und (f) die teilweise noch nicht vorhandenen Raumplanung der Siedlungen und Dörfer. Eine der wichtigsten Erfahrungen besagt: Es geht nicht nur um Wohnraum und Unterkunft, sondern um die Wiederherstellung von Lebensbedingungen und die Rekonstruktion von Dorfgemeinschaften und Nachbarschaften. Über das Technische hinaus sind die Erfahrungen von Aceh und Nias ein massiver Test für nachhaltigen, das heißt von den Gemeinschaften selbst kontrollierten und gesteuerten, Wiederaufbau, sowie für das Konzept des 'Community-Driven Development'.*

**1** Until August 2006, neither the Government nor the various donor and aid agencies have been able to agree on a methodology on how to classify the units which are eligible for repair assistance.

On 26 December 2004, a 9.2 Richter scale seaquake shook the Indian Ocean. This powerful seismic event generated a major undersea movement, causing tsunami waves of 20 meters, and in turn greatest damage to the coastal areas of northern Indonesia and Thailand. The event took about 220,000 lives, left 10,000s with injury and trauma, and caused major destruction along the affected areas. Severest hit was the western coast of Aceh, particularly the two coastal cities of Banda Aceh and Meulaboh, where some 120,000 and 25,000 persons died respectively. A second earthquake on 28 March 2005 devastated again the island of Nias, killing almost 1,000 people. Aceh and Nias are the focus of this paper.

fig 1: Destructions in a residential area in Banda Aceh



## Physical Impacts

Within the first six weeks after the event, a consortium of donor agencies jointly undertook a damage and loss assessment and projected investment needs (BAPPENAS and The International Donor Community, 2005). It was calculated that around 127,000 housing units needed replacement (88,000 in Aceh; 13,600 in Nias) and some 95,000 units rehabilitation (71,000 in Aceh; 24,000 in Nias) (see fig 1). Housing structures with a degree of destruction below 50% were considered eligible for repair.<sup>1</sup> It became also evident that the residential infrastructure (water, sanitation, roads, electricity, etc.), social facilities and the overall physical environment of the settlements required substantial investment. For the habitat sector alone, estimates of investment needs reached above one billion US Dollars. The overall reconstruction and rehabilitation investment was estimated to be above seven billion US Dollars.

## Emergency Phase

Estimates spoke of some 550,000 internally displaced persons who needed immediate attention. The Indonesian Army, international governments, the United Nations and numerous nongovernmental organisations (NGOs) mobilized the most complex emergency assistance in the totally devastated areas of Aceh and Nias, providing food, water and sanitation, emergency shelter, medical services, etc. to respond to the dire needs and to contain diseases.

The expectation may have been that this emergency phase would be over within three to six months, moving on to the next stage, i.e. the rehabilitation of major facilities and livelihood conditions. However, it turned out impossible to reach such a transition so early, as the majority of disaster victims were dependent on continued basic survival aid and temporary accommodation (see *fig 2*).

## Community-Based Reconstruction

Since its establishment in May 2005, the task to start “building back” was in the hands of the Aceh and Nias Rehabilitation and Reconstruction Agency (BRR). At the core of the reconstruction strategy was the paradigm that the victims should be the primary stakeholders. Furthermore, housing was seen as central to the reconstruction of communities, which certainly needed to be integrated with other sectors, particularly economic livelihood and social recovery. A consortium of donors<sup>2</sup> agreed that:

1. Basic yet technically sound settlement development plans must be prepared with the active involvement of the affected communities before housing construction at any scale begins.
2. Intended beneficiaries must be engaged in the planning, implementation, and evaluation of housing and settlement development projects.
3. In the selection of building materials and construction techniques and the provision of infrastructure and services, environmental and socio-economic sustainability criteria as well as natural hazards must be explicitly considered.
4. Existing functioning structures and institutions must be used and strengthened. The creation of new institutions or delivery mechanisms must be avoided wherever possible.
5. In the very constrained working environment, donor identity is subordinate to finding and supporting the most effective ways of assisting the tsunami survivors.

Reconstitution of tenure and legal status of land assumed a critical role in these endeavours: at an early stage, attention focused on the production of improvised village maps showing pre-disaster land use (initially done through self-help of survived villagers as one of the first initiatives towards their vision of new communities), and later on the reconstitution of land title certificates at the National Land Agency (BPN), where most of the records had been damaged or destroyed.

Already in January 2005, the central government pronounced the overall policy directive that all affected households would receive assistance, and that all eligible households would obtain a basic 36m<sup>2</sup> house or adequate assistance for repairing their damaged housing units. Later, the policy also included assistance for former renters. However,



▲  
fig 2: Temporary tent accommodation in Banda Aceh

no clear information was provided whether there would be any specific support projects. Several donor agencies, as well as domestic and internationally operating contractors urged the adoption of prefabricated housing solutions, with the aim to overcome capacity shortfalls in the national and Acehnese construction industry and to avoid dependence on domestic uncertified timber resources, which were assumed to be products of illegal logging. In 2005, the Government and most donors did not support the prefabrication approach any more, mostly due to considerations related to the community-based reconstruction approach, because it was intended to extend maximum economic opportunities to the local construction sector, providing also employment opportunities for tsunami victims. However, since early 2006, BRR had been changing its views on prefabrication due to the often fairly poor quality of conventional housing construction.

The debate about the need for temporary housing versus early construction of permanent housing was seemingly won by those agencies which were willing to spend money on often relatively costly temporary accommodation in barracks and individual semi-permanent housing (see *Figures 3-6*). Much debate had been centred on the question whether these temporary or semi-permanent structures, many of them not on the original land of the tsunami victims, are a necessity or rather a wasteful use of resources. The need to get people out of tents, which were rapidly decaying in the scorching tropical sun and rains, underscored the validity of the approach to provide (semi-)permanent housing. In parallel, an estimated 300,000 internally displaced persons (IDPs) were forced to move into rental accommodations.

**2**  
Asian Development Bank (ADB), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), German Development Bank (KfW), United Nations Development Programme (UNDP), United Nations Human Settlement Programme (UN-HABITAT), World Bank, and World Vision: Open invitation to commit to five principles of Sustainable Development in Externally Supported Housing Projects in the Rehabilitation and Reconstruction of Earthquake and Tsunami-Affected Areas in Aceh and North Sumatra, April 2005.



fig 3: Semi-permanent housing by IOM

fig 4: Semi-permanent housing by Red Cross, with absent walls due to late arrival of certified wood from overseas

fig 5: ADB-financed housing units, Gampong Pande, Banda Aceh

fig 6: House in Lamdingin, Banda Aceh built by Muslim Aid

While first guidelines on participatory village mapping were available by mid-2005 (BRR, 2005), it took BRR until 2006 to issue its regulations for house rehabilitation, new house construction, and resettlement assistance in new locations.<sup>3</sup> However, these regulations leave many critical issues open, for which compromise and innovative approaches are yet to be found, such as: the provision of land for land-less former renters; the acquisition of land for resettlement of communities from uninhabitable coastal areas; and the exact procedures for determining assistance for repair works.

### Actors in the Reconstruction Process

Initially, the emergency phase was in the hand of the central government and the army of Indonesia, with some support of the military of the United States of America, Singapore and Australian. NGOs, and bilateral and multilateral agencies also reacted rapidly (e.g. Oxfam, Red Cross, USAID, AusAid, UN High Commission of Refugees). Due to the fact that both the provincial and local governments of Aceh had suffered substantial losses among their human resources (with thousands of local officers dead) and operational facilities, their position was severely weakened. Disabled to lead the rehabilitation and reconstruction process, they were heavily dependent on outside assistance. Not surprisingly, international and national NGOs became the real drivers of emergency aid, rehabilitation, and reconstruction. At

its peak in 2005, more than 200 aid agencies, mostly NGOs, were operating. Multi-lateral agencies, such as the Asian Development Bank (ADB) and the World Bank, via the Multi-Donor Fund (MDF), became operational by May 2005. Initial disagreements among the central government line ministries and the National Development Planning Agency BAPPENAS led in May 2005 to the establishment of BRR as the implementation oversight agency. By the end of 2005, BRR was empowered by a cabinet decision to become a kind of "super ministry", completely taking over all rehabilitation and reconstruction activities from all the line ministries which had been active in Aceh and Nias.<sup>4</sup> However, the complexities of the tasks and the dynamics of the situation, with some 120 NGOs contributing to housing construction in the field, and the increasingly overlapping operations of dozens of external agencies, could not be overseen easily. The overload of responsibilities held by BRR aggravated the lack of coordination and confusion among the bilateral and multi-lateral agencies and NGOs. BRR was practically giving a free hand to all NGOs. Their intention to profile themselves eventually led to a turf war among the donor agencies in the field, hindering reconstruction and community participation.

Many of the NGOs have expanded their initial commitment and expertise from emergency aid to reconstruction, since they received an unprecedented flow of grant funds from the public or their governments back home. In fact, many NGOs and agencies such

**3** Regulations 18 to 20 of BRR, 2006.

**4** This has stipulated a substantial expansion of BRR which has grown to a team of more than 500 permanent staff, and many additional consultants on short-term or part-time basis.

as The Red Cross, Oxfam, Care, German Agro Aid, Muslim Aid, etc. have engaged themselves in settlement reconstruction. While some of these NGOs have proven their adaptability to these tasks, many failed to come up with quality housing, in terms of good and permanent construction materials, earthquake-resistance, complementary services of water, sanitation, roads, etc. This has reached such a degree of failure that some housing units are not accepted by the communities, and have remained empty. In other cases, the stop of funds led to the abandonment of half-completed housing (as in the case of CARE), or the need to destroy poorly constructed units (e.g. Save the Children had to destroy more than 300 units).

The two multilateral development banks, ADB and World Bank, had different problems at the start of their engagement: Both were initially compelled to operate "on-budget", e.g. through the Government's standard operating procedures. This means that their projects required a government counterpart budget, government-led project implementation units, and public sector procurement procedures for contracting civil works, goods and services. Substantial delays due to months spent on procurement related procedures were the outcome. However, for the housing component of its Earthquake and Tsunami Emergency Support Project, an alternative route to contractor built housing projects has been adopted over time: On the one hand, an "off-budget" modality has been implemented through experienced sectoral agencies and NGOs (e.g. UN-Habitat, Muslim Aid, German Agro Aid, CordAid, Help), which are acting as contractors on behalf of ADB and BRR. On the other hand, the World Bank has up-scaled two of its already existing community-based programs to provide housing assistance through cash-transfers to groups of individual beneficiary households, which are organized to receive these transfers, contract the labour, purchase construction materials, and supervise the civil works.

### Accomplishments so far

United Nations Humanitarian Information Centre (UN HIC) has reported donor pledges for up to 139,000 new housing units (including housing for former renters), with only a few organisations, such as ADB, also being committed to the rehabilitation of damaged units. The progress by mid-2006 shows some 40,000 units as completed, and another 40,000 in progress (see *Tab 1*). It is more difficult to assess the current or expected state of basic services across all settlements.<sup>5</sup> The projected *figures of Table 1* indicate that there is sufficient commitment for new housing units, but insufficient support for housing rehabilitation, which may be due to the vague policy for this sub sector. If developments would be as desired by BRR, all construction should be completed by the end of 2006. But various factors make this ambitious target impossible.

Agencies	2005			2006**		2007		2008	
	temp*	New	rehab	New	rehab	new	rehab	New	rehab
United Nations:									
UNHCR	30,000	0	0	1,246	0	0	0	0	0
UN Habitat	0	219	0	3,223	0				
NGOs	30,000	10,040	0	38,160	496	25,597	0	0	0
Multilateral Banks:									
ADB	0	0	0	4,000	500	2,500	2,000	1,000	0
World Bank/ MDF	0	0	0	1,853	1,116	3,000	1,000	0	0
Bi-laterals:									
KfW	0	0	0	3,838	0	2,000	0	1,000	0
others	0	n.a.	0	n.a.	0	n.a.	0	0	0
BRR	0	4,413	0	21,500	n.a.	10,000	0	0	0
Others (army; etc.)	1,000	25	0	0	0	0	0	0	0
<b>Subtotals</b>	<b>61,000</b>	<b>14,697</b>	<b>0</b>	<b>73,320</b>	<b>2,112</b>	<b>43,097</b>	<b>3,000</b>	<b>2,000</b>	<b>0</b>

\* including tents and barracks; \*\* combination of accomplishments and planned units; n.a. = not available; temp: temporary accommodation; new: new housing units; rehab: rehabilitated housing units; ADB: Asian Development Bank; BRR: Aceh-Nias Rehabilitation and Reconstruction Agency; MDF: Multi-Donor Fund; KfW: German Development Bank; UNCHR: United Nations High Commission for Refugees. Source: author estimates, taking into account data provided by BRR's RAN database (update of 23 August 2006).

▲  
tab 1: Physical Accomplishments and Planned Housing Units in Aceh and Nias

### Difficulties with Community-Based Reconstruction

One of the most distinguishing features of reconstruction in Aceh and Nias has been the way in which communities have come together to determine their needs and priorities, and to decide on leadership aspects. This has not been easy, as the tsunami had destroyed not only people's homes and infrastructure, but also community structures, killing countless religious and community leaders, social workers, teachers and civil society representatives. Furthermore, after the disasters, many communities were separated into tented camps, host communities, and barracks, reducing communities' capacity to come together and start the rebuilding process. Nevertheless, Aceh has a rich tradition of associations, ranging from faith-related activities and community-based organisations (e.g. savings clubs, village development associations and funeral societies) to semi-local government structures, which are based on elected neighbourhood and community representatives. Hence, relief agencies could quickly find community leaders and structures to work with. Where leaders had been killed, new informal ones swiftly emerged. While many government units were in disarray, community leaders helped with information gathering and provision, re-uniting separated families, and spreading information about available help.

However, effective community participation takes time and necessitates continuous facilitation. Many of the agencies and NGOs which attempted to guide this process had spread their activities over a wide territory and could not devote sufficient effort to continuously nurturing community groups. In addition, people were too preoccupied with traumata, and human and economical losses. Hence, lengthy community planning meetings and decisions for public goods and community affairs had second priority.

**5**  
With a weak database management (at BRR and UN-HABITAT), no agency can exactly tell how many units are completed, inhabited, or ready for completion by certain target dates. This situation has been accepted to be the result of the current state of organisational shortcomings.



fig 7: Community Consultation in Blang Krueng, Aceh Besar

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The views expressed in this article do not necessarily represent the opinion of the ADB.

While some donors kept on insisting on a full range of community consultations as under “non-emergency” circumstances, some communities started to show a lack of interest. Furthermore, they started to reject the idea of providing cheap or cost-free labour for community projects. There have been cases of communities which have demanded an end to time-consuming consultations and instead asked for an immediate provision of a house (see *fig 7*).

The conditions in Aceh and Nias were and are far from ideal for the implementation of community-based processes. By overstressing the paradigm of participation, more damage than good could be done. Nevertheless, some projects, such as World Bank’s MDF reconstruction program, went even a step further and placed major implementation responsibilities for construction of homes into the hands of beneficiaries. Through so-called community contracting mechanisms, beneficiaries acquire labour and construction materials and directly supervise the construction activities. The initial response has shown fast construction progress, but lack of supervision and technical support has produced quality flaws, cost increases and construction material shortages.

As is reported frequently in the local press, many donor promises have not materialized or have been delayed. Hence, in some communities “(...) hope gives way to outrage as agencies fail to deliver aid” (International Herald Tribune, 27 July 2006). Such experiences of frustration will certainly not provide a good ground for empowerment of communities. The occasional cases of corruption by local officials and price manipulations by contractors add to a more sober perception of realities.

## Conclusions: “Building Back” Better

To what extent should community-based development be applied to all circumstances and to all types of projects? Experiences in Aceh and Nias indicate that community-based work can in some communities achieve extraordinary outcomes, while it resulted in others in overloaded and overburdened people with too many responsibilities. Hence, community participation cannot be instrumentalised as if being a panacea for all shortcomings of actions by governments or contractors. It can play an indispensable part to accomplish this complex and highly challenging task of “building back” better. However, as long as survival, livelihood and wellbeing are at stake, its scope has to be evaluated carefully.

When political pressures for accelerated rehabilitation and reconstruction are mounting, compromises are taken on essential components of the planned agenda in favour of faster delivery of assistance. Nevertheless, even under such circumstances, community-based approaches, environmental safeguards, aspects of land tenure and indigenous architectural and cultural traditions have to be considered.

In Aceh, it was hoped that the reconstruction and rehabilitation of the human settlements would be finished by December 2006, with at least 78,000 new houses completed. As it turns out, neither the housing units nor the residential infrastructure will be completed by that date. Whether we can talk of “mission accomplished” by 2008 will depend on the reconstitution of all, not only physical, aspects fundamental to the existence of “real communities”, being the economic and social basis of life.

# The Engineering and Social Complexity of Providing Post-Disaster Housing

Regan T. Potangaroa

*Die einfach erscheinenden Entwurfslösungen für dauerhafte Unterkünfte als Bestandteil von „Hilfspaketen“ verleugnen oft die technische und soziale Komplexität ihrer Ausarbeitung. Die Unfähigkeit von Ingenieuren, Architekten und Hilfsorganisationen, solche Komplexität zu verstehen und zu vermitteln, behindert die erfolgreiche Umsetzung dieser Art von Projekten. Der Artikel erläutert in diesem Zusammenhang zwei relevante Aspekte, auf die man beide bei der Entwicklung eines Wiederaufbauprogramms für dauerhafte Wohnlösungen stieß, das 2005 vom UNHCR für Tsunami-Betroffene an der Westküste von Aceh in Nord-Sumatra, Indonesien durchgeführt wurde: (a) die Wahl der Bauweise und -materialien für tragende Wände, sowie (b) Tsunami-Sicherheit.*

*Der Autor stellt dar, dass die Wahl der Bauweise, sowohl in qualitativer als auch in quantitativ Hinsicht, generell nicht in angemessener Weise berücksichtigt wird. Der Artikel zeigt den in technischer und sozialer Hinsicht komplizierten Entwurfsprozess, der letztlich zu der von UNHCR übernommenen Strategie führte. Darüber hinaus beleuchtet der Beitrag Entwurfs- und Planungsverfahren mit dem die Tsunami-Sicherheit der Projekthäuser sichergestellt wurde. Dabei mussten praktische Aspekte gegeneinander abgewogen werden, wie zum Beispiel die Schaffung sicherer Wohnlösungen und der Wunsch vieler Begünstigter, auf ihre vom Tsunami verwüsteten Grundstücke zurückzukehren. Diese Widersprüche zwischen technisch bedingten und sozialen Gesichtspunkten sind unvermeidlich.*

## Introduction

The damage caused by the Asian Tsunami on December 26, 2004 was staggering. Aceh Province of Indonesia (and in particular the West Coast of Aceh from Banda Aceh to Meulaboh) borne the brunt of the tsunami with over 173,000 victims. The total death toll of all affected countries was 221,000. Aid poured into Aceh and several agencies made the decision to commence the design and planning of permanent shelter programmes already during the emergency phase (0 to 6 months after the disaster), with the intention to implement them during the recovery phase (6 to 24 months after the disaster), instead of waiting till the reconstruction phase (2 to 15 years after the disaster).

A survey of existing (governmental) low-cost housing was initially completed. The intention was to ensure that the new and reconstructed houses will be comparable in size and scale to the existing low cost houses, since the provision of "better" housing to tsunami victims could generate long term jealousies within the community. Over 30 housing complexes were reviewed. Typical houses in Aceh were identified to have four main "zones" with the following average dimensions and floor space:

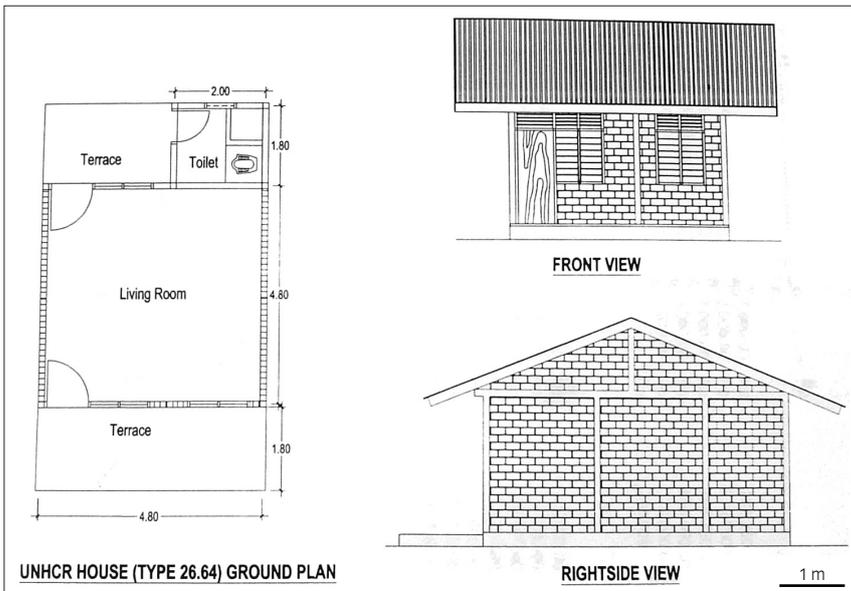
- Porch area: 4.00m<sup>2</sup> with average dimensions of 2.60x1.40 metres.
- Living area: 14.30m<sup>2</sup> with average dimensions of 4.70x3.00 metres.
- Kitchen: 10.10m<sup>2</sup> with average dimensions of 3.80x2.50 metres
- Toilet and bathroom: 4.31m<sup>2</sup> with average dimensions of 2.30x1.80 metres.

On the basis of the survey a standard core house design was developed (see *fig 1*).

## Selection of Cladding Materials

An agreement on permanent shelter design was reached between the UN Agencies and the non-governmental organisations (NGOs) involved in the recovery of Aceh. This agreement was intended to eliminate, or at least minimise, any significant differences between housing provided by the various aid programmes. The agreement included the following:

- Houses should have a concrete floor.
- Houses should have a corrugated iron roof.
- House cladding material can be decided by each aid agency.



▲  
fig 1a+b: The UNHCR Core House

At the time, it was felt that the specification of the cladding would result in a monotone housing landscape. Moreover, each agency appeared to have a different housing strategy, which was also reflected in the cladding selection.

The cladding of existing houses in Aceh is typically one of the following (see fig 2):

- Timber boarding.
- Concrete block walls within a reinforced concrete frame.
- Brick walls within a concrete frame.

Other options such as styrene foam boards, rice boards, bamboo or rammed earth were not considered within the framework of housing assistance, as it was felt that the use of new materials could be easily rejected by beneficiaries, even if they have structural advantages. In addition, further complication was expected by introducing a new material, adding to the already existing complexities. Consequently, only the three listed options (i.e., timber boarding, concrete block and brick walls) were reviewed for UNHCR's house design. This seemingly straight forward task is summarized in Table 1.

▼  
fig 2: Typical Cladding Types: Timber, concrete block and brick with a concrete frame

Table 1 shows an initial preference for timber due to its cheaper cost compared to concrete block and brick (by 3 and 7 million rupiah respectively). This preference is supported by the logistic requirements of concrete block being 4 times heavier and brick 6 times heavier than timber (with the potential of timber also being available on site). Furthermore, higher building skill requirements are needed for both concrete block and brick.

Timber had an early lead. However, this advantage was reduced by its perceived lower quality, its lower service life, and issues related to the specification of timber cladding (UNHCR, 2001) (see Tab 1). Capacity building was considered as being neutral since there was the potential to provide training in concrete and joinery for all 3 options, including concrete block or brick laying respectively. But seismic requirements again favoured a lighter timber option as did the time needed for construction. In fact, twice as many timber houses can be built compared to either block or brick houses. However, sustainability issues and tsunami debris counted against a timber option. It should be noted that timber swept up by a tsunami as debris not only doubles the load and impact of the tsunami wave on buildings but also produces lethal projectiles for people being picked up by the tsunami.



Issue	Timber	Concrete Block	Brick with a Concrete Frame
Cost <sup>1</sup>	19,000,000 Rph	22,000,000 Rph	26,000,000 Rph
Cement usage <sup>2</sup>	25 bags each 40 kg	100 bags each 40 kg (not including cement in concrete blocks)	150 bags each 40 kg
Needed building expertise	Low	High	Higher
Quality perception <sup>3,4</sup>	Lower quality material	Higher quality material. (94% of buildings have "solid" walls)	Higher quality material. (94% of buildings have "solid" walls)
Material service life	2-5 years	30+ years	30+ years
Specification issues	Highest (Previous experience suggests issues of grading, and durability (UNHCR, 2001))	Medium (Skilled trades people required for concrete and block laying)	Medium (Skilled trades people required for concrete and brick laying)
Capacity building	Good potential	Better potential	Better potential
Earthquake-proof design	Light seismic loads and better seismic performance	Heavy seismic loads and the need for specific seismic design and detailing to achieve acceptable seismic performance	Heavy seismic loads and the need for specific seismic design and detailing to achieve acceptable seismic performance
Construction time	1-2 weeks	4 weeks	4 weeks
Sustainability	Problems are deforestation and potential erosion	Larger embodied energy than timber. Dependent on source of cement, sand and aggregate to be confirmed	Larger embodied energy than timber. Dependent on source of clay, timber for firing the clay, cement, sand and aggregate to be confirmed
Thermal properties	Fast to heat and cool	Slow to heat but also slow to cool	Slow to heat but also slow to cool
Material resources at site	Timber is anticipated as being available in Lhoong and Lamno areas. Confirmed availability in Calang/Krueng Sabe. Is not expected to be readily available further South in Teunom	Sand, aggregates and stone are available in Calang/Krueng Sabe and are anticipated to be available in Lhoong and Lamno. Is not expected to be readily available further South in Teunom	Suitable clay materials for bricks could be expected between Lhoong and Calang/Krueng Sabe. Is not expected to be readily available further South in Teunom
Tsunami debris generation	High	Low	Low

tab 1: Competing issues for different house cladding options

In sum, *Table 1* illustrates the complexity of selecting the cladding between three seeming straight forward options. Some of the criteria listed are quantitative (such as "Cost") while others are of a qualitative nature (such as "Quality perception"). The comparison suggests that timber should be used. However, when the different criteria were prioritised in a second step, valorising perceived quality and durability of the materials as the most important selection criteria, concrete block was eventually selected as the cladding material.

## Tsunami Proofing

In a similar vein, the tsunami proofing of the houses was also complex; a complexity not evident in the final house design. The first suggestion made by the Central Government was to build houses outside a "green zone" of three kilometres from the shore line. This was decisively rejected by the local authorities in Aceh. Moreover, people had already started moving back to their original house sites and were erecting temporary shelters. Thus, aid agencies were faced with the dilemma of assisting victims to rebuild in areas that were clearly at risks. This dilemma is illustrated in *Figure 3*, a flow chart developed by C. Williams at UNHCR, Jakarta.

In tsunami risk areas, aid agencies have the responsibility to ensure protection. This can be achieved through:

- An escape corridor to a natural refuge such as a hill.

- An escape corridor and a constructed refuge such as a mould or tower.
- The erection of walls or barriers.
- Moving people away from the tsunami risk area (assuming land was available).

Though there was a 15-20 minutes time lapse after the earthquake and before the tsunami came at shore, 10 minutes of that time were taken up by severe ground shaking. Consequently, the evacuation time was as little as 10 minutes. Based on this, it was estimated that any refuge would have to be no further than 250 meters away from houses. Unfortunately for most (if not all of the affected West Coast area), this meant that there were minimal natural refuges such as hills, and thus refuges needed to be constructed. Moulds (as with walls) were quickly deleted from any further considerations. Expert advice had established that the Asian Tsunami was not rare and had a return period of once every 100 years (Wilkinson, 2005). A mould would have to be 10+ meters in height to match the tsunami wave but would also need to have a further 15 meters elevation to protect against the run-up of such a wave. So the mould would need to be 25 meters in height (approximately a six storey building) before it provided any adequate protection. Cost and space simply made such an option unrealistic. Steel framed towers were also considered. They would have required a 500 meters spacing within village areas and would have had to be designed (for the full tsunami loads) in the order of 50-100 times the required seismic code loads. Housing budgets would have been taken up quickly by such constructions.

- 1** Based on Bandar Aceh prices (March 2005) with no ceiling or painting and no plastering of the concrete block and brick options. Exchange rate at the time was 9,500 rupiah = \$1 US.
- 2** This does not include the cement required for the concrete block production.
- 3** 94% of buildings in the Aceh had solid walls (either brick or block) Govt. Census figures 2000
- 4** Perception of quality based on feed back from beneficiaries and national staff.

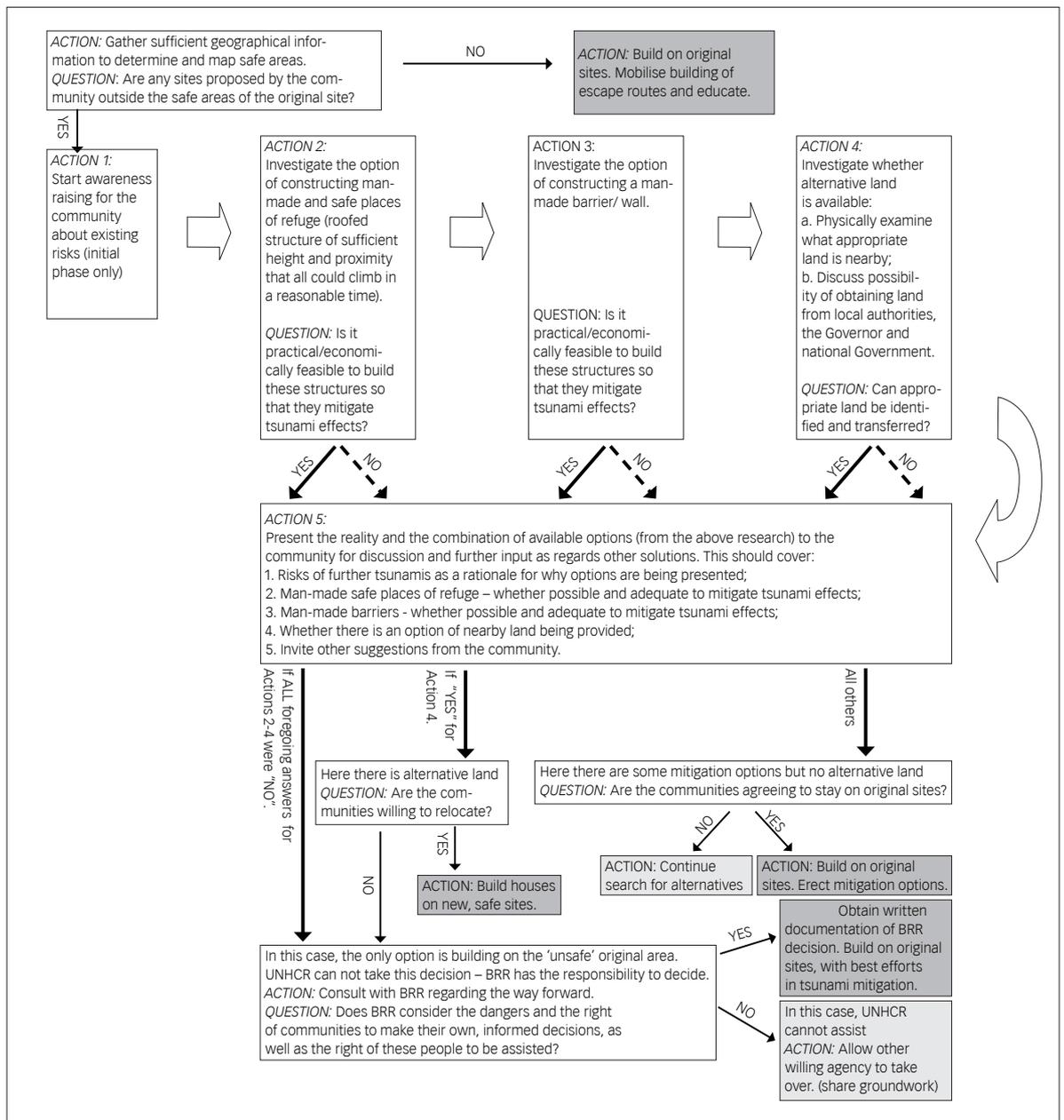


fig 3: Flow chart for tsunami proofing

The flow chart was developed by C. Williams of UNHCR, Jakarta. BRR stands for Badan Rekonstruksi dan Rehabilitasi which is the Indonesian Government Department specially formed to control the reconstruction and rehabilitation work associated with the tsunami of December 26 2004.

Discussions with the Indonesian Government officials generally confirmed that there was no other alternative land along Aceh's West Coast that could be used as part of a re-settlement programme. The question for aid agencies was if they should, or should not, assist the building of houses on tsunami risk sites. It was clear that adequate mitigation against the tsunami, despite the good intentions, was not feasible. Moreover, building on such at risk sites required the permission by the Indonesian Government (or their elected officials which was the BRR office).

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And what about a tsunami early warning system? Certainly, such a system could maximize the time available for evacuation. However, the improvement would be of the order of minutes and not of hours, and hence would not considerably improve people's escape options. Thus, the conclusion along Aceh's West Coast (but also for much of the tsunami struck areas in Aceh) was that tsunami proofing could only be minimal, despite

the desire by aid agencies. People returning to their homes faced the same risk as before.

### Conclusion

The described shelter programme, which was implemented after the Asian Tsunami in 2004, has been described in newspapers as constructing thousands of garages. While such statements are correct, such a comparison belies the complexity of the design context of such programmes. In addition, it is often assumed that risk can be mitigated, while the experience in Aceh shows that this is not always possible.

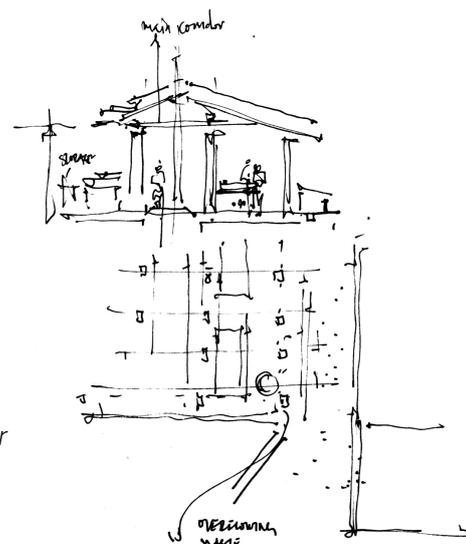
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# Reformulating Grounds for Small-Scale Fisheries

Io Karydi

*Dieser Beitrag beleuchtet die Konzepte zur Wiederherstellung und Erneuerung der Küstenstadt Hambantota im Süden Sri Lankas, die vom Tsunami im Dezember 2004 völlig zerstört worden war. Die vorrangige Zielsetzung besteht in der Schaffung eines vielfältigen, abwechslungsreichen Landschaftsraums, der sich vorteilhaft auf die lokale Wirtschaft auswirken soll, indem er die Fischerei wieder ermöglicht. Das hauptsächliche Entwicklungspotential wird im Zusammenspiel der drei örtlichen und miteinander verknüpften einkommenschaffenden Wirtschaftsbereiche Aquakultur, Handel mit Waren und Dienstleistungen, und Küstenfischerei gesehen. Dieser dreigleisige Strategieplan soll in nachhaltiger und anpassungsfähiger Weise ein Gleichgewicht zwischen Umweltschutz und Wirtschaftswachstum ermöglichen.*



## Introduction

The 2005-2006 Graduate Course on Landscape Urbanism at the London Architectural Association School was dedicated to reconstruction and resettlement needs in the Eastern coastal zone of Sri Lanka, which was hit by the devastating tsunami waves in December 2004. The design studio's brief stated that "coastal areas require careful determination of potential hazard zones to avoid future loss of life and property. At the same time, the new sociopolitical configurations generated as an immediate consequence of the local death toll call for a reinterpretation of the traditional patterns of spatial inhabitation, both at the macro and micro scale."<sup>1</sup> Based on this point of departure, the paper will highlight the key characteristics of a sustainable regeneration and recovery planning project that the author has elaborated as part of the course.

## Point of Departure

Any visitor in Sri Lanka will be attracted by the diverse fishing activities and the local markets scattered over the island's littoral zone. Small scale fisheries are among the most distinctive features of the region. They appear like peaceful "breaking points" in between other stretches of a rather dynamic environment on the highly congested coastline where processing and trading activities emerge in close association to fishery landing sites. Fishing counts among the most important economic activities of the region. It is an important provider of employment and contributes nearly 2.7% to the national Gross National Product.

This apparently optimistic picture sadly contrasts with the degree of the catastrophe caused by the tsunami waves that hit the coast on the 26th December 2004. At least 38,195 people died along the country's South, East and Northern shore and more than 6,000 were reported missing. Nearly 80% of the 30,000 fishing vessels were completely destroyed, while fishing ports were equally devastated including the loss of essential infrastructure such as ice plants, cold rooms, workshops, slipways and marine structures.

Soon after the flood, the government formulated action plans, and considerable funds were raised with the help of UN agencies, and local or international NGO's that provided some immediate relief (relocation camps, sanitation and water services). However, the new designated coastal protection zone and the residential rehabilitation plans which have been proposed by the local urban development authority, require dislocation of fishermen's communities away from the coast while paving the way for the tourist industry along the beaches at the same time. This is also the case in Hambantota Town, situated on the southern coast of the island: also here the government plans propose new urbanization schemes inland while reserving the waterfront for a mega-port plan quickly presented as a blue print model for general post-tsunami redevelopment. These schemes rather divide and fragment sustainable settlement patterns than creating them – apart from setting local values at stake.

## A Regenerative 'Alternative Scheme'

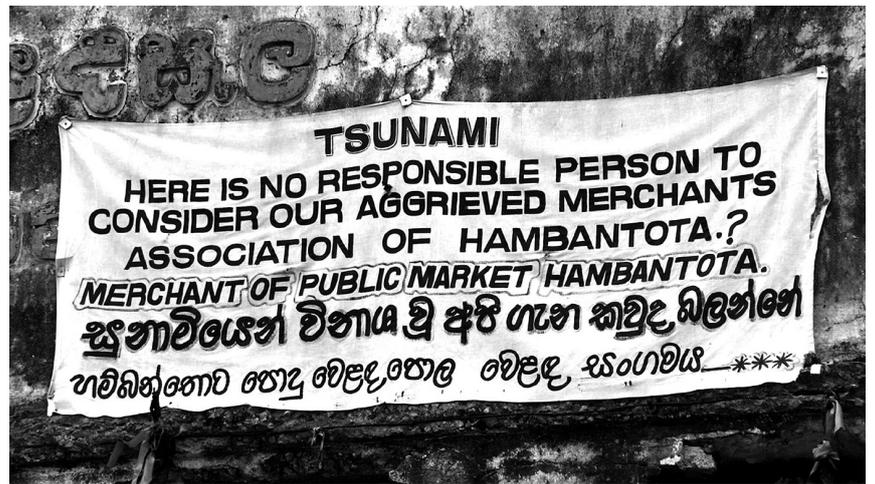
The outlined official redevelopment plans raise questions concerning the organisational feasibility

▲  
fig 1: Sketch, of a typical fish market, section + part of the plan

1  
Unit Brief, Graduate design: Landscape Urbanism, 2005-2006, [www.aaschool.ac.uk](http://www.aaschool.ac.uk)



▲  
fig 2+3: Fisch market, vic-  
tim's protest in Hambantota



**2**  
Biotic refers to all living or-  
ganisms.

**3**  
Phytoremediation is an in-  
novative technology that  
utilizes the natural prop-  
erties of plants in engineered  
systems to remediate haz-  
ardous waste.

**4**  
There is a level of toxicity  
because of the by-products  
and fish food used in aquac-  
ulture zones.

**5**  
Riparian area refers to land  
and vegetation near water  
bodies such as streams, riv-  
ers, wetlands and lakes.

**6**  
Groins are constructions  
to control or modify sand  
movement. Their purpose is  
to increase the width of the  
beach by either natural ac-  
cretion or artificial nourish-  
ment with sand.

**7**  
The berm is a low earth-  
ern wall adjacent to a ditch.  
Berms are also used to con-  
trol erosion and sedimenta-  
tion by reducing the rate of  
Surface runoff. They either  
reduce the velocity of the  
water, or direct it to areas  
that are not susceptible to  
erosion.

and recovery potential of the urban coastal fringe of Hambantota where the tsunami is not the only threat. Hambantota is a landscape characterized by flux and change — a dynamic coastal environment, evolving in cycles of erosion and Aeolian depositions where successive floods and droughts occur along with the two monsoon seasons (*maha* and *yala*). When drawing up a development plan in this setting, it should satisfy three levels of requirements: First of all, one must respect the needs, culture and aspirations of the coastal communities who, for example, do not agree with residential dislocation. Next one must take care not to irreversibly alter the natural environment and apply the means to preserve and recover the coastal ecosystems that were destroyed by the tsunami. Finally a compromise must be found between these two concerns and the needs of the tourist industry or other new development pressures. The following proposal — presented as an alternative to the government plans — demonstrates that such a compromise is possible.

The leading principles of the alternative plan for Hambantota are a landscape that diversifies and initiates growth of the local economy alongside with the biotic<sup>2</sup> component of the coastal environment. Local income opportunities are promoted through further development of existing small-scale fishing industries and other commercial activities that can develop symbiotically with the nature's dynamic patterns – especially the monsoon rains and its accompanying floods. Hence, Fisheries & Aqua Culture is expected to offer a more sustainable development perspective than a rather nonfunctional tourist development. An economy that benefits better the local population and is in balance with the coastal ecosystems will be achieved through a set of 'eco-development' corridors that support three interconnected lines of economy: aquaculture, 'goods and services' markets and coastal fisheries. These three elements can be integrated in an ecological circuit that maintains a fair balance between environmental conditioning and economic growth.

## Diagnosis of the Territory

The redevelopment scheme concerns the thin strip of land in-between two distinctive ecological niches: the Karagan lagoon and the littoral of Hambantota Bay. This coastal wetland is a highly complex ecosystem within which many key elements interplay. Regular monitoring backed by local is necessary to establish the physical carrying capacity of the system and to monitor the impact of future development. Among the critical aspects which can be demonstrated by the field. The following environmental factors seem critical in the design of a regeneration and recovery scheme for Hambantota:

- *Seasonal patterns* affect local economy. The area is prone to cycles of drought and flood occurring successively during the 2 monsoon seasons, maha and yala, and affect the income of fisheries and call for supplementary income opportunities.
- *Long shore currents* are responsible for beach erosion minimizing the possibility for beached boats and fisheries activities on the shore.
- *Run off.* Currently there is no wastewater management and sufficient cooling storage. Almost 40% of the fish is thrown away as there is no adequate infrastructure and service facilities to ensure sanitary disposal.
- Most of the area damaged by the tsunami was built up with light structures that had been classified as "temporary" and did not qualify for compensation payment. Also the main market and auctions buildings were demolished.
- The tsunami waves destructed most houses and caused the highest inland inundations where natural sand dunes had been exploited or converted into cultivated landscapes.

## Technical Aspects

After what has been said so far it is evident that the physical development pattern must take into account the very specific hydrological conditions. Any new topographic features must not interfere with the exist-  
ing 'protective' landscape characteristics — apart

from remaining within the tough constraints of time and cost. For this reason, 'linear grading' is being proposed as an economic 'cut and fill' earthwork technique in order to accommodate roads, paths, drainage canals and ponds. These swales form the infrastructure backbone of the project. They extend land inwards to allow drainage of cultivated or built-up surfaces through a pattern of ridges and valleys. The moisture kept in the valleys dries off very slowly and maintains vegetation growth, sedimentation and run-off are regulated through the form of the valley and the ponds. Domestic grey water effluents are treated in infiltration beds, organic waste is recycled to feed fish ponds, run off from sealed surfaces are treated if necessary by means of phyto-remediation<sup>3</sup> and organic waste from aquaculture zones is neutralized in retention tanks in the rare case of toxic run-offs.<sup>4</sup>

*The sub-systems:* Integrating fish and plant culture: Waste water from the fish ponds flows with a gravity system to the water gardens where it is aerated to maintain dissolved oxygen concentration before released to the Karagan lagoon. A combined system of retention basins can make use of phyto-remediation for neutralizing any toxic effluents. The method implies the breeding of specific mix of aquatic species that strengthen the riparian area<sup>5</sup> and augment biodiversity.

*Groins<sup>6</sup> and educational paths:* A series of elevated pathways and service corridors is to be provided in combination with linear berms<sup>7</sup> in order to protect sensitive grounds such as sand dunes and riparian wetlands. They provide public access, encourage educational walks to raise public awareness and allow observation while discouraging intrusion of



◀ fig 4: The present shape of sea shore

people into sensitive habitat areas. The berms can have the function to build up raised fields that convert the floodplain areas into farmland while the canals on the other side of a berm divert the flood towards natural depressions. Groins on the other side will be used for coast stabilization and widening of the beach and to slow down the strength of the waves.

*Water Purification:* Detention ponds filter strips and sand filters can be made use of to improve water

**8** Macrophytes are individual algae large enough to be seen easily with the unaided eye.

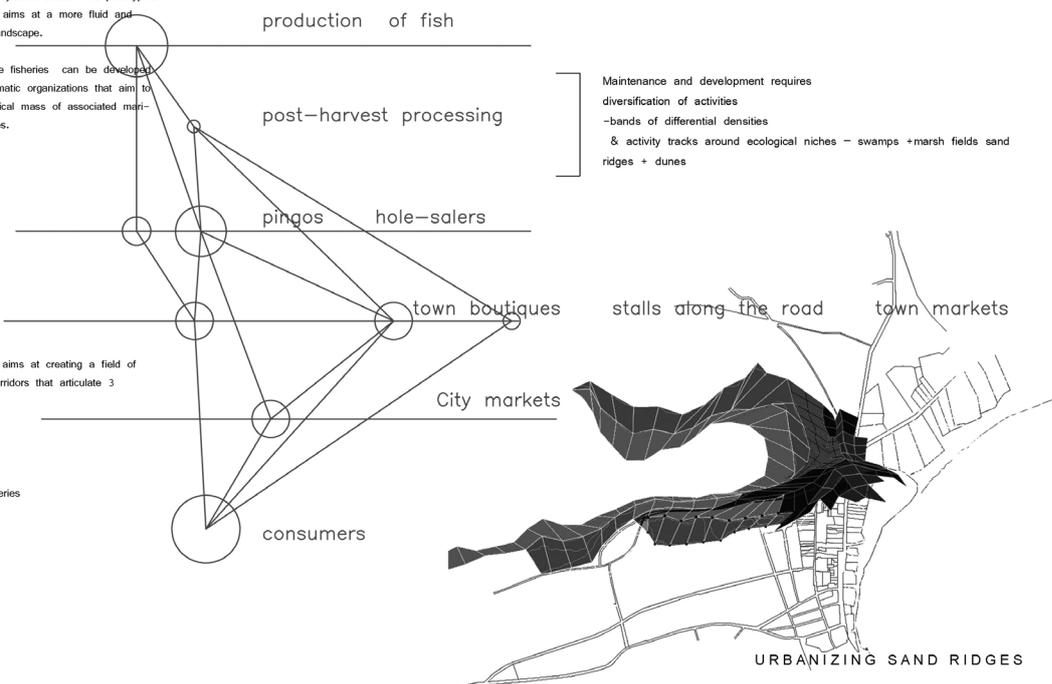
**9** Grassed filter strips (also known as vegetated filter strips, filter strips, and grassed filters) are vegetated areas that are intended to treat sheet flow from adjacent impervious areas. They function by slowing runoff velocities and filtering out sediment and other pollutants.

-The interlocking programs and networking conditions that organize fisheries communities, define a prototype for the reorganization of the dynamic coast. This prototypical organization aims at a more fluid and integrated landscape.

-Small scale fisheries can be developed as programmatic organizations that aim to reach a critical mass of associated maritime activities.

Strategy\_01:  
The project aims at creating a field of operative corridors that articulate 3 systems:

Aquaculture  
Market  
Coastal fisheries



◀ fig 5: Proposal of a three-part system that creates bands of differentiated densities

quality by removing sediment and pollutants from storm water and domestic grey water. Detention ponds are divided in three zones through which the water passes through: a pollutant trap to remove litter and sediment, a macrophyte<sup>8</sup> zone that filters suspended pollutants and the outlet zone into the final receptor (*Karagan Lagoon*). Filter strips<sup>9</sup> clean run-off water from sealed surfaces through horizontal filtering through vegetable matter while sand filters can be used as an alternative where space is limited or the water arrives concentrated in one point. The sand strains pollutant from the run-off water before entering tube or canal drainage ducts.

### Topographic Reconfiguration

Initially, the proposal suggests reconfiguring the topography to control and benefit of *hydrological processes*. Protection from inundations and erosion, retention of storm water for agriculture and aquaculture and improvement of water quality are the rationale for a landscape of figures, like a skeletal base to be accomplished with other qualities and activities such as *expansion* (controlled growth of man made of spontaneous patterns), densification (settlement processes or market activities), protection from seasonal patterns and hazards (like cyclical storms or the devastating tsunami) and erosion control and farming activities),

### Conclusion

Combining our knowledge about the local society and geographical circumstances while also considering development potentials in the benefit of the resident

population we can extract a limited number of key concerns that our objective of an ecological framework of development must imperatively take into consideration. These are, firstly, the dependence of the waterfront. The numerous small scale fisheries along the coast of Hambantota provide ample testimony for the commercial and economic value of the coastal location. The fishermen's work and culture require the proximity to the coast. It is evident that there is a need for an integrated strategy of coastal protection against natural hazards that reserves adequate space for the development for fisheries and other interrelated activities.

Secondly, rebuilding after the tsunami disaster must include at least minimal protection against tidal waves, which goes along with principles of green urbanism, which in this case implies the clustering communities of fishermen and surrounding them with some sort of protective belt. A thick vegetation layer, mainly *Casuarina* trees and shrub species can be used to stabilize the sand dunes and will simultaneously form thickets that can slow the speed of destructive tidal waves. In addition to this, several species can benefit the fisheries sector by their by-products (for example, coconut husks are used in the construction of ropes) while mangroves and salt marshes are biological filters of the water and form a habitat for breeding of fish and crustaceans in brackish lagoons.

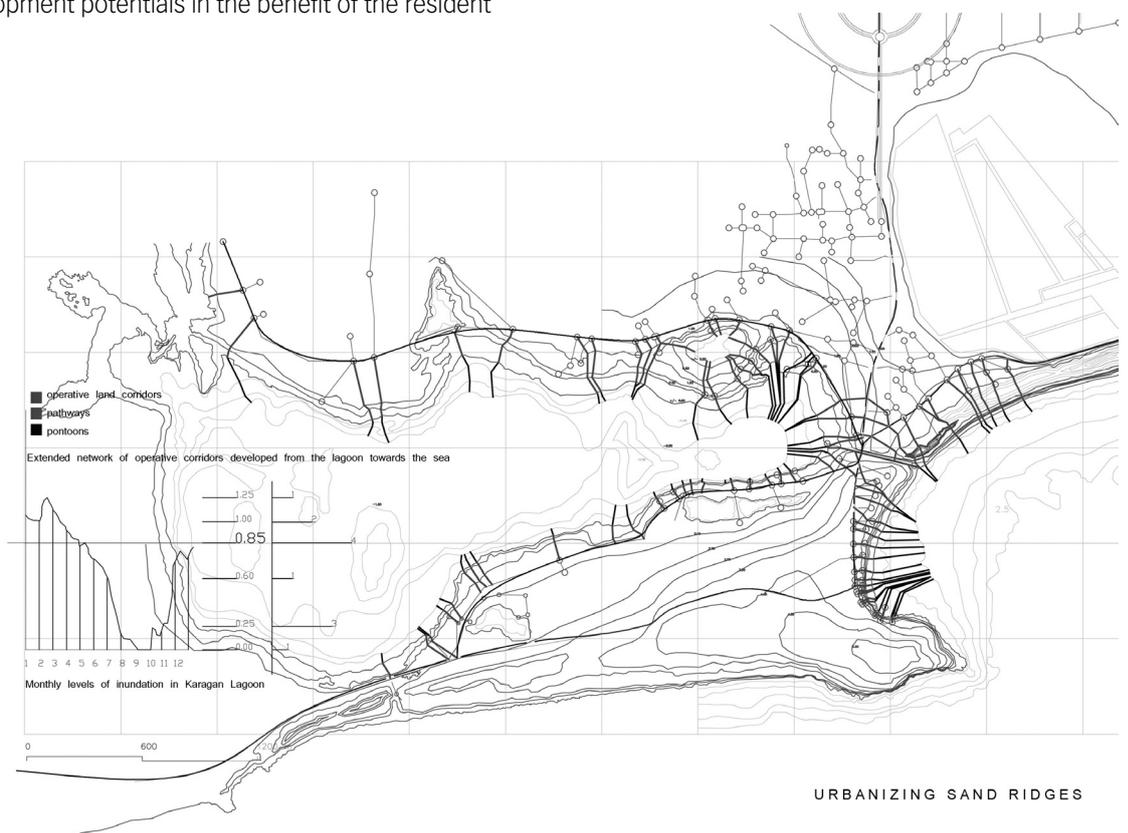
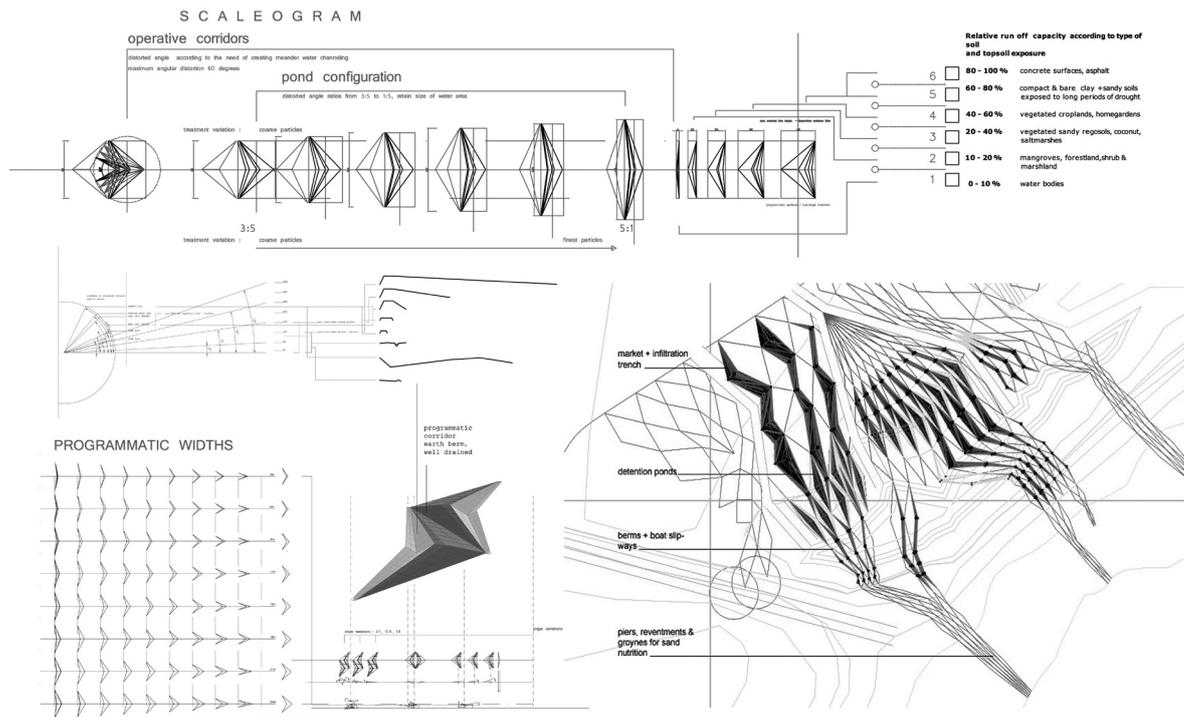
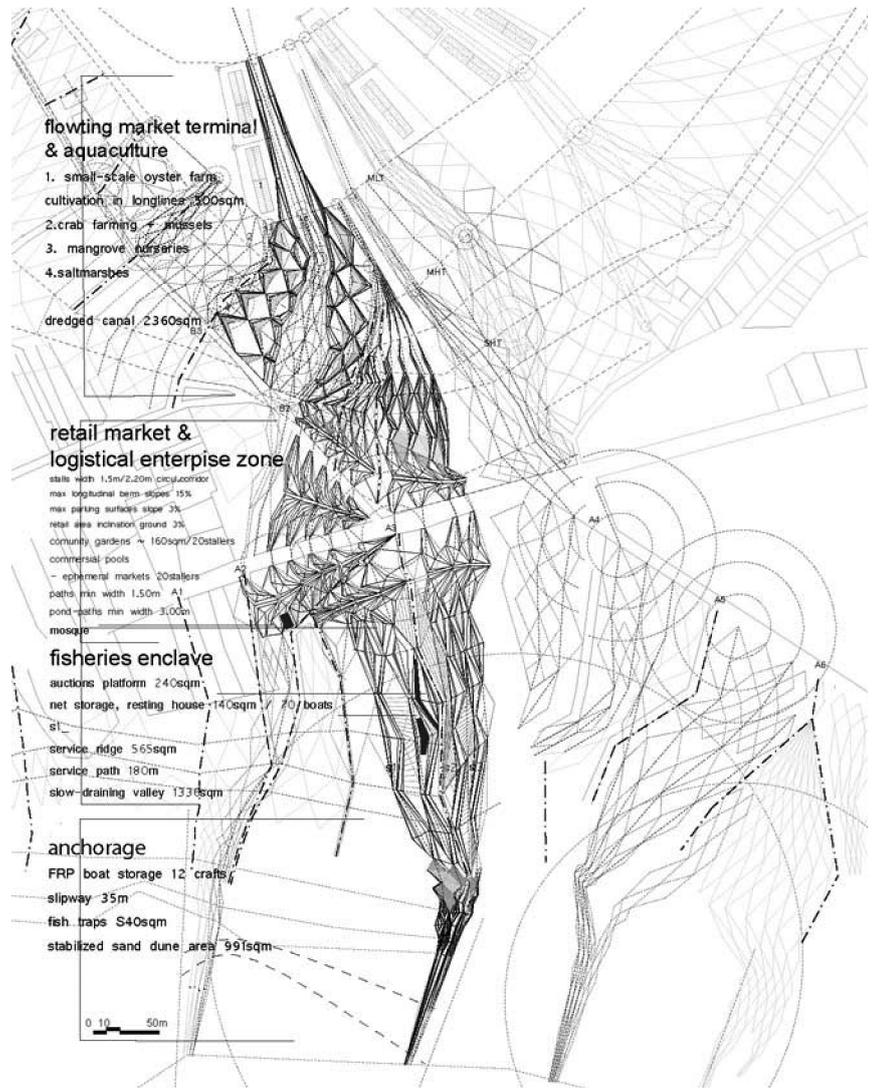


fig 6: Extended network of operative corridors

Finally, the development proposal that has been presented simultaneously allows for both: a partly self-sustaining ecological regeneration and recovery scheme visible in the amended topographical profile and a more diversified economic and settlement pattern that is sustainable in a territory that is constantly exposed to minor or major natural hazards. The operative framework of the proposal envisages *short-term provisions in support of revitalizing the existing fishermen's communities that lead into a long term and diversified economic development strategy*. This contrasts to the plan of the current local politicians that envisage, the construction of a mega-port for bunkering facilities and oil tanks that will abandon the ecological reserve of Karagan Lagoon for once and ever. However, in spite of the politician's enthusiasm and possible job opportunities as a result of the new port scheme, up to now all feasibility studies have rated the venture un-bankable. This allows for several explorations on the field of near future dynamic redevelopment systems, with proposals that form processes rather than rules.

The above project was developed during the year 2005-2006, and was submitted as part of the graduate thesis for the course of *Landscape Urbanism* in the *Architectural Association*.



▲  
fig 7: Activity zones

▲  
fig 8: Morphological investigations of a prototypical surface according to run off capacity and sediment treatment. Also, slope stability assessment according to land use, 3-d prototype and site implementations of linear grading (cut and fill).

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# Resource Mobilization for Reconstruction and Development Projects: Case of Kenya

Sibilike Khamala Makhanu

*Kenia erlangte seine Unabhängigkeit 1963. Ähnlich wie in anderen Entwicklungsländern, die ebenfalls in den frühen 60er Jahren unabhängig wurden, finanzierten in den Folgejahren internationale Geberorganisationen zahlreiche Entwicklungsprojekte, teilweise durch langfristige Kredite. Gegen Ende des Jahrtausends verringerte sich der internationale Geldstrom beträchtlich, während gleichzeitig Rückzahlungen fällig wurden. Außerdem waren an etlichen Projekten der früheren Jahre, welche durch eine Reihe von Katastrophen beschädigt oder zerstört worden waren, Investitionen für Reparatur- und Instandsetzungsarbeiten erforderlich. Angesichts dieses Dilemmas entwickelten verschiedene Bevölkerungsgruppen traditionelle und auf gegenseitiger Hilfe beruhende Finanzierungsmodelle, sowohl für Maßnahmen der Entwicklungshilfe als auch des Wiederaufbaus.*

*Die Studie untersucht verschiedene Finanzierungsmodelle zur Mobilisierung von Ressourcen für Entwicklungs- und Wiederaufbauprojekte in Kenia, sowie deren Fehler und Erfolgspotentiale. Das Ergebnis der Studie zeigt positive Auswirkungen der traditionellen Finanzierungsmodelle auf das Sozialgefüge, welche das Unabhängigkeitsgefühl und den Zusammenhalt der Gemeinschaften stärkten. Dem zu Folge können nur dann nachhaltige Entwicklungs- und Wiederaufbaumaßnahmen umgesetzt werden, wenn Regierungen und Gemeindeverwaltungen traditionelle und partizipativen Finanzierungsmodelle fördern. Die Regierungen müssen hierfür jedoch das erforderliche Fachwissen und die institutionellen Rahmenbedingungen, einschließlich der Gesetzesgrundlagen zur Steuerung der sich entwickelten Finanzierungsmodelle, bereitstellen.*

## Introduction

Kenya got independence in 1963, becoming a Republic a year later. In the first decade of independence, there was a flurry of development activities, donor support and short and long term loans. This continued through the next few decades. Towards the end of the 20th Century, Kenya went through a number of natural and human-made disasters, including the oil crunch of the 1970's, the drought and famine of the early 1980's, the Nairobi bombing in 1998, and the "El Niño" rains of 1997/98, followed by the "La Niña" period.

Along the way, donor funding was on the decline, while debt servicing was increasing in magnitude, and the development projects initiated in the earlier decades were dilapidated. Gradually, as citizens realized the helplessness of the government, unique methods evolved to mobilize resources for both development and reconstruction projects. In the following, an analysis is presented of (a) existing indigenous approaches for resource mobilization, and (b) conventional resource mobilization through international donor agencies in Kenya.

## The Harambee System

The term "Harambee" is a Kiswahili word that implies putting resources together. Such resources can be finances, human power, or even contributions of other kinds. It is based on mutuality, that is, mechanisms of collaboration for a common good. First used by Omolo Ongiro in the late 1950's, the term was the slogan of independence, propagated by the first Kenyan Head of State, H. E. Mzee Jomo Kenyatta, unifying the young nation (GOK, 1965a,b). The use of the term Harambee was so significant that it was, in fact, embedded in the National Court of Arms and on Kenyan currency. The government embraced the harambee spirit and encouraged citizens at all levels to use it.

The harambee approach was used for weeding fields, building or reconstructing bridges, schools, hospitals, cattle dips and other basic facilities. It was further used to implement development and reconstruction projects providing water, roads and colleges. Prominent examples of successful projects include the Gatundu Hospital in Kiambu district and the Western College of Arts and Applied Sciences (WECO). The most famous example of massive community resource mobilization was the Nyakinywa Mabati Women Group that ensured that all their

members owning grass thatched houses, converted the roofing to iron sheets that were less prone to natural hazards such as strong winds and fire disaster.

Indisputably, the Harambee System brought a lot of community cohesion. Citizens realized the need to support each other. Government efforts were supplemented and vulnerable society members were protected against adverse conditions. Many income-generating activities were started for poverty eradication and enhancing community resilience against natural and human-made hazards. Students from poor families managed to acquire higher education. However, the system had several problems. At times, the Government appeared to abandon its responsibilities. There was unequal distribution of resources; areas with influential politicians benefited more than other ones. An audit by Transparency International found alarming disparities in state sponsored Harambee contributions between January to September 2002, which was the period before the General Elections in December 2002. Out of the 20 Million US Dollars put in Harambee meetings, two of the seven provinces (Rift Valley and Eastern Provinces) received about half. Leaders took advantage of the loopholes in the system and acquired money illegally. Since contributions to the Harambee system were seen as a yardstick for one's popularity, corrupt practices were encouraged in the Civil Service, including forced donations (TI Kenya, 2002). The situation became so bad that by the time the Government had developed a legal framework to control such practices, the Harambee System had become very unpopular and had completely lost its initial noble objectives (GoK, 2003a; GoK, 2003b; GoK, 2003c). As a result, many development and reconstruction projects could not be accomplished leading to apathy and disillusionment among the citizens.

### **Solidarity Community Services**

In this type of resource mobilization, a group or organisation offers to render voluntary service. This may be motivated by seeking recognition, seeking to encourage the spirit of responsibility and unity, or simply practising one's faith or belief to serve others. Many advantages derive from these initiatives. Unity is achieved among the participants. The cost of labour is minimal. Work is accomplished efficiently and young participating people are moulded into responsible citizens. The less fortunate in society get to benefit from the privileged, thus cultivating a sense of appreciation for one another. A number of problems may, however, hamper also this approach. Not all communities appreciate good gestures when there is a feeling that somebody must be responsible for their disadvantaged position. Further, language and cultural barriers, leading to a lack of understanding of the local needs, may become a major hindrance between those helping and those being helped. A notable example of this was when the second Head

of State H. E. Daniel Arap Moi organised massive land rehabilitation programmes in the arid areas of North Eastern Kenya. At the time, Kenya was losing many acres of land to natural hazards such as desertification and wind erosion. Through solidarity community services, gabions made from wire mesh and stones were constructed across wide gullies. However, the residents of these areas instead demolished the gabions and used the wires for making roofing and nails used for improved protection against windstorms.

### **Pooling in Self-help Groups**

In this system, groups of individuals with similar qualities such as women, youth, village elders, men or workers of an organisation come together to carry something out jointly, pooling their resources together. The groups may focus on one or two objectives, such as a youth group participating in a charity walk to raise funds for a local dispensary. A group may pool resources together to help each member to weed crops or harvest. Development and reconstruction projects have been implemented to (re-)build health facilities, schools, churches and dam constructions. Other environmental projects relate to soil conservation and tree planting. Sustainability of these initiatives is challenged when the Government does not show interest or appreciation of self-help groups.

### **Merry-go-Rounds**

These are specific self-help groups formed by individuals with the objective to pool resources for uplifting the members' standards of living. Members come together in groups of 6 to 10 people. They then make visits to each other in turns. During each visit, they make a contribution to the host. Contributions to each member on rotational basis may vary from as little as 0.1 US Dollars up to 100 US Dollars. When a disaster strikes, members promptly visit the victim with an agreed contribution to alleviate the suffering and to offer relief. Merry-go-rounds are popular among youths, workers, women and even businessmen. There are many success stories of merry-go-rounds, especially among women. Home helpers have organised successful merry-go-rounds. During their off times, which are normally one day per week, the house helpers in a given estate congregate to share ideas and make modest contributions, not only on an individual basis, but also for a common cause. In Central Province of Kenya, large groups emerged based on this concept such as the Nyakinywa Mabati Groups. These groups built permanent houses for their members to become less vulnerable to disasters and other calamities. In the 1970's, there were more than 1600 women groups with over 45,000 members. Most of these groups have well written constitutions that guide the operations. So far, merry-go-rounds have not been used within the framework of governmental development or reconstruction projects.

## **Appropriation–In–Aid**

Appropriation–in–aid, also called A-in-A, is a governmental type of resource mobilization. It allows community based organisations to supplement government funding for development and reconstruction through income generated within the affected organisations. For these particular types of revenue, the Ministry of Finance authorizes an accounting officer in the concerned organisation to use the generated revenue in addition to the amounts issued from the Governmental Fund to meet its expenditure. Two main forms of A-in-A for development and reconstruction projects are operational: A-in-A which is derived from profits realized from sale of goods and services, and non-operational A-in-A which is the carrying value of the organisations' assets. A-in-A is a process conceptualized to reduce or limit bureaucratic controls over expenditure.

## **Grants and Grants-In-Aid**

A grant is a form of assistance, usually financed in kind, i.e., the benefit are non-repayable. Once given, a grant enables a recipient community-based organisation or community to carry out certain activities, which can also include development and reconstruction work. Grantors decision to support an organisation is made without the need for direct commercial gain. The trend in Kenya has been to encourage public-private sector co-operation rather than purely public support by grants. In doing so, social and economic empowerment was partially accomplished.

A grant-in-aid is another form of assistance, which is not repayable but pegged on some agreed conditions. If the conditions are not fulfilled, the grant-in-aid becomes repayable. For example, a grant-in-aid scheme may be to give scholarships for higher study on condition that the beneficiaries, upon completion of their studies, return to their home country. If they default, then they have to pay back the assistance to the beneficiary country. These schemes are carried out between Kenya and countries like Britain (Oxford Scholarships), Germany (DAAD Scholarships) and Japan (Monbusho Scholarships). So far, grant-in-aid has not been used within the framework of governmental development or reconstruction projects.

## **External Credits and Domestic Borrowing**

A credit refers here to the provision of resources for relief or development purposes, which must be repaid according to the conditions established at the time of borrowing. Credits can be concessional where a donor may attach a grant element (minimum 25%), or non-concessional where the entire amount has to be repaid. In addition, most credits are so-called matching funds where, for instance, 20% of the total amount has to be provided by the government, providing land or the project site.

Domestic borrowing is given by the national government through the sale of bonds and treasury bills. Domestic borrowing is to cover future expenditures and revenues from national or international donors. For example, after the El Niño rains of 1997/98, when many buildings, road sections and water systems were damaged, the Government sold treasury bonds to raise money from local sources in order to rehabilitate the damaged infrastructure.

## **Micro-Financing**

This is the provision of small credits, mainly given for starting, maintaining or running small enterprises. Micro financing is usually not done by large commercial banks, but by smaller micro financial institutions, which local people are familiar with. Micro financing can also act as a basic framework in resource mobilization for reconstruction works. However, so far it is not widely used within this field.

## **Technical (and Financial) Assistance**

Technical assistance aims at improving the adoption and/or implementation of some type of technical practice or procedure. When a dam or complex structure is (re-)built in a developing country, a training component is incorporated to enable technology transfer to the recipient country. Disaster education and awareness training within the context of a comprehensive school health and safety programme fits the definition of technical assistance. Successful technical assistance projects have been recorded in Kenya, especially in the fields of education and re-construction after disasters.

## **Bilateral and Multilateral Funding**

Bilateral funding is based on cooperation between agencies and countries. Funds can be made available on the basis of agreed terms and conditions. The arrangement of disbursement of the assistance is between a donor government or agency and the recipient country and/or an agency operating in the recipient country. Multilateral agencies collect resources from multiple countries and redistribute such resources to recipient countries, administered by international institutions, such as the World Bank (WB) and the International Monetary Fund (IMF). Multilateral support involves certain regulations and conditions that the recipient countries must satisfy and fulfil; such conditions have recently included good governance, democratization and elimination of corruption. Some conditions such as the structural adjustment policies (SAPs) were designed to alter existing social economic structures with the aim of controlling the imbalances in economic development. However, their success has been highly criticized. This is, amongst other things, due to the fact that they resulted in the impoverishment of Kenya's population and in their increased vulnerability to disasters.

## Conclusions

Developing countries such as Kenya have benefited tremendously from pre- and post-disaster donor funding through bilateral and multilateral arrangements. However, such resources can alone not meet the needs for reconstruction and sustainable development. As a result, in Kenya indigenous methods of resource mobilization have emerged and subsequently played a significant role in its development. While indigenous approaches could have a great potential for accessing resources, also within a pre-disaster context, they lack appropriate frameworks for their sustainability. National and municipal governments need to create a favourable environment and appropriate policies to support such approaches. The Kenyan Government had

made such efforts as regards the Harambee System; however, they came too late to tap into its existing potential for mobilizing resource for reconstruction.

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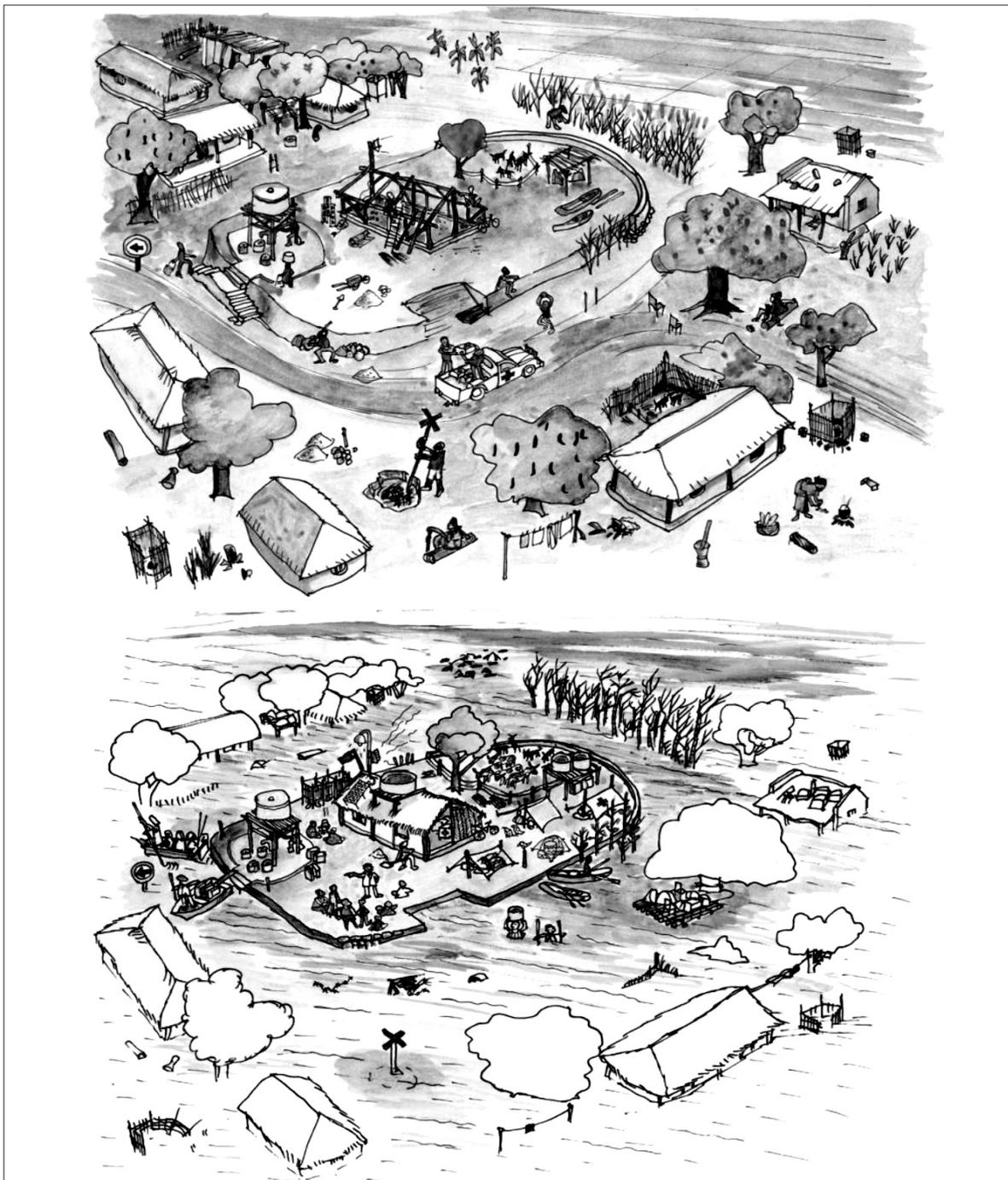
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◀ Example of training material associated with the Manual „Learning How to Live with Floods”, elaborated within the framework of a UN-HABITAT project in Mozambique. Source: Feuerhake (2004), Posters - Aprender a Viver com as Cheias, MICOA/HR Wallingford Sustainable Flood Mitigation Strategies Project, funded by DFID.

# The Dilemma of Well-Meaning Help that Costs too Much

## Viewpoint Paper

Colin H. Davidson and Cassidy Johnson

*In den ersten Wochen nach Naturkatastrophen in Entwicklungsländern, wenn die Medien Bilder von Schrecken und Leid verbreiten, werden in den reichen Ländern die Geldbeutel gelockert und Spendengelder angehäuft. Die Regierungen spenden ebenfalls, häufig in Form von Sachleistungen. Trotz dieser Großzügigkeit bleibt die Hilfe im allgemeinen weit hinter dem Bedarf zurück. Diese bislang gängige Praxis wird zunehmend als unvernünftige Verwendung von Ressourcen angesehen.*

*Anstatt teure Sachgüter (deren Kosten u.a. durch die hohen Löhne in den Geberländern verursacht werden) zu exportieren, sollte lieber finanzielle und logistische Unterstützung für eine koordinierte Beschaffung von Hilfe in nicht betroffenen und/oder benachbarten Entwicklungsländern, mit ihren niedrigen Produktionskosten, gewährt werden. Daraus ergeben sich jedoch weitere Probleme, insbesondere die Frage, wo die benötigten Güter und Dienstleistungen am besten erhältlich sind. Die in dieser Studie vorgestellten, erfolgsversprechenden Lösungen beinhalten neue Strategien der Beschaffung, gekoppelt mit veränderten Organisationsstrukturen.*

## Introduction

There are some unexpected consequences of the offers of help proposed by developed countries after a disaster (natural or man-made) hits a developing country, where vulnerabilities are usually highest. This problem is most acute in the particular context of the so-called "global village", dominated as it is by instant communication of audio and audio-visual information. The media in the developed countries (the putative donor countries) rapidly seize on a catastrophe, particularly if it hits a developing country, and broadcast the inevitably horrendous images worldwide. Whether the disaster is instantaneous (e.g. an earthquake or mud slide) or gradual (e.g. drought), the images of distress are similar and the visceral response is for the 'haves' to provide assistance to the 'have-nots', particularly in the case of the fast-onset disasters. As after the Asian Tsunami in 2004, there is international pressure for governments to donate money for immediate assistance and for subsequent steps towards recovery. This outpouring of response is, unfortunately, short-lived and stops as soon as the 'next' disaster is presented. Funding is always insufficient and every purchase should be considered carefully — within the given time constraints.

## The Sequence of Events

It is well known that when a disaster occurs, the survivors need help in sequence — wherever it comes from — and that they need this help in a sequence of

very tight time frames. Water, basic food and medical supplies are needed first, within hours or a couple of days; shelter must follow, almost at once, and must be able to last as long as it takes to set in motion the recovery processes, that is to say for several months or even years (see, for example, *Quarantelli, 1995*).

The problem that we are concerned with here is not at the very short term. The army, the local Red Cross/Red Crescent societies are well equipped to cope; they usually know the affected region well and can access stocks of essential supplies (water, food and shelter). Also, they are used to coping with situations of chaos and are able to plan for organized action in the most difficult circumstances. Action in the medium term (e.g. providing temporary housing) and the long-term (e.g. community rebuilding), for all their importance, fall into a different category, with different responsibilities, different organisation and different resources.

## The Problem

In the medium-term scenario, the donor countries respond by offering both tax dollars and using the funds raised through the generosity of their citizens to acquire, usually at home, the esteemed-to-be-necessary supplies, such as shelter, water treatment facilities, field hospitals and component parts for housing reconstruction. These items all have built

into them (i) the production costs found in those donor countries (high wages, write-off of capital investments, etc.) plus (ii) the costs of transport.

The question we ask, then, is: why do the supplies in question have to come from the donor countries? How can they be found in markets near the disaster area? Davis (1978) and UNDRO (1982) identified the problem of high costs in the context of post-disaster temporary housing, calling for the use of local materials and local solutions that would be more cost efficient, culturally appropriate and quick-on-delivery. Indeed, many countries located near the disaster-affected region (most likely other developing countries) have resources that, in principle, can be tapped into in the search for the necessary supplies, and there is every reason to believe that these resources are not overloaded with front end costs.

Tents, for example, made in a developed country probably cost ten times as much as similar tents made in a developing country, which possesses a good textile infrastructure and the capacity to make lightweight tubes. After the 2005 earthquake in Kashmir, NGOs were looking to purchase Canadian winterised tents for distribution to surviving families, because access to local markets and supplies was uncertain; however the costs of a tent in Canada were so much higher than those locally available in India and Pakistan that their purchase was economically unfeasible (M. Ball, Weatherhaven Resources Canada, personal communication). High-tech purified water distributed by Canada's Disaster Assistance Response Team (DART) in Pakistan costs a few dollars per litre whereas locally bottled drinking water costs only a few cents.

### The Solution: Organisational Design and Procurement

The need for up-front planning is vital, particularly in the not-so-absolutely-urgent reconstruction stage (i.e. after the relief stage). In this situation, there is still a need for speed; there is also an even higher degree of complexity at many levels, due to cultural differences, different scales of economic value, different plausible techniques and, above all, to the large number of intervening organisations.

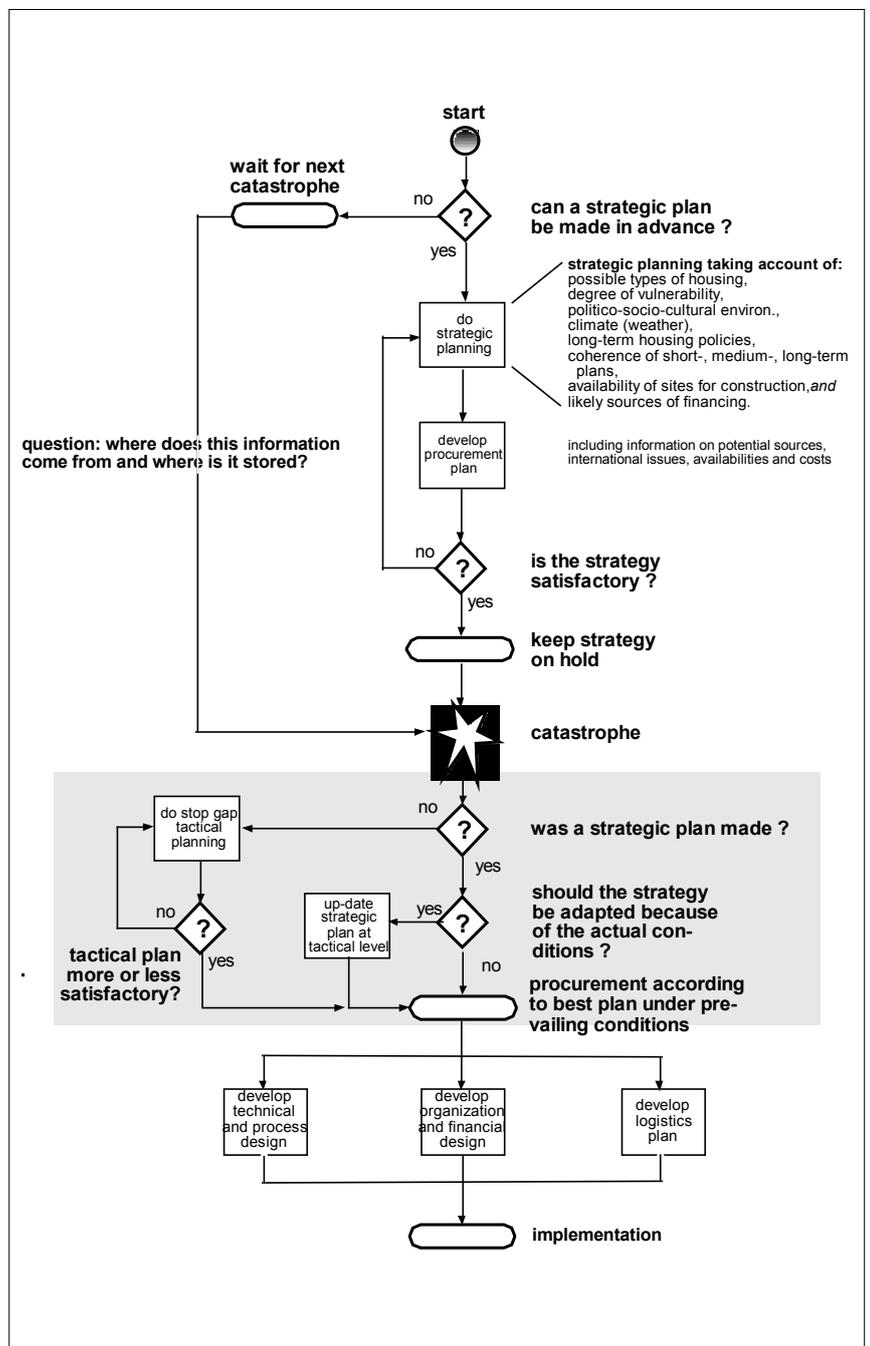
The participating organisations (government agencies from the donor and the receiving countries, local and international NGOs, the beneficiaries and their own social structures, plus the many professional and technical enterprises that will carry out much of the as-yet-unplanned-for work) have to be organized into an efficient 'machine'. Tasks have to be identified in advance, responsibilities allocated, sequences of interventions worked out, purchasing and procurement arranged, and all this coordinated with the cash-flow, that is to say, with international and national short and medium term financing.

This organisational design does not occur in some abstract environment, but rather somewhere real, where, despite the recent disasters, traditions and customs continue to constrain how things are done.

Figure 1 models the sequence of decisions that have to be made in a disaster-prone region; it shows that in the absence of advance strategic planning, only tactical plans can be prepared in the time-frame of the post-disaster environment. Good decisions require adequate information, and this information is often difficult to acquire, particularly regarding the acquisition of the best services and the most reasonable supplies. In other words, the organisational design calls inevitably for procurement planning. The resources (mainly from donor organisations) have to be shared among several options — within strict auditing controls (Johnson et al., 2005). (see fig 1)

fig 1: Strategic planning in a disaster-prone environment. Note the need to develop a procurement plan on the basis of relevant information.

Source: adapted from Johnson et al., 2005.



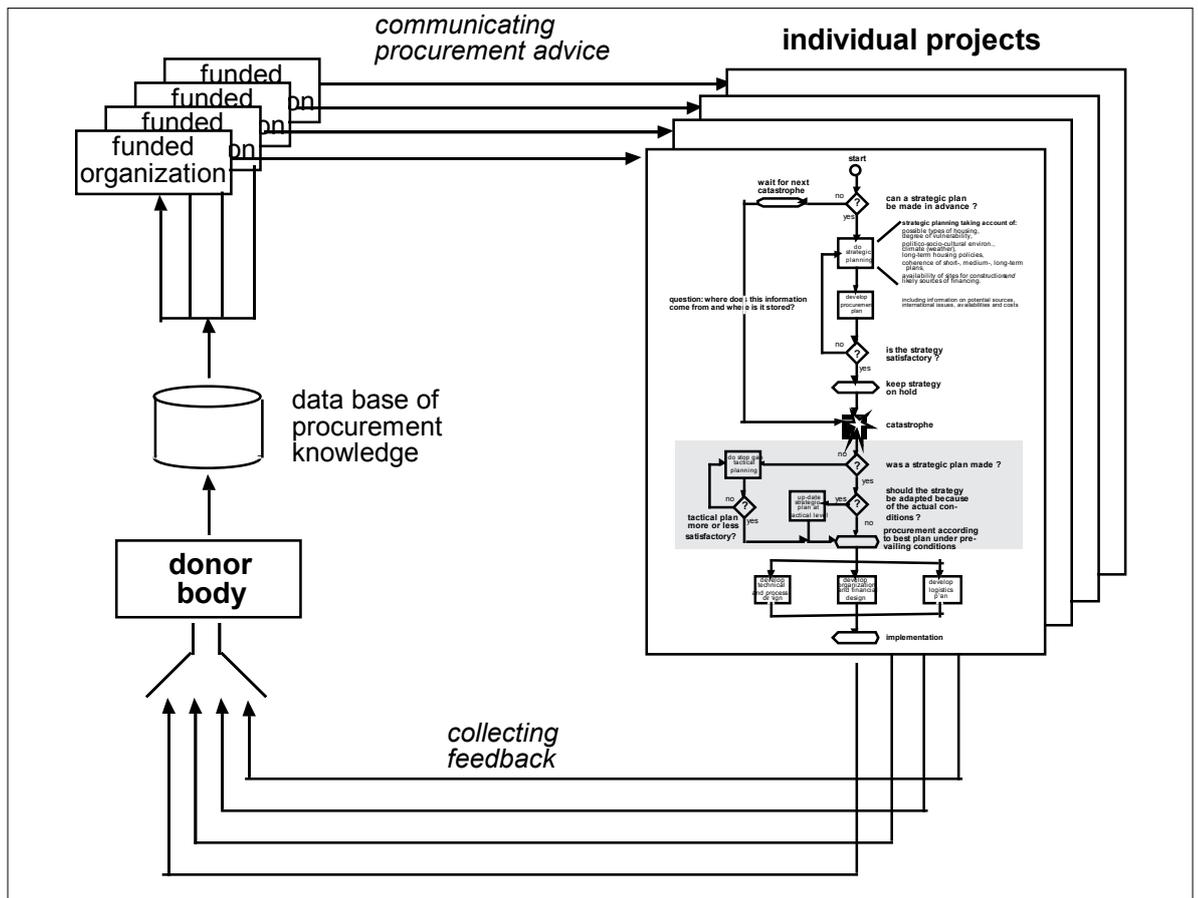


fig 2: Process of collecting and processing feedback information in order to learn from experience and to apply it to subsequent projects

### The Solution: Sources of Information

There are plausible economic reasons for acquiring materials and equipment in countries located reasonably near the disaster site. However, this implies that information about where materials or equipment are available, or whether there may be adequate and reliable production capacity. How, we ask, can this information be found? Where is it collected? How can its very existence be made familiar to post-emergency decision-makers? And how can it be retrieved?

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One of the characteristics of all construction projects (and reconstruction is no exception) is that they are carried out by a heterogeneous group of participants (a multi-organisation, euphemistically called "the project team"), brought together for a single project and probably not for any more (Davidson, 1988). This means that despite the continuity of its individual participating organisations, it is extremely unlikely that they will ever work together on a subsequent project.

Consequently, the experience they each accumulate will probably not be applicable to the later projects they are involved with, because of the different roles and relationships they each encounter within a new multi-organisation. The experience acquired the hard way by the so-called team cannot be reapplied, since the team no longer exists as such at the end of the project, and indeed there is no "learning period".

In the specific case of reconstruction projects, major funding bodies (such as the World Bank) do intervene in an extended series of projects, placing them in a good position to collect the learned experience, to process it and to make it available for following projects - its use could even be made a condition of subsequent funding (see fig 2).

We have suggested this role for funding agencies elsewhere (Lizarralde et al, 2004); here we add the importance of safeguarding the procurement dimension through safeguarding procurement experience.

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# Report on the 3rd international I-Rec Conference

## “Post-Disaster Reconstruction: Meeting Stakeholder Interest”

Jens Wodzak

*This short viewpoint paper reports on the 3rd international I-Rec Conference on “Post-Disaster Reconstruction: Meeting Stakeholder Interest”, which took place in Florence in May 2006. It summarises the main aspects which were presented during the conference. One of the key messages of the conference were that the still prevailing focus on structural and engineering solutions after disaster occurrence and the replication of seemingly successful solutions from former reconstruction projects are not sufficient to sustainably reduce existing disaster risk. In this context, a more integrated view of disaster risk management, which combines pre-disaster and post-disaster actions, the participation of project beneficiaries, transparent decision-making structures as well as transparent financing are some of the key aspects. The conference — as well as this report — call for an improved transfer of related knowledge in order to develop a new sensitivity and better strategies to face future risks and disasters.*

**1**  
www.i-rec2006.com. I-Rec steht für “International Group for Research and Information on post-Disaster Reconstruction.”

Während der diesjährigen I-Rec<sup>1</sup> Konferenz unter Leitung von Prof. David Alexander und dem I-Rec Team wurde klar, wie wenig Europa im Gegensatz zu Japan und den USA auf mögliche Naturkatastrophen vorbereitet ist. Die bekannten Erdbeben von Kobe (Japan) im Jahre 1995 und im Iran im Jahre 2003, oder auch die Folgen des Hurrikans Kathrina in New Orleans 2005 sind uns allen noch sehr gut im Gedächtnis, wenn auch offenbar zu weit von Europa entfernt.

Der Kongress wurde eröffnet mit Beiträgen zu der Frage: Wie können Katastrophen überhaupt typologisiert und dadurch in Zukunft besser und präziser benannt werden? Daneben stand die Erwartung nach einem gemeinsamen Austausch über die Qualität der Vorbereitungen und Durchführung von Hilfsmaßnahmen, ebenso wie eine aktive, koordinierte Hilfe während und nach einer Katastrophe. Was aber können Architekten, Planer, Bauingenieure etc. auf europäischer oder gar globaler Ebene tun? Sind die Katastrophen nicht viel zu unterschiedlich und zu komplex für ein einheitliches und gewissenhaft vorbereitetes Vorgehen? Mit welchem Spektrum an Katastrophen können wir uns konfrontiert sehen? Wie können Hilfsszenarien den Opfern optimale Voraussetzungen für einen Neuanfang schaffen? Wie können die kulturell spezifischen Lebensformen der Betroffenen vor dem Hintergrund notwendigerweise international dominierter Wiederaufbaukonzeption bewahrt bleiben? Wie kann die individuelle Mobilität und selbstbestimmte Lebensführung

eines Individuums nach einer Katastrophe schnellstmöglich wiederhergestellt werden? Wie können z.B. der Geldfluss von Banken und Hilfsorganisationen sowie die privaten Hilfsinitiativen die Betroffenen sinnvoll und effektiv erreichen?

Auf all diese Fragen standen nur vage und teils widersprüchliche Antworten im Raum. Schon auf europäischer Ebene gibt es offenbar wenig Kooperation, geschweige denn grenzüberschreitende Vereinbarungen über ein gemeinsames Vorgehen in Sachen Katastrophenrisiko-Management. Zumindest in Europas Süden und Südosteuropa, z.B. der Türkei, sollte ein Interesse an einem koordinierten europäischen, wenn nicht gar globalen Katastrophenrisiko-Management erkennbar sein. Doch allein Italien scheint als häufiger betroffene Region damit zu beginnen, die potenziellen Gefahren im eigenen Land zu klassifizieren und zu erfassen. So soll sich künftig jede italienische Gemeinde an dem Programm zur Identifizierung potenzieller Katastrophen, der Vorbereitung und ggf. Durchführung von Hilfsaktivitäten auf nationaler Ebene beteiligen und vorhandene Ressourcen wie Risiken in eine Datenbank eintragen, um gezielt und besser vorbereitet effektiv helfen und agieren zu können.

In den meisten Fällen sind die besonders anfälligen Betroffenenengruppen einer möglichen Katastrophe vorher bekannt. Ihre Sozial- und Einkommensstruktur kann im Voraus erkannt und benannt werden. Mit großer Genauigkeit können Prognosen über das Verhalten dieser

Bevölkerungsgruppen im Katastrophenfall und über die Konsequenzen des Verlustes an Wohnraum und Arbeitsstätten gemacht werden. Es wäre wünschenswert, wenn lokale Expertenteams im näheren Umfeld erreichbar, oder gar innerhalb von gefährdeten Gebieten und Gemeinden integriert wären. Eine Stärkung lokaler Strukturen im Sinne einer effizienten Basisbezogenen Hilfe scheint für die Zukunft angezeigt. Die Vorteile liegen auf der Hand: Lokale Helfer können im Krisenfall wesentlich zeit-, personal- und geldeffektiver arbeiten als externe Teams, die erst anreisen und in die lokalen Gegebenheiten eingeführt werden müssen. Eine schlagkräftige und effektive Selbsthilfe stärkt die lokale Selbstverantwortung und fördert gerade im Ernstfall den Zusammenhalt der sozialen Gemeinschaft.

### Typologien von Katastrophen

Katastrophen haben viele Gesichter: sie lassen sich grob einteilen in: (a) Naturkatastrophen, z.B. Erdbeben, Überschwemmungen, Waldbrände, Vulkanausbrüche und Wirbelstürme, (b) gewaltsame Auseinandersetzungen, z.B. Kriege und Terroranschläge, und (c) technische Großunfälle. Im Folgenden werden die Begriffe „Katastrophe“ und „Naturkatastrophe“ synonym verwendet.

### Vor dem Ernstfall — Nach dem Ernstfall

Entscheidend, das wurde auf der Konferenz deutlich, ist die Katastrophen-

vorbereitung - auch wenn dieses Thema im Vergleich zum Wiederaufbau bei der Veranstaltung zu kurz kam. Katastrophenvorsorge umfasst sowohl Maßnahmen zur Vermeidung von Katastrophen sowie zur Abschwächung von Katastrophenfolgen. In dem Bereich kann erheblich mehr getan werden. Neben dem Zeitgewinn spielen bessere koordinatorische und organisatorische Vorbereitungen, sowie präventive Einrichtungen die Hauptrolle.

Was bedeutet diese Erkenntnis für neue Planungen? Könnte z.B. ein neu geplanter urbaner Platz, eine U-Bahnstation, eine Sportstätte in einem potentiell gefährdeten Gebiet vorausschauend so geplant werden, dass bereits technische Infrastruktur, aber auch Raum für soziale Einrichtungen, für die schnelle Unterbringung und Betreuung von Bedürftigen und Opfern vorhanden sind?

### **Temporäre Wohnlösungen**

Wohnungsverlust, Wohnen im Zelt oder in temporären Leichtbauten, längerfristiges Wohnen in klimaresistenten Gebäuden, sozialer Wohnungsbau und Ihre Umgebungsqualitäten zeigen einen linearen Weg zu Anforderungsprofilen im „Post-Disaster Housing-Management“. Jede dieser Einzellösungen muss vor Ort qualifiziert und unter möglichst vielen Gesichtspunkten neu betrachtet werden. Nicht nur der Ernstfall, sein Eintreten und das Behausen von Flüchtlingen im Post-Disaster Szenario stehen im Vordergrund, sondern auch die Wandlungsfähigkeit der temporären Strukturen in ein zukünftiges potentiell Siedlungs- und Wohngebiet mit entsprechenden Qualitäten, sollte stärker berücksichtigt werden, so die Konferenzerkenntnisse. Die Opfer in die „soziale Mitte“ zu nehmen, und sie nicht weit außerhalb vorhandener Städte zwar auf sicherem Terrain, aber in anonymen Wohnsatelliten unterzubringen wurde des Weiteren gefordert.

### **Psychosoziale Faktoren nach Katastrophen**

Ein besonderer Fokus galt den psychosozialen Faktoren bei Katastrophenopfern: Verwirrtheit, Verletzungen und Krankheiten, Vergiftungen, Verlust von Angehörigen sind Stichworte dieses traurigen Kapitels. Als Ingenieur und Planer auf diesen Umstand angemessen reagieren zu wollen, bzw. zu können, schien ein besonderes Anliegen der Konferenzteilnehmer zu sein.

Daraus abgeleitete Vorkehrungen in die Planungen und Projekte zu integrieren, ist inzwischen eine Minimalforderung heutiger Katastrophenplanung. Die Einbeziehung von anthropologischen Erkenntnissen, wie auch eine Beteiligung der Betroffenen an Planungs- und Veränderungsprozessen, wurden als ein zentrales Anliegen in diesem Konferenzteil hervorgehoben.

Geldflussmanagement stellt einen weiteren wichtigen Faktor im Post-Katastrophen-Management dar. Es ist unbestritten, dass Geldfluss-Management und -Akquise für Hilfsprojekte eine unverzichtbare Grundlage darstellen, doch die damit zusammenhängende Problematik ist nicht zuletzt im Fall der Tsunami-Katastrophe in Asien 2004/05 deutlich geworden. Der plötzlich hereinbrechende Geldfluss führte hier nicht immer zu angemessenen Projektförderungen und zur Entwicklung von geeigneten Strukturen, sondern zur Überforderung der einheimischen Bauwirtschaft und dem Effekt, dass überbeuerte Prestigeprojekte oft hastig und am Nutzer vorbei geplant und ausgeführt wurden.

### **Katastrophensicheres Bauen**

Ein Studentenwettbewerb am Rande der Konferenz hatte den Wiederaufbau von Häusern und Nachbarschaften nach Katastrophen zum Thema. Die gezeigten Arbeiten von Studierenden schlugen ein weites Spektrum an Materialien und Konstruktionsmerkmalen jeweils in Abhängigkeit von den lokalen Gegebenheiten vor, zeigten aber auch einen kreativen Umgang mit den Regeln erdbebensicheren Bauens. Als besonders beliebt erwiesen sich die aus den 70-iger Jahren bekannten Lösungen wie z.B. aufblasbare Krankenstationen, Reinrauminstallationen für Operationseinheiten inkl. logistischer Vorhaltungen etc. Die Holzrahmen- und Fachwerkkonstruktionen als erdbebenresistente Bauform feierte ihr Comeback in den meisten Arbeiten.

### **Intelligente Datenbanken zum Katastrophenrisikomanagement**

Anknüpfend an die vorstehenden Anmerkungen leitet sich die selbstverständliche Forderung ab, kompatible Erfahrungen und Daten aus Katastrophen- und Post-Katastrophen Szenarien stärker als bisher global oder zumindest national zusammenzufassen und auszuwerten. Geradezu unvorstellbar ist, dass es bisher offenbar kaum einen globalen Datenaustausch zu

diesem Thema gibt. Know-how basierte Datenbanken, wie sie inzwischen bei jedem global agierenden Autoentwickler eine Selbstverständlichkeit sind, könnten auch in unserem Kontext nur förderlich sein. Die Einrichtung einer solchen Datenbank ist ein zentrales Anliegen von I-Rec, aber auch vielen freien Ingenieuren, Entwicklern und Nichtregierungsorganisationen (NROs). Auf der Konferenz wurde dieses Anliegen zum Abschluss noch einmal explizit in den Vordergrund gestellt und vom I-Rec Team als eine nutzerorientierte Entwicklungschance in Aussicht gestellt.

### **Fazit**

Zusammenfassend lässt sich feststellen, dass eine Fokussierung auf technische Lösungen, Ingenieurleistungen und Replikation von Lösungen bei vorausgegangenen Katastrophen irgendwo auf der Welt bei Planungen zur Siedlungs- und Stadtentwicklung nicht mehr ausreichen, um den zeitgemäßen Ansprüchen eines eher anthropozentrisch ausgerichteten Katastrophenrisiko-Managements gerecht zu werden. Die Partizipation der Betroffenen, transparentere Entscheidungsstrukturen und Finanzflüsse sind Forderungen, die gegenüber staatlichen Institutionen, großen Hilfsorganisationen und lokalen NROs gestellt und schrittweise auch durchgesetzt werden müssen. Die Notwendigkeit eines kohärenten Katastrophenrisiko-Managements vor, während und nach dem Ernstfall muss als zusammenhängendes Schema noch Eingang finden in die Köpfe der meisten Planer – die in der bisherigen Praxis meist kurzfristig und relativ unvorbereitet mit dieser komplexen Aufgabe überfordert sind. So wurde während der Konferenz deutlich, dass nur mit einer integrativen, alle Phasen betreffenden Planung nachhaltige Projekte entwickelt werden können. Die technischen Voraussetzungen sind weitgehend entwickelt - es scheint in erster Linie eine Frage der Willens zu sein, wann eine zusammenhängende, angemessene und präzise auf die Situation zugeschnittener Hilfe umgesetzt werden kann. Es bleibt der dringende Appell, die Wissensvermittlung im Bereich Katastrophenrisikomanagement interdisziplinär und interkulturell anzugehen. Alles andere ist sicher nicht mehr als zeitgemäß.

### **Jens Wodzak**

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# Neue Bücher / Book Reviews

## Architektur

**Reha Günay. Safranbolu Houses. 210 S. ISBN 975-8599-62-3. 2005. Yapi Yayin Editions, Istanbul (www.yem.net)**

Safranbolu, eine Stadt im Norden Anatoliens unweit der Schwarzmeerküste gelegen, zählt zu den wenigen Orten, in denen die traditionelle türkische Architektur noch relativ unverfälscht als ortsübergreifendes Ensemble bewundert werden kann. Es handelt sich im Wesentlichen um Fachwerkarbeit über einem geschosshohen Steinsockel, wobei die Obergeschosse im leichten Winkel versetzt über den darunter liegenden Grundriss herausragen. Viele Bauten besitzen noch eine erhöhte Plattform zum Aufenthalt über dem Dach zu Nutzung bei heißem Wetter, ‚Sofa‘ genannt. Die reicheren muselmanischen (nicht jedoch die christlichen) Familien besitzen zudem ein zweites ‚Sommerhaus‘ in den Gärten außerhalb der Stadt, wohin sie mit der ganzen Familie für die Hälfte des Jahres migrieren.

Die Publikation stellt eine komprimierte Edition eines wesentlich umfangreicheren wissenschaftlichen Berichtes (beim gleichen Verlag) dar. Hervorzuheben ist, dass diese einzigartige Architektur nicht isoliert, sondern umfassend in ihrem geografischen und sozialen Kontext dargestellt wird. So erfahren wir viel über die streng patriarchalisch geformten Regeln des familiären und sozialen Zusammenlebens, über die Geschichte der Region, ihre Wirtschaft und das Mikroklima, die Orte und Verkehrswege. Die einzelnen Bauteile, Dekoration wie auch die Baumethoden mit ihren Produktionsschritten werden in Form eines Lexikons erläutert. In der Lektüre etwas spröde, aber auf jeden Fall wissenschaftlich.

*Kosta Mathéy*

**Christian Seignobos, Fabien Jamin. La Case Obus. Histoire et Reconstruction. 212 Seiten, ISBN 2-86364-119-0. 2003, 27€. Editions Parenthèses, Marseille (ed.parentheses@wanadoo.fr)**

Die Volksgruppe der Musgum bewohnt das Grenzgebiet zwischen dem Chad und dem Kamerun: Ihre Mitglieder sind als geschickte Fischer bekannt, doch auch zu Lande wissen sie sich auf dem Rücken ihrer kleinwüchsigen, aber robusten Pferde zu behaupten.

Entdeckt wurden die Musgum von den Europäern erst um 1900, und wurden schon damals wegen der eigenartigen Bauweise der Lehmhäuser erwähnt, die ein Teil dieses Volksstammes bewohnt. Dies werden wegen ihrer Form als Case Obus (Granaten Haus) bezeichnet, manchmal auch als Kronenhaus. Die Außenwand dieser spitz zulaufenden Kuppelhütten ist mit länglichen, senkrecht stehenden Wülsten bedeckt, die ein Heraufklettern zum Zwecke des Bauens und der Instandhaltung erleichtert. Die Eingangstore sind in der Form einer Vulva geformt und teilweise auch entsprechend modelliert – eine Analogie, die sich bei vielen Urvölkern wiederfindet. Das Flussgebiet, in dem diese Bauform verbreitet ist bzw. war, ist relativ klein mit einer Ausdehnung von gerade einmal 40 km. Wie zu erwarten, setzen sich auch bei den Musgum mit der Modernisierung weniger arbeitsintensive und importierte Hausformen durch. Um das Wissen um diese gestalterische und handwerklichen Fähigkeiten zu erhalten, hat die ‚Gesellschaft für Kulturerbe ohne Grenzen‘ 1979 ein Denkmalschutzprojekt gestartet, in dem Mitglieder der Musgum bei dem Bau von traditionellen Häusern fachlich und finanziell unterstützt werden – nach Möglichkeit ohne in die Falle der Folklorisierung zu tappen. Seitdem werden die restaurierten Gehöfte nicht nur für Stammesfeste benutzt, sondern die ortstypische Bauweise wird auch formal weiterentwickelt bis hin zu modernen Transformationen.

Das vorliegende Buch beschreibt die Geschichte, Ökonomie und die Bauweisen der Musgum. Im zweiten Teil des Bandes wird die Entstehung und Entwicklung der Denkmalschutzprojekte verfolgt, einschließlich spontaner Fortentwicklungen der Architektur durch die Bevölkerung.

*Kosta Mathéy*

**Craig Freser. Mud chic. ISBN 10-978-0-620-35392-9. 2006 Quivertree Publications, Cape Town (info@quivertree.co.za)**

Das Buch ist in erster Linie ein Fotoband von Craig Freser über Lehmarchitektur und seine Bewohner, ergänzt durch einige Seiten Einführung (Kerryn du Preez) und gelegentlichen Erläuterungen geschrieben von Sindiwe Magona. Das Besondere ist jedoch die geographische Eingrenzung auf die Region der Xosa Volksgruppe in der früheren südafrikanischen Provinz Transkei (wo übrigens auch Nelson Mandela aufwuchs). Die meisten Häuser dort sind immer noch

strohgedeckte Hundhütten – nur gelegentlich hat der Wohnraum rechteckige Form. Die Wände sind aus luftgetrockneten Lehmsteinen aufgebaut – auch bei den Rundhütten, den die einzelnen Familienmitgliedern jeweils ausschließlich als Schlafraum nutzen. Die Herausgeber haben die Fotos jeweils ortsbezogen geografisch zusammengefasst und das Format mit ca. 30x30 so gewählt, dass der Band nicht im Bücherschrank verschwinden kann, sondern mit hoher Wahrscheinlichkeit auf dem Kaffeetisch sein Stammquartier findet.

*Kosta Mathéy*

**Kulbishaan und Minakshi Jain. Architecture of the Indian Desert. 216 S. 2000. AADI Centre, 10-A Tolak Nagar, Paldi, Ahmedabad 380007, India (kbj81@hotmail.com).**

Die Indische Wüste im Grenzgebiet zum heutigen Pakistan ist Heimat einer formal genialen und phantasievoll verzierten Architektur, die sich nur zu einem geringen Teil aus den Bedingungen des ariden Klimas ableiten lässt. Der Zugang zu vielen der Dörfer ist angesichts der Abwesenheit von Straßen mühselig und zeitraubend – von der großen Ausdehnung dieser Wüstenregion einmal ganz abgesehen. So wundert man sich nicht, dass diese Veröffentlichung die Krone einer 30-jährigen Forschungsarbeit darstellt. Die beiden Autoren, Professoren an der renommierten Ahmedabad School of Architecture, sind jedoch schon als Verfasser mehrerer anderer (und größtenteils vergriffener) Bücher, die auch schon Teilaspekte des hier behandelten Themenkreises enthalten, bekannt.

Die geografischen Grundlagen der beschriebenen Region werden in dem Einleitungskapitel des Buches ausführlich erläutert. Grundformen der anzutreffenden Architektur, die besonders in den abgelegenen Dörfern ihren reinsten Ausdruck finden, sind Thema des zweiten Kapitels. Dabei erweist es sich als unmöglich, eine verlässliche Typologie festzustellen, denn jede Siedlung zeigt eigene Merkmale, während bestimmte Grundthemen aber immer wieder auftauchen. Lediglich die Siedlungstypen lassen sich halbwegs sinnvoll klassifizieren: Streusiedlungen sind als ‚Dhanis‘ bekannt, Konzentrationen von Compounds (bzw. ‚Dörfer‘) nennt man ‚Bastis‘, und kompakte Konglomerate von Höfhäusern, die sich Außenwände mit benachbarten Häusern teilen können und nur in der Region von Banni vorkommen, werden hier als ‚Hamlets‘ bezeichnet.



Da der Epoche der Karawanen der Markt eine wichtige Rolle spielte, gibt es am Rande der Wüste seit jeher bedeutende Städte – in Indien namentlich Bikamer, Jaisalmer, Jodhpur, Nagaur neben anderen und weniger bedeutenden Ansiedlungen. Größerer Reichtum zog eine elaboriertere Architektur nach sich, die in ihrer Umsetzung vor Ort unsere -durch orientalische Märchen bereits eingestimmte - Phantasie noch bei Weitem übertrifft. Die für die ländliche wie städtische Architektur der Region gemeinsamen Charakteristika werden in Kapitel 4 noch einmal zusammengefasst: es sind dies in erster Linie die Innenhöfe, die erhöhten, in den öffentlichen Raum ausschweifenden Plattformen als Arbeitsfläche oder Hofersatz und die filigranen Fensereinfassungen, die den Status der Familie sichtbar machen.

Es mag paradox klingen, dass in das fünfte Kapitel eines Buches über Wüstenarchitektur den Gebäuden für das Wasser gewidmet ist. Dennoch ist es verständlich, wenn man sich des hohen Wertes von Wasser in einer so trockenen Region vorstellt und auch weiß, dass die Siedlungen ja ohne vorhandene Wasservorkommen nicht hätten entstehen können. Manche Städte verfügen über natürliche Grundwasserseen, andere haben elaborierte Brunnenanlagen errichtet. Das letzte Kapitel vor den Schussbetrachtungen gilt den zwei- und dreidimensionalen Verzierungen, die in dieser Wüstenzone noch reichhaltiger ausfallen als im übrigen Indien.

Das vorbildlich zusammengestellte Buch dürfte sich schnell in die vorderste Reihe der viel zitierten Standardwerke über vernakuläre Architektur einreihen.

*Kosta Mathéy*

**Eckhard Herrel. Ernst May. Architekt und Stadtplaner in Afrika 1939-1953. 206 S. ISBN 3-8030-1203-1. 2001. Ernst Wasmuth Verlag, Tübingen (www.wasmuth-verlag.de)**

Ernst May ist auf Grund seiner wegweisenden Siedlungsprojekte in Frankfurt aus den späten 1920er Jahren nicht nur bei Architekten ein Begriff. Auch seine Emigration in die UdSSR 1930-34, wo er hoffte, seine sozialen Prinzipien in einem sozialistischen Städtebau umsetzen zu können, ist unter Fachkreisen bekannt. Doch nur Wenige Leser wissen über die Jahre seines Exils in Afrika, wo May den Hauptteil seines Lebenswerks schuf. Dieser Epoche seines Lebens ist das vorliegende Buch gewidmet.

Nach Ablauf von Mays Vertrag in Russland, wo er modernen Städtebau weiterentwickeln wollte, war an eine Rückkehr nach Deutschland nicht zu denken. Sein

fortschrittliches Denken hatte schon vor seiner Ausreise in Deutschland heftige Kritik von Nazis bewirkt, und mit einer jüdischen Großmutter waren nun auch persönliche Repressalien zu erwarten. Deshalb suchte er mit seiner Familie einen Neuanfang in Kenia, wo er sich anfänglich als Farmer eine bescheidene Existenz aufbaute. Doch bald ergaben sich Möglichkeiten, als Architekt in Nairobi im erlernten Beruf ein Einkommen zu erwirtschaften. Zusammen mit einem Partner häuften sich Aufträge in ganz Ostafrika, wo die Firma alsbald mehrere Filialen gründete. Von May wird berichtet, dass er jeweils nach einer ersten Grundstücksbesichtigung gleich noch in derselben Nacht einen Entwurf in der Herberge anfertigte und mit den kolorierten Skizzen den Bauherrn am Folgetag derart überzeugte, dass er gleich mit einem Auftrag in der Tasche nach Nairobi zurückfahren konnte. Der Erfolg währte bis zum Ausbruch des Zweiten Weltkriegs in Europa, als er von den Engländern – der Kolonialmacht in Kenia – interniert wurde: zuerst im Hinterland, später in Südafrika. Von einigen Bauplanungen im Lager selbst abgesehen verbrachte er die Zeit dort in erster Linie mit Lesen – in seinem Lebensplan die Basis für den anstehenden Wiederaufbau Europas. Auch die Alternative einer Migration in die USA war im Gespräch, doch May entschied sich bewusst dagegen, da ihm die dortige, allein aufs Geld fixierte Lebensphilosophie zuwider war. Nach seiner Freilassung kehrte May nun nach Kenia zurück, wo er dem kriegsbedingten Mangel an Zement und Stahl mit Lehm- und Fertigteilbau geeignete. Bald schon war sein einstiges Renommee wiederhergestellt und May konnte ein eigenes Büro mit einem halben Dutzend Angestellten beschäftigen. Krönung dieses Lebensabschnittes war der Auftrag, den Generalplan für die Stadterweiterung von Kampala, der Hauptstadt Ugandas, anzufertigen. Diese Aufgabe hielt ihn zunächst auch davon ab, nach dem Krieg nach Europa zurückzukehren – doch zumindest schickte er seine beiden Söhne zum Studium dorthin. Erst als in Kenia der Mau-Mau Aufstand das öffentliche Leben und die persönliche Sicherheit zunehmend beeinträchtigte, entschloss sich Ernst May zur Rückkehr nach Deutschland, wo er nach einigen erfolglosen Bewerbungen schließlich in Hamburg neue Aufgaben in der Siedlungsplanung wahrnehmen konnte. Das Buch, parallel mit einer Ausstellung am Deutschen Architekturmuseum in Frankfurt 2001 zusammengestellt, ist ein vorbildliches und spannend zu lesendes Zeitdokument sowohl über den Architekten Ernst May wie auch über das Wirken europäischer Architekten in Ostafrika.

*Kosta Mathéy*

## Stadtentwicklung

**Stefan Boness. Asmara. The Frozen City. 96 S. ISBN 3-936314-61-6. 2006, Jovis Verlag Berlin (www.jovis.de)**

Asmara, die Hauptstadt Eritreas, war zwischen 1934 und 1940 vorübergehend Wohnort von rund 70.000 Italienern, da Mussolini von hier aus Äthiopien annektern wollte. Die Stadt wurde damals als moderne Idealstadt ausgebaut. Nach der Übernahme von Asmara durch Briten und Äthiopiern kam die Bautätigkeit zum vollständigen Erliegen – und die Stadt verwandelte sich in inoffizielles Museum der architektonischen Moderne. Die Herausgeber bemerken zynisch: ‚Armut ist der beste Denkmalschutz‘ und stellten eine Ausstellung zusammen, die mit diesem Band als Katalog dauerhaft dokumentiert bleibt. Erwähnt werden muss noch das einleitende Kapitel von Jochen Visscher über die Entwicklung der Moderne in Architektur und Städtebau Italiens; die Fotos sind von Stephan Boness.

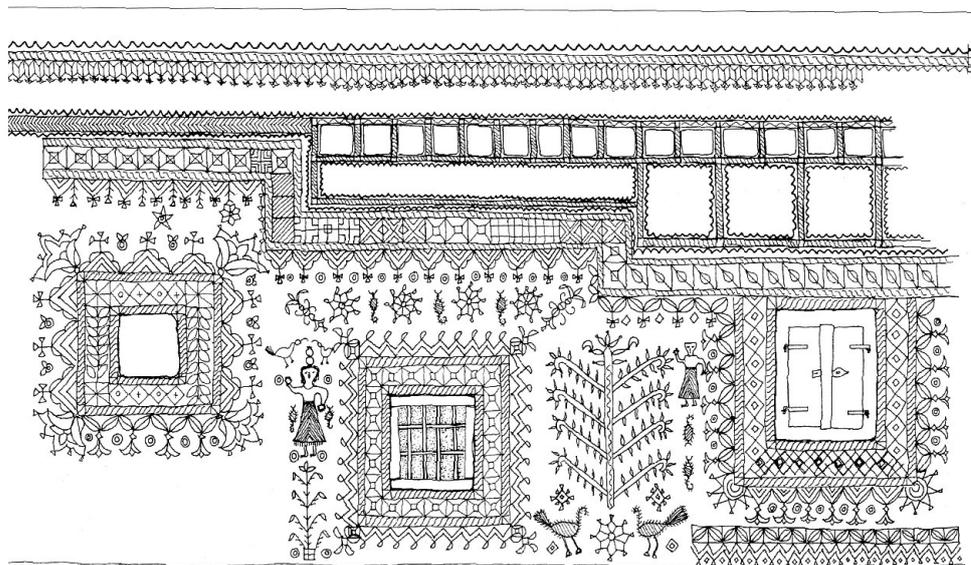
Die Ausstellung ist Februar-April 2007 im DAM Frankfurt zu sehen, danach im Kulturbahnhof Kassel und der BDA Galerie Stuttgart,

*Kosta Mathéy*

**Senda Kara. Leitbilder und Handlungsgrundlagen des modernen Städtebaus in der Türkei. 181 S. ISBN 3-8258-8675-1. 2006. LIT Verlag Münster (www.lit-verlag.de)**

Diese an der TU Berlin vorgelegte Doktorarbeit analysiert die Genese der städtebaulichen Prinzipien in der Türkei in der Epoche des Übergangs vom Osmanischen Reich zum modernen türkischen Nationalstaat. Dabei gelingt es der Autorin, die treibenden gesellschaftlichen, politischen und wirtschaftlichen Faktoren für den Transformationsprozess von einer bestenfalls dezentral auf Nachbarschaftsebene geplanten ‚orientalischen‘ Stadt (Kapitel 2) über eine international orientierte Stadt der Bürger (Kapitel 3 und 4) hin zu einer modernen und islamisch ausgerichteten Modellstadt (Kapitel 5) darzustellen. Letztere wird diesem Anspruch bisher aber bestenfalls in den geplanten Kernzonen gerecht, während die Periferie immer noch überwiegend durch informelle und anarchistisch organisierte Gecekonduks (‚wilde Siedlungen‘) charakterisiert ist. Karas gesamtheitliche Sichtweise fördert auch viele interessante Details der Stadtentwicklung zu Tage, die in anderen, stark fachzentrierten Arbeiten eher übersehen werden. So erfahren wir, dass die verheerenden Feuer in Istanbul nicht notwendigerweise durch Unachtsamkeit und Missgeschick ausbrachen und die Stadt in Trümmer legten, sondern durch Bauvorschriften, die bestimmten Bevölkerungsgruppen die Errichtung von Steinhäusern verboten, und so aus machtpolitischer Raison gezielt vorbereitet (und in einigen Fällen auch initiiert) wurden. Ebenso wurden in der ‚demokratischen‘ Aufbruchphase die Sackgassen (als ein Symbol der islamischen Stadt) in Istanbul verboten, um die gleichberechtigte Existenz islamischer und christlicher Bürger in der Stadt zu demonstrieren und so die Wirtschaftsbasis zu stärken. In der Epoche der sog. ‚Jungtürken‘ (Anfang des 20. Jahrhunderts) wurde heftig darüber diskutiert, ob man öffentliche Parks gleichzeitig für Männer und Frauen öffnen könne und solle. Ganz in die gegensätzliche Richtung lief die Entwicklung später, als der Islam als Instrument für den Aufbau der türkischen ‚Nation‘ eingesetzt wurde, griechische Orthodoxen zu Massen das Land verlassen mussten und auch (seit den 1930er Jahren) ein Verbot der Beschäftigung von ausländischen Planern und Architekten gefordert wurde.

Die Arbeit kann als Beispiel dienen, wie eine relativ eng begrenzte Forschungsfrage neue und spannende Fakten und Zusammenhänge im Rahmen einer Dissertation generieren kann. Sie ist gut recherchiert, klar geschrieben und – z.B. für lesefaule Architekten – in Einführung wie auch im Ausblick noch zweimal zusam-



KHADAKI (खडकी)

WINDOW (बाँरी)

JHAD (झाड)

KOTHAR (कोठार)

mengefasst. Das Bildmaterial scheint dagegen etwas vernachlässigt worden und eher als spärlich zu kommentieren.

*Kosta Mathéy*

**Leo van den Berg et al. The Safe City. Safety and Urban Development in European Cities. 344 S, ISBN 0-7546-4723-4, 2006. £60.-. Ashgate, Aldershot (www.ashgate.com)**

Nicht nur in den armen Ländern der Dritten Welt beunruhigt die Sicherheitslage die Bürger. In Rotterdam war ‚Sicherheit‘ letztlich ein vorrangiges Wahlkampfthema - auch für die Stadtverwaltung: Schließlich weiß auch sie, dass die ‚weichen‘ Standortfaktoren ein entscheidender Faktor bei internationalen Investitionsvorhaben sind. Schon zwei Jahre später wird unter der Koordination von Rotterdam das European URBACT ‚SecureCity‘ Network (www.urbact.org) gegründet und weitere zwei Jahre später diese Veröffentlichung als Ergebnis der ersten systematischen Bestandsaufnahme herausgebracht. Die zentrale Forschungsfrage der zu Grunde liegenden Untersuchung lautete: Welche Rolle spielt ‚Sicherheit‘ für die Stadtentwicklung im 21. Jahrhundert und welche lokalpolitischen Strategien sind daraus abzulesen? Untersucht wurden die Städte Rotterdam, Antwerpen, Glasgow, Den Haag, Helsinki, Heerlen, Leeds, Bari und Prag.

Gleich im einleitenden Theorie-Kapitel wird festgestellt, dass die gefühlte Unsicherheit oft von der statistisch nachweisbaren Situation gewaltig abweicht, aber als zentrales Anliegen der Betroffenen im Vordergrund stehen muss. Die Bereiche, auf die sich die Sorge um Sicherheit üblicherweise erstreckt, sind: real existente Kriminalität, vernachlässigte Umwelt, Anwesenheit sozial abweichender Personen und Gruppen, Industrie- und Grossunfälle, Immigration ohne Integration, Terroristische Angriffe, Naturkatastrophen. Alle diese Bedenken sind zu differenzieren in Bezug auf Wohn- und Arbeitsort; Verkehrsmittel und nur fallweise besuchte Orte. Der Einleitung folgen Fallstudien zu den oben genannten Städten: Basisdaten, Verwaltungsaufbau, besonders anfällige Stadtviertel, ortsspezifische Attraktivitätswahrnehmung, kommunale Anstrengungen zur Erhöhung der Sicherheit, ‚Best Practice‘ Beispiele, Strategie-Empfehlungen.

Erwartungsgemäß präsentiert das Schlusskapitel einen Querschnittsvergleich aus den einzelnen Fallstudien und Empfehlungen. Unter letzteren wird die Wichtigkeit einer konzertierten Herangehensweise mehrerer Agenten gleichzeitig hervorgehoben. Die Politik sollte ein vernünftiges Gleichgewicht zwischen repressiven, präventiven und proaktiven Strategien fahren. Der Angst gegenüber Gefahren lässt sich am Besten durch zuverlässige Statistiken begegnen, aber solche fehlen in den meisten Fällen. Dazu gehören auch wirksame PR Maßnahmen. Unter Forschungsdefiziten wird u.a. auf die Zusammenhänge zwischen Angst vor Kriminalität und raumbezogenen Verhalten von Individuen hingewiesen.

Für andere Forschungen besonders nützliche Informationen finden sich in dem Theoriekapitel und in der Beschreibung der ‚Best Practices‘ in den einzelnen Fallstudien.

*Kosta Mathéy*

**Spencer Chainey; Jerry Ratcliffe. GIS and Crime Mapping. 428 S. ISBN. 0-470-86099-5. 2005, 2006, John Wiley, Chichester (www.wiley.com)**

In der Regel kann ein kriminelles Vergehen nur stattfinden, wenn vier Voraussetzungen gegeben sind: (1) die Tat muss verboten sein; (2) es muss ein potentiell Geschädigter identifizierbar sein; (3) ein Subjekt muss die verbotene Tat begehen bzw. das Gesetz brechen und (4) es gibt einen Ort des Geschehens. Abgesehen von frühen stadtgeographischen Vordenkern wie Burgess in den 1920er Jahren beginnt die kriminologische Beachtung der räumlichen Umfeldes eines krimi-

nelen Geschehens und die mögliche Einflussnahme darauf mit architektonischen oder stadtplanerischen Mitteln erst in den 1970er Jahren durch Autoren wie Jane Jacobs, O. Newman oder Alice Coleman. Begriffe wie ‚Defensible Space‘ und ‚Crime Prevention through Environmental Design‘ (CPTED) kamen in Mode mit dem Ziel, Städte sicherer zu machen. Crime Spots werden seitdem systematisch erfasst und zunehmend mit Hilfe von GIS mit anderen Sozialdaten verknüpft, um rechtzeitig Gefahren vorbeugen zu können. Dieser Ansatz ist in Ländern wie den USA besonders in Mode - wie anders wäre es zu erklären dass dieser hier besprochene Band in weniger als einem Jahr schon zweimal nachgedruckt werden musste?

Das Buch ist wie ein Schulbuch aufgebaut: Zu Anfang jedes Kapitels sind die Lernziele aufgelistet, es folgt die theoretische Materie (der Lernstoff), die anhand von konstruierten oder klassischen Fallbeispielen illustriert wird, und jedes Kapitel schließt ab mit einer Zusammenfassung, weiterführender Literatur und den im Text zitierten Referenzen. Auch die Inhalte folgen einer rational didaktischen Sequenz: Kriminalität und Karten; Einführung in GIS; raumbezogene Theorien zur Kriminalität; Statistische Verwertbarkeit räumlicher Daten; Identifizierung von ‚Hot Spots‘; Datenabgleich mit nicht-kriminalistischen Informationen (‚local community data‘); Datenanalyse unter Berücksichtigung des Zeitfaktors; Relevanz der Kartierung von Daten für den Polizeieinsatz, Kriminologische Auswertung der GIS Daten; darauf aufbauende Kriminalitätsprävention; übliche Codierungen in GIS und Datenbanken; Operationalisierung eines Erfassungssystems von kriminologischen Raumdaten.

Für Planer/innen sind selbstverständlich die Ausführungen zu CPTED besonders interessant, zumal hier auch die nicht ganz unberechtigte Kritik an dem Konzept berücksichtigt wird. Aber auch viele andere Kapitel sind interessant, da sie ja eine für diese Disziplin fremde Information vermitteln - und dazu noch in einer leicht verständlichen Form. Gerade auch in den Ländern des Südens wird Stadtplanung zunehmend mit Fragen unterschiedlichster Formen von Kriminalität und Gewalt konfrontiert. Leider konzentrieren sich in diesem Buch die Argumentationen und Fallbeispiele auf Eigentumsdelikte, die im Süden der Angst vor gewalttätiger Kriminalität hinten anstehen.

*Kosta Mathéy*

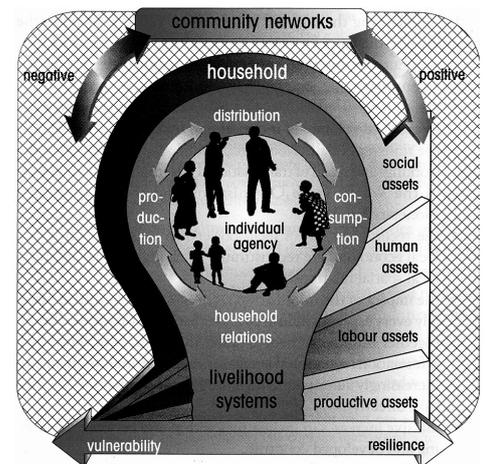
**Christine Nomdo; Erika Coetzee (eds.). Urban vulnerability: perspectives from Southern Perspectives. 207 S. ISBN 0-85598 491 0, 2002. Oxfam Publishing, Oxford (www.oxfam.org.uk/publications)**

Gefahr für die städtische Bevölkerung wird in diesem Buch aus der Sicht mangelnder nachhaltiger Entwicklung gesehen, und zwar in erster Linie infolge negativer Auswirkungen des Urbanisierungsprozesses auf die Bewohner und in zweiter Linie bezüglich der Schäden, die Urbanisierung auf die Umwelt allgemein bewirkt. In der ersten Gruppe wird unter akuten und chronischen Risiken unterschieden: Katastrophen wie Überschwemmungen und Grossfeuer gehören zu den akuten Bedrohungen, und Gesundheitsschäden hervorgerufen durch mangelhafte Sanitärversorgung eines Wohnviertels zu den chronischen. Solche eher prinzipiellen Einordnungen des Themenkomplexes werden in den beiden ersten Kapiteln des Bandes analysiert und das Konzept von Governance als Interventionsebene (‚micro strategies‘) zur Schaffung von Livelihood als Zielsituation eingeführt.

Es ist bekannt, dass Oxfam weniger an theoretischen Debatten interessiert ist, sondern eher an der Linderung konkreter Not. Deshalb wird das Thema in den Kontext des südlichen Afrika gesetzt, wo der Urbanisierungsprozess in voller Dynamik hereinbricht und nach Maßnahmen zur Verminderung der Risiken schreit. Länderprofile und Fallstudien zu Zambia, Mozambique, Zimbabwe, Malawi und Südafrika folgen im Hauptteil der Publikation und zeigen Erfahrungen zu

unterschiedliche Strategien zur Risikominderung auf. Da die Rahmenbedingungen jeweils ganz unterschiedlich sind, wird bewusst auf die Postulierung von Empfehlungen verzichtet.

*Kosta Mathéy*



**Esther Higuera. Urbanismo bioclimático. 241 S. ISBN 84-252-2071-8, 2006. Gustavo Gili, Barcelona (www.ggili.com)**

Städtebau muss viele Faktoren berücksichtigen, und wenn das Adjektiv ‚bioklimatisch‘ davor steht, umso mehr. Das dachte sich offensichtlich auch die Autorin, Professorin an der Escuela Politécnica in Madrid: Das erste Kapitel führt sie bis in die Frühgeschichte zurück, in der die Autorin bereits runde und quadratische Siedlungsgrundrisse ausfindig macht. Gartenstadt, die Europäische Moderne und die Theorie der Urban Footprints werden auch nicht vergessen und im gleichen Kapitel gewürdigt. Kapitel Zwei wendet sich den lokalen Rahmenbedingungen des Bauens und Siedelns zu: Geomorphologie, Wasser, Boden und seine Tragfähigkeit, Vegetation, Sonneneinstrahlung, Wind, Katastrophenrisiko, Klima. Kapitel Drei unterrichtet auf 11 Seiten über Prinzipien der Stadt- und Regionalplanung unter Umweltgesichtspunkten. Im letzten und umfangreichsten Kapitel geht es dann ans Eingemachte: Grundstückswahl, die vier (!) Klimazonen der Erde, Energetisches Bauen, Freiraumplanung, Umweltverträglichkeit.

Alle genannten Themen sind in anderen Publikationen bereits gründlicher, kompetenter und anschaulicher publiziert worden - aber vielleicht nicht lückenlos in Spanisch. Es fällt schwer, ein weiteres Herausstellungsmerkmal für dieses Buch zu finden.

*Kosta Mathéy*

**UN-Habitat (Hrsg.): Meeting Development Goals in Small Urban Centres - Water and Sanitation in the World's Cities 2006, UN-Habitat/Earthscan, London, 2006, 273 S., \$25.00 (Bezug: Earthcan - earthinfo@earthscan.co.uk)**

Es sieht so aus, als ob UN-Habitat nun die Wasser-Agenda der Vereinten Nationen von UNEP (United Nations Environmental Program) übernimmt. Dieser von dem Londoner International Institute of Environmental Development (IIED) verfasste Band, beschreibt sehr umfassend das heutige Wissen und die gegenwärtigen Ansätze der internationalen Wasser-Agenda. Es macht dabei nicht so viel Unterschied, ob dies sich auf Grossstädte oder - wie hier - auf kleine und mittelgrosse Städte bezieht. Die Unterschiede sind allein im Bereich der Institutionen und der ökonomischen Basis für nachhaltiges und profitables Wassermanagement zu sehen. Privatwirtschaftliche Ansätze sind eher in den Städten zu realisieren, während auf dem Lande dies erheblich schwerer sein wird. Besonderes Verdienst dieses Berichtes ist, die Darstellung der Komplexität des Wassermanagements, und die grosse

Herausforderung, Wasser allen Erdbewohnern nachhaltig zugänglich zu machen. Es wird klar, dass Wasser nicht nur ein Problem einer limitierten natürlichen Ressource ist, sondern Verfügbarkeit von Wasser zu einem guten Teil auch vom Management und der Selbstorganisation der städtischen und ländlichen Bevölkerung abhängt. Da Wasserversorgung eines der zentralen Themen der von den Vereinten Nationen propagierten Millennium Development Goals (MDGs) ist, nimmt dieser Aspekt eine wichtige Stellung in der Wasser-Agenda ein.

Obwohl die Themen dieses Buches nicht gerade neu sind, liegt die Qualität dieser Publikation gerade in der umfassenden Darstellung der verschiedenen Herangehensweisen, der institutionellen und Managementaspekte des Wassersektors. Das Buch ist daher Allen zu empfehlen, die einen solchen Überblick suchen. Darüberhinaus bietet das Buch auch noch einige interessante Definitionen zu dem, was man "kleine und mittelgroße Städte" nennt.

Florian Steinberg

## Wohnungswesen

**Alfredo Rodríguez y Ana Sugranyes (eds.) Los con techo. Un desafío para la política de vivienda social. 2005. Santiago de Chile: Ediciones SUR.**

El libro en cuestión pone en la palestra uno de los temas fundamentales del desarrollo urbano actual de las ciudades chilenas, y reúne un excelente conjunto de trabajos que muestran, desde distintos enfoques, lo que está sucediendo con la vivienda social en el país. Partiendo del reconocimiento del éxito que ha tenido la política habitacional como sistema de financiamiento y como efectivo mecanismo para abrir, a cientos de miles de familias chilenas de bajos y muy bajos ingresos, la posibilidad de acceder a una "solución de vivienda" en propiedad, se muestran aquí de cerca algunos de los fuertes impactos negativos o "consecuencias no deseadas" que esta política está produciendo sobre sus residentes y sobre las ciudades del país. El centro del debate está puesto aquí en la calidad de la vivienda y no – como hasta ahora lo ha hecho el Gobierno – en la cantidad de soluciones habitacionales que es capaz de producir cada año. En palabras de los editores: "Si hace 20 años atrás el problema era de las familias sin techo, hoy, en Santiago, el problema es de las familias con techo". Yo agregaría no sólo en Santiago, sino en el país. La gravedad de la situación es claramente señalada: "Los residentes en estas unidades son en general personas que están insatisfechas con la calidad de su vida cotidiana. Dicen que quieren irse a otros barrios y no pueden hacerlo, porque son pobres y porque no existen otras alternativas habitacionales" (p. 14).

En el primer capítulo, Sugranyes hace una revisión exhaustiva y un notable análisis crítico de la producción de la vivienda social en el país en las últimas tres décadas. En el capítulo dos, los editores desarrollan más ampliamente la tesis básica del libro, mostrando la compleja situación que esta política de vivienda ha generado y el explosivo escenario que plantea en este momento la vivienda social construida: "Una política exitosa de vivienda ha terminado creando un nuevo problema de vivienda y urbano: un enorme stock de viviendas sociales inadecuadas que requiere atención" (p. no pueden hacerlo, porque son pobres y porque no existen otras alternativas habitacionales" (p. 14). Segovia ofrece en el capítulo tres un excepcional enfoque: la visión que tienen las mujeres, niños y adolescentes residentes de tres conjuntos de vivienda periféricos, sobre su vida cotidiana. Skewes muestra a continuación, de manera fascinante, el drástico cambio que se observa en las personas y familias cuando son trasladadas de un campamento irregular, anónimo y con una intensa vida social, a la villa, donde pasa a primar el aspecto exterior y las posesiones, surge la inseguridad y "cada cual se preocupa de lo suyo". Aravena y Sandoval y Cáceres exponen, en los capítulos

quinto y sexto, aspectos complementarios de las situaciones que se observan en los nuevos asentamientos producto de esta política de vivienda, mostrando resultados de investigaciones realizadas en algunos conjuntos específicos. Márquez, en el capítulo siete, propone una polémica y a nuestro parecer poco afortunada relación entre el origen de los residentes y el estado de las viviendas, adjudicando a la falta de cultura de los pobladores provenientes de campamentos una incapacidad para mantener en buen estado sus viviendas y afectar negativamente al barrio: "Tras las fachadas deterioradas, en cambio, habitaban las familias provenientes de campamentos y cuya postulación se había realizado de manera colectiva y participativa" La historia de Bernarda de Rauco es una hermosa forma de expresión de la realidad en las palabras de la pobladora (capítulo ocho). En el capítulo nueve, De la Jara plantea preguntas importantes, entre otras: ¿Cómo continuar con los necesarios planes masivos de vivienda social y resolver la imperiosa necesidad de mejorar las condiciones de habitabilidad de la vivienda y su entorno? En las conclusiones, los editores plantean temas fundamentales como la insatisfacción mayoritaria de la población con sus condiciones de vida, los crecientes problemas de convivencia que llevan a diferentes expresiones de violencia intrafamiliar y en el exterior de los barrios, y la necesidad urgente de entrar en una segunda fase de la política de vivienda que ponga en su centro lo cualitativo, la calidad de la vivienda y su entorno.

En pocas palabras, esta obra es y será fundamental para conocer y profundizar en el estudio de la vivienda social y el desarrollo urbano, y esperamos que sirva como base para la urgente necesidad de re-encaminarse hacia una política de vivienda "ejemplar". Creemos asimismo que esta obra será de gran utilidad para otros países latinoamericanos y países en desarrollo de otras regiones del globo, los que han puesto sus esperanzas en los avances que ha mostrado la política de vivienda chilena; estos estudios les pueden mostrar cuáles son los errores que no deben ser repetidos y cuáles son los valores que no deben ser perdidos o que deben ser rescatados. Sólo así podremos asegurarle a aquellos que más lo necesitan unas mejores condiciones de vida, y podremos avanzar hacia ciudades más equitativas y más gratas.

María Elena Ducci

## Gesellschaft und Politik

**Annegret Nippa, Peter Herbstreuth. Unterwegs am Golf. Von Basra nach Maskat. Fotografien von Hermann Burchardt. 232 S. ISBN 3-8930-070-X. 2006. Verlag Hans Schieler, Berlin (www.schiler.de)**

Der 1859 geborene deutsche Kaufmann Herrmann Burchardt beschloss mit 30 Jahren, seinen Beruf an den Nagel zu hängen und verbrachte die ihm noch vergönnten 20 weiteren Lebensjahre damit, die Welt zu erkunden. Das dazu nötige Kleingeld besaß er, die für das Reisen notwendigen Sprachen erlernte er und eine Platten-Kamera besorgte er sich auch noch. Für die Route von Basra über Kuwait, durch den persischen Golf und Bahrain, Qatar, Abu Dhabi, die Meerenge von Hormuz, den Golf von Oman bis nach Muscat nahm er sich 100 Tage Zeit – auch für damalige Zeiten eine gemächliche Tour. Für die arabischen Scheichs, denen er aufwartete, war es unverständlich, dass der verückte Deutsche (sie hatten ohnehin noch nie etwas von Deutschland gehört) die Lasten der Schiffsfahrt und Kamelkarawanen ohne einen für sie einsichtigen Grund, wie etwa Handelsgeschäfte oder politische Missionen, auf sich nahm. Aber Gastfreundschaft ist ein ungeschriebenes Gesetz des Orients. Und so kehrte er mit vielen schweren Kisten voller Glasnegative (im Schnitt eins pro Reisetag!) zurück in seine Wahlheimat Damaskus. Nach seinem Tod vermachte Burchardts Neffe die 2000 Reisefotos seines Onkels an das Völkerkundemuseum in Berlin. Die Fotos wurden



gewissenhaft inventarisiert – doch ohne Bezug zu den Motiven, was ihren Wert stark relativierte. In vierjähriger Arbeit gelang es der Ethnologin Annegret Nippa 80 Jahre später, den größten Teil der Motive zu lokalisieren und den stichwortartigen Tagebuch-Eintragungen des Fotografen zuzuordnen. Weitere zehn Jahre später erfahren die Aufnahmen jetzt ihre Veröffentlichung. Sie versetzen den Betrachter und Leser des Buches in eine wahrhaft andere Welt, die uns bestenfalls an Assoziationen zu Märchen des Orients erinnern. Denn nicht nur Bilder enthält diese Veröffentlichung: der Reiseweg wird aus dem ‚off‘ – gleichsam dem Chor im griechischen Theater – begleitet und kenntnisreich kommentiert, möglicherweise besser, als Burchardt dies selbst vermocht hätte. Doch dieser kommt auch noch zu Wort, und zwar mit der Niederschrift eines Vortrags über seine Reise, den er 1906 vor der Gesellschaft für Erdkunde in Berlin gehalten hatte. Ein in jeder Hinsicht einmaliges Buch.

Kosta Mathéy

## Infrastruktur

**Morna E. Gregory und Sian James. Stille Örtchen. Ein Besuch auf den Toiletten der Welt. 256 Seiten, ISBN 3-89660-392-2. 2006. € 15,-. Knesebeck Verlag München (www.knesebeck-verlag.de; Preview: <http://www.toilets-of-the-world.com>)**

Diese Sammlung an Toilettenfotos wurde von einer Psychologin und einer Fotografin zusammengestellt und ist nach Erdteilen sortiert. Eine kulturgeschichtliche Einführung in die Materie vermittelt Basiswissen über das Thema mit journalistischem Tiefgang und lässt sich z.B. leicht im Verlauf einer 5-Minutensitzung verdauen. Eine kleine Story gibt es zusätzlich zu jedem der rund 200 Fotos dazu. Natürlich hätte man die un-



terhaltende Bilderschau auch noch mit Hintergrundinformationen aus ökologischer, sanitärtechnischer, architektonischer, medizinischer Sicht hinterlegen können und so den Nutzwert des Bandes noch erhöhen können, aber es geht in erster Linie um den Unterhaltungsfaktor für die Toilettennutzer. In diesem Sinne sollte die Publikation auch als Anregung an Bauherren und Architekten verstanden, in der Gestaltung der Aborte mehr Phantasie zu investieren.

*Kosta Mathéy*

**Ehsan Masood, Daniel Schaffer. Dry: Life without Water. 192 S. ISBN 0-674-02224-6, 2006. GPL € 23.-. Harvard University Press, London.**

Die zentrale Bedeutung von Wasser für das Leben auf der Erde, die zunehmende Knappheit desselben in vielen Regionen der Erde und die Gefahr internationaler Konflikte daraus ist allgemein bekannt – weniger jedoch die real existierenden Ansätze, der Wasserarmut zu begegnen. Dieses Buch hat sich zum Ziel gesetzt, über das übliche Fachpublikum hinaus eine breite Bevölkerungsgruppe zu erreichen, diese über die Problematik zu sensibilisieren und über Fortschritte bei Gegenmaßnahmen zu unterrichten. Um dieses Ziel zu erreichen, wurde kein Aufwand gescheut, an die besten Fotos zu der Thematik heranzukommen und Texte in einer der Zielgruppe gewohnten und leicht verdaulichen Form zu verfassen. 16 Fallstudien berichten über Wiederaufforstung, Nebelfänger, rainwater harvesting, alternative Einkommensquellen in Trockengebieten etc. Ein ästhetisch gelungenes Buch, das sich sorgenlos am sonntäglichen Kaffeetisch herumzeigen lässt und nebenbei suggeriert, dass es wieder aufwärts geht.

Diese Schönmalerei ist genau das Problem der Publikation. Im Stil der vorweihnachtlichen Broschüren von Hilfsorganisationen konzentriert sich die Publikation ausschließlich auf wenige kleine Erfolgsprojekte. Kein Wort über die Ursachen der Versteppung von halb Afrika, über den globalen Klimawandel, über Bodenkonflikte, über die Vermarktungsprobleme der in mühsamer Handarbeit von Alternativmethoden erzeugten Produkten, die auf dem von internationalen Konzernen beherrschten Weltmarkt nicht konkurrieren können. Für das erklärte Ziel der Volksaufklärung ist das eher kontraproduktiv. Doch für all jene, die gerne in einem schönen Bilderbuch herumblättern, hat die hauptsächlich von der italienischen Regierung finanzierte Global Environmental Facility (GEF) die passende Publikation auf den Markt gebracht.

*Kosta Mathéy*

## Technologie

**Gernot Minke. Building with Earth. Design Technology of a Sustainable Architecture. 199 S. ISBN 3-7643-7477-2, 2006, € 50,-. Birkhäuser Verlag, Basel (www.birkhauser.ch)**

Der Autor Gernot Minke ist mit Abstand der renommierteste Lehm-bau-Spezialist in Deutschland und hat seit den 1970er Jahren ausgiebig über Lehm-bau und experimentelle Konstruktionsweisen publiziert. Sein wichtigstes Werk ist das bereits in sechster Auflage erschienene ‚Neue Lehm-bau Handbuch‘, das auch ins Spanische und Russische übersetzt wurde. Diese neue englischsprachige Veröffentlichung beim Birkhäuser Verlag, welcher eine weltweite Distribution sicherzustellen vermag, stützt sich in weiten Teilen auf die genannte deutsche Veröffentlichung: Auf die historische Einführung folgen 13 weitere Kapitel zu technischen Aspekten wie z.B. Materialeigenschaften und Veredelungsformen, Konstruktionsmethoden, Oberflächenbehandlung oder Erdbebensicherheit. Auf den letzten 50 Seiten werden moderne und attraktive Lehm-bau-Beispiele aus vielen Teilen der Welt vorgestellt und mit Farbdrucken illustriert – einschließlich Minkes eigener Häuser. Dieser Bautenkatalog dürfte auch die Zweifler unter den Leser/innen davon überzeugen,

dass Lehm ein sehr moderner Baustoff sein kann, der zudem gegenüber vielen Markteingeführten Materialien eine Reihe überzeugender Vorteile mitbringt.

Der Band fügt sich ein in eine Serie anderer Publikationen zur Baukonstruktion beim gleichen Verlag. Zielgruppe sind hier die praktizierenden Architekten, die sich mittels Fachbüchern in erster Linie über Detailfragen informieren wollen – was sich (gegenüber des genannten deutschen Buches beim Ökobuch Verlag) in einem relativ langweiligen Layout und einem einfachen broschiierten Einband niederschlägt. Auch das A-4 ähnliche Format ist weniger handlich, dafür aber Platz sparend.

*Kosta Mathéy*

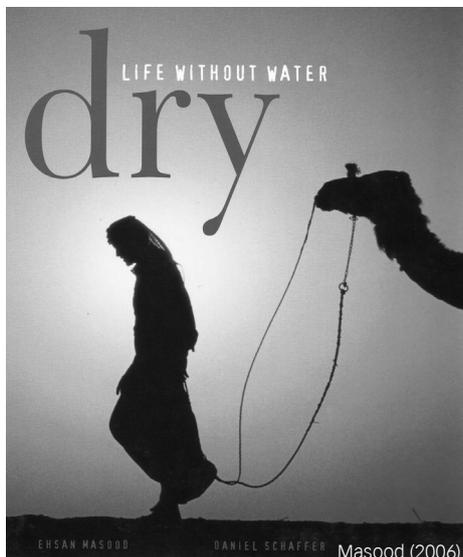
## Nachschlagewerke

**Randi Gunzenhäuser, Erika Haas. Promovieren mit Plan. Ihr Individueller Weg: von der Themensuche zum Dokortitel. 114 S. ISBN 3-8252-2820-7. 2006. € 13,-. Erika Budrich Verlag, Leverkusen-Opladen (www.budrich-verlag.de)**

Hilfestellungen zum erfolgreichen Promovieren kann es nicht genug geben – gemessen an den Antragstellern, die sich nicht einmal über die Hauptmerkmale einer solchen Arbeit im Klaren sind. Natürlich gibt es bereits eine gewisse Auswahl an einschlägigen Publikationen (besonders im englischsprachigen Raum): doch dieses Büchlein zeichnet sich dadurch aus, dass es die Berechtigung von ganz unterschiedlichen Typen von Promovent/inn/en, unterschiedliche Fachkulturen und ein breites Spektrum der Annäherung an ein Thema als legitim anerkennt. Vielleicht ist die Urheberschaft von zwei (selbstverständlich promovierten) Autorinnen ein weiteres Herausstellungsmerkmal.

Behandelt werden in den Band sowohl prinzipielle wie wissenschaftliche, praktische und taktische Fragen. Deren Sequenz folgt sinnvollerweise grob dem zeitlichen Ablauf eines Promotionsvorhabens: Themen und Betreuersuche, Antragsphase, Forschungsphase, Prozess der Informationsverarbeitung, Schreiben der Dissertation, Schlussphase. Die vermittelten Empfehlungen sind durchaus sinnvoll und wenn alle berücksichtigt werden, kann eigentlich nichts mehr schief gehen. Allerdings müssen sich die Autorinnen die Kritik gefallen lassen, dass sich die Welt nicht immer so einrichten lässt, wie sie es gerne hätten und dass die beschriebenen Phasen zwar im Kopf aber nicht unbedingt in der Praxis alle konsekutive verlaufen. Dessen ungeachtet sei das Werk allen, die eine wissenschaftliche Weiterqualifizierung für sich erwägen, nachdrücklich ans Herz gelegt. Mehr noch: ein selektives Stöbern in dem Buch zählt sich auch andere Leser aus, wie Diplomanden oder auch nur einfachen Berichte-Schreibern.

*Kosta Mathéy*



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## Veranstaltungen / Forthcoming Events

### January 8 - 10, 2007 in Seville, Spain

Legal issues for city-to-city co-operation: A framework for local government international action in support of the Millennium Development Goals. Organised by the Seville Centre for City-to-City Cooperation, a project of UN-HABITAT Best Practices and Local Leadership Programme. Contact: Diana Lopez Caramazana. Phone: (+34.954).48.02.23, <DLC@urbanismo-sevilla.org>. <http://staging.unhabitat.org/> or [www.city-mayors.com/events/](http://www.city-mayors.com/events/)

### January 20 - 25, 2007 in Nairobi, Kenya

7th World Social Forum (WSF). Organised by the WSF 2007 Organising Committee. Venues: Kenyatta International Conference Centre, Uhuru Park and Central Park. Contact: Kenyan Organization Committee, Masandukuni Lane, Off Gitanga Road, P.O. Box: 63125, 00619 Nairobi Kenya. Phone: (254 020) 386 0745 / 386 0746, Fax: (254 020) 271 3262, <socialforum@sodnet.or.ke>, [www.fsm2007.org](http://www.fsm2007.org) or [www.forumsocialmundial.org.br/](http://www.forumsocialmundial.org.br/)

### February 15 - 16, 2007 in Edinburgh, UK

Housing Economics Workshop, organised by ENHR Working Group on Housing Economics. Contact: ENHR, Institute for Housing and Urban Research, Uppsala University, P.O. Box 785, SE-801 29 GÄVLE, Sweden, Phone: (+46 26) 420 65 00, Fax (+46 26) 420 65 01, <M.J.White@hw.ac.uk> or <enhr@ibf.uu.se> [www.ibf.uu.se/enhr/economic.pdf](http://www.ibf.uu.se/enhr/economic.pdf)

### April 17 - 21, 2007 in San Francisco, USA

Association of American Geographers Annual Meeting: Geographies of practice and the urban outdoors - issues including environmental justice, social inclusion, city sustainability and urban design. Contact: Association of American Geographers, 1710 16th Street NW, Washington, DC 20009. Phone: (+1 202) 234 1450, Fax: (+1 202) 234 2744, <meeting@aag.org> [www.aag.org/](http://www.aag.org/)

### April 19 - 20, 2007 in Dublin, Ireland

Seminar on Comparative Housing Policy, organised by ENHR Working Group on Comparative Housing Policy. Contact: Michelle Norris, School of Applied Social Sciences, University College Dublin, <michelle.Norris@ucd.ie> or Mark Stephens, Centre for Housing Policy, University of York, <ms513@york.ac.uk> or ENHR <enhr@ibf.uu.se> [www.ibf.uu.se/enhr/comparative.pdf](http://www.ibf.uu.se/enhr/comparative.pdf)

### April 25 - 27, 2007 in Stuttgart, Germany

CABERNET 2007 - The 2nd International Conference on Managing Urban Land, presented by The Concerted Action on Brownfield and Economic Regeneration Network (CABERNET) and REVIT, in association with University of Nottingham, UK and Umweltbundesamt (Federal Environment Agency), Germany. Contact: <cabernet@nottingham.ac.uk> [www.revit-cabernet.org/](http://www.revit-cabernet.org/)

### April 25 - 28, 2007 in Seattle, USA

37th Annual Meeting of the Urban Affairs Association (UAA): "Cities and Migration: Opportunities and Challenges". Contact: Urban Affairs Association, University of Delaware, 298 Graham Hall. Phone: (+1 302) 831 1681, Fax: (+1 302) 831 4225, <uaa@udel.edu> (general inquiries), <uaa-conf@udel.edu> (conference-related) [www.udel.edu/uaa/](http://www.udel.edu/uaa/)

### June 12 - 15, 2007 in Munich, Germany

Velo-city 2007: "From Vision to Reality". Velo-city is a biannual international forum to discuss strategies to promote bicycle transport. Organised by Velo-city and the City and Traffic Planning Office, City of Munich. Venue: Gasteig Conference Centre. Contact: Velo-city 2007 Office, c/o SVK - Kaulen City and Traffic Planning Office, Deliusstraße 2, D-52064 Aachen, Germany. Phone: (+49 241) 33444, Fax: (+49 241) 33445, <info@velo-city2007.com> [www.gasteig.de](http://www.gasteig.de) or [www.velo-city2007.com](http://www.velo-city2007.com)

### June 25 - 28, 2007 in Rotterdam, NL

ENHR International Research Conference on Sustainable Urban Areas; organised by ENHR and the Delft Centre for Sustainable Urban Areas / OTB Research Institute for Housing, Urban and Mobility Studies. Call for papers; deadline for abstracts: February 1, 2007. Contact: Drs. Esther Philipsen, OTB Research Institute, Jaffalaan 9, NL-2628 BX Delft, The Netherlands. Phone: (+31 15) 278 3005/ 278 7951, Fax: (+31 15) 278 4422, <E.Philipsen@otb.tudelft.nl>, [www.sua.tudelft.nl](http://www.sua.tudelft.nl) or: ENHR: [www.enhr.ibf.uu.se/](http://www.enhr.ibf.uu.se/)

### June 27 - 29 2007 in Glasgow, UK

International Conference on Whole Life Urban Sustainability and its Assessment: "Sustainable Urban Development: Meeting the Challenges of Whole Life Assessments". Organised by SUE-MoT, a consortium of Dundee, Glasgow Caledonian, Loughborough and St Andrews Universities. Contact: Marianne Halforty, Conference Administrator, Glasgow Caledonian University. Phone: (+44 141) 273 1366, <M.Halforty@gcal.ac.uk> [www.sue-mot.org.uk/content/view/full/86/89/](http://www.sue-mot.org.uk/content/view/full/86/89/)

### August 5 - 10, 2007 in Berlin, Germany

International Congress for Environmental Planning and Management: "Planning the Urban Environment: Visions - Implementation - Results". Interdisciplinary Exchange of Planners and Planning Executives. Contact: Prof. Dr. Hartmut Kenneweg (EB 5), Technical University of Berlin, Str. des 17. Juni 135, 10623 Berlin. Fax: (+49 30) 314 25674. <Kenneweg@ile.TU-Berlin.DE> / Prof. Dr. Uwe Tröger <uwe.troeger@tu-berlin.de>, Organizing office: <urbcongress@tu-berlin.de> [www.urbenvirongcongress.tu-berlin.de/](http://www.urbenvirongcongress.tu-berlin.de/)

### August 19 - 23, 2007 in Amsterdam, NL

EUGEO 2007: 1st international conference on the geography of Europe. Organised by the European Association of Geographical Societies; hosted by the Royal Dutch Geographical Society together with the University of Amsterdam. Contact: Remco van der Hoogt, Royal Dutch Geographical Society, P.O. Box 80123, NL 3508 TC Utrecht, The Netherlands. Phone: (+31 30) 253 14 05 / 40 56, Fax. (+31 30) 253 55 23, <info@eugeo2007.org> [www.eugeo2007.org/](http://www.eugeo2007.org/)

### August 30 - Sept. 1, 2007 in Seoul, Korea

APNHR Conference 2007: Transformations in Housing, Urban Life, and Urban Policy. Organised by the Korea Chapter of the Asia-Pacific Network for Housing Research (APNHR), the Korean Housing Association (KHA) and the Korea National Housing Corporation (KNHC). Contact: Conference Secretariat, Ryu, Jeong-Won, Researcher in Dep. of Architecture, Seoul National University, 39-513, Seoul National University, San 56-1 Shinlim-Dong, Kwanak-Gu, Seoul, Korea 151-742. Phone: (+82 2) 880 8869, Fax: (+82 2) 875 8483, <sec@apnhr2007.or.kr> [www.apnhr2007.or.kr/](http://www.apnhr2007.or.kr/)

### September 10 - 23, 2007 in Berlin, Germany

Asien-Pazifik-Wochen/ Asia-Pacific Weeks 2007. Contact: <post@asienskunde.de>, [www.APW-berlin.de](http://www.APW-berlin.de)

### October 11 - 13, 2007 in Gliwice, Poland

Workshop on Housing and Environmental Conditions in Post-Communist Countries, organised by Silesian University of Technology and the Housing Network of IAPS. Contact: <Beata.Komar@polsl.pk>

### Oct/Nov 2007 in Cottbus, Germany

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