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# INTEGRATING RISK REDUCTION, URBAN PLANNING AND HOUSING: LESSONS FROM EL SALVADOR

Christine Wamsler

## Abstract

*Increasingly, attention has been given to the need to mainstream risk reduction in development work in order to reduce the vulnerability of the urban poor. Using El Salvador as a case study, the paper analyses the mainstreaming process in the developmental disciplines of urban planning and housing. The overall aim is to identify how the existing separation between risk reduction, urban planning and housing can be overcome and integration achieved.*

*Since Hurricane Mitch in 1998, and especially after the 2001 earthquakes, not only relief and development organisations, but also social housing organisations have initiated a shift to include risk reduction in their fields of action in order to address the underlying causes of urban vulnerability. The factors that triggered the process were: 1) the negative experiences of organisations with non-integral projects, 2) the organisations' increased emphasis on working with municipal development, 3) political changes at national level, and more importantly, 4) the introduction and promotion of the concept of risk reduction by international and regional aid organisations. However, required additional knowledge and institutional capacities were mainly built up independently and internally by each organisation, and not through the creation of co-operative partnerships, thus duplicating efforts and increasing ineffective competition.*

*Whilst positive experience has been gained through the implementation of more integral projects, the creation of adequate operational, organisational, institutional and legal frameworks is still in its initial stage. Unfortunately, four years after the 2001 earthquakes, emergency relief funding for post-disaster risk reduction is coming to an end without the allocation of resources for following up and consolidating the initial process. Based on the findings, an integral model is proposed which shows how mainstreaming risk reduction in urban planning and housing could be dealt with in such a way that it becomes more integrated, inclusive and sustainable within a developmental context.*

**Keywords:** *Disasters, Risk Reduction, Urban Planning, Housing, El Salvador*

## 1. INTRODUCTION

El Salvador is the most densely populated country in Central America, which is one of the most disaster-prone regions in the world (e.g. LAVELL, 1994:49). The metropolitan area of San Salvador has been seriously damaged 14 times over the past three centuries (BOMMER, 1996:2). Two earthquakes struck El Salvador in 2001 damaging nearly 20 per cent of the nation's housing stock, resulting in more than 1,100 fatalities (UNDP/FUSAI, 2003:22). In 1998, Hurricane Mitch devastated the country leaving over 30,000 people homeless. During the same year, a severe drought destroyed 80 per cent of the country's crops, which resulted in a famine. In early October 2005 - within only one week - El Salvador was hit tragically by hurricane Stan, flooding, mudslides, an earthquake and the

llamatepec volcano eruption.<sup>1</sup>

The relatively high level of disaster risk marked its beginning in 1526 with the historic foundation of San Salvador in a seismic zone. The level of the country's disaster risk cannot be purely attributed to its geographical characteristics, its location, and the frequency and intensity of occurring natural hazards. It has its roots in a long history of political and socio-economic marginalisation of the majority of Salvadorans with an elite control of both urban and rural land (WISNER, 2002:8). In the 1970s, severe social inequalities, poor economic growth, and a repressive dictatorship led to a civil war that resulted in an estimated 75,000 fatalities. Since then, uncontrolled and accelerated urbanisation combined with the improper management of natural resources has increased the risk and occurrence of landslides, flooding and droughts.<sup>2</sup>

<sup>1</sup> See, for instance, <http://news.bbc.co.uk/2/hi/americas/4322442.stm>, accessed 8 October 2005, and <http://www.iht.com/articles/2005/10/08/america/web.flood.php>, accessed 9 October 2005.

<sup>2</sup> See, for instance, [http://socsci.colorado.edu/~parisr/PARIS\\_centamerica\\_Aug2002.pdf](http://socsci.colorado.edu/~parisr/PARIS_centamerica_Aug2002.pdf) or [http://www.mongabay.com/reference/country\\_studies/el-salvador/all.html](http://www.mongabay.com/reference/country_studies/el-salvador/all.html), accessed 10 June 2005.

The combination of political and economic crises, human-induced vulnerabilities, and natural hazards, leading to the internal displacement of hundreds of thousands of Salvadorans, has increased the disaster risk levels of the country. Manifestations of this situation can be found in the national housing deficit of more than half a million (UNDP/FUSAI, 2003:22), and the fact that more than 1.3 million people were living in slums in 2001 (UNITED NATIONS, 2005).

### Risk reduction in urban planning and housing

During recent years, attention has been increasingly given to the need to mainstream risk reduction in development work in order to reduce the vulnerabilities of the poor communities (e.g. UNDP, 2004; UNISDR, 2004).<sup>3</sup> The Millennium Declaration points towards this need by aiming to achieve a significant improvement in the quality of the lives of slum dwellers (MDG7, target 11); and the "Hyogo Framework for Action 2005-2015" urges governments to address the issue of disaster risk in their sector development planning and programmes (Section 4, paragraph 19).<sup>4</sup> Nevertheless, little research has been carried out in respect of how risk reduction can be mainstreamed in the developmental sectors of urban planning and housing.

The objective of this paper is to analyse the mainstreaming (or divergence) process in El Salvador, especially since Hurricane Mitch, with the aim of identifying how the existing separation between risk

reduction, urban planning and housing can be overcome and integration achieved. Lessons learned and information gained from this analysis will support the identification of ways to sustain and promote mainstreaming within a developmental context.

### Methodology and outline

The research was conducted between August 2004 and April 2005 including a field study in El Salvador. 11 social housing organisations, three relief organisations, and 19 development organisations were analysed.<sup>5</sup> Their names and acronyms are listed in the footnotes.<sup>6</sup> A total of 50 project managers was interviewed, and technical literature, project documents, and policies were reviewed. Furthermore, eight key projects were identified and visited. In this way single and group interviews were conducted with around 40 beneficiaries and operational project staff.<sup>7</sup>

The analysis of the mainstreaming process is addressed by filtering out developments and patterns of change within the four identified levels/spheres presented in sections 2 to 5: implemented projects, operational instruments, institutional and organisational structures, as well as national and municipal legislation. In section 6, the underlying drivers, the strengths and weaknesses of the process are discussed, and the potential for integrating risk reduction, urban planning and housing is identified. Finally, a model for comprehensive integration is proposed.

<sup>3</sup> See also Wamsler (2004; 2006).

<sup>4</sup> Hyogo Framework for Action 2005-2015, see <http://www.unisdr.org/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf>; Millennium Declaration and Millennium Development Goal (MDG) 7, target 11, see <http://www.undp.org/issd/sustdevmdg.htm>.

<sup>5</sup> The categorisation of the three types of organisations is based on the products and services they offer, as well as their main objectives (i.e. construction of social housing, development in general or emergency relief). Whilst social housing organisations can also be seen as development organisation, for the purpose of the paper, it was necessary to categorise them separately. Relief organisations are commonly also called humanitarian aid organisations or emergency organisations. The term "aid organisations" is used as an umbrella term for all three types of organisations.

<sup>6</sup> The financing and implementing organisations interviewed are (in alphabetical order): AMUVASAN (oficina de planificación de la Asociación de Municipios del Valle de San Andrés), CARE, CEPRODE (Centro de Protección para Desastres), CHF (Cooperative Housing Foundation International), COEN (Comité de Emergencia Nacional), COMURES (Cooperación de Municipalidades de El Salvador), FISDL (Fondo de Inversión Social para el desarrollo local), Fundación Habitat, Fundación Techo para un Hermano, FUNDASAL (Fundación Salvadoreña de Desarrollo y Vivienda Mínima), FUNDE (La Fundación Nacional para el Desarrollo), FUSAI (Fundación Salvadoreña de Apoyo Integral), GTZ (German Association for

Technical Cooperation), HFDI (Habitat for Humanity International), IDB (Inter-American Development Bank), MARN (Ministerio de Medio Ambiente y de Recursos Naturales), OFDA (Office of US Foreign Disaster Assistance), OPAMSS (Oficina de Planeación del Área Metropolitana de San Salvador), PAHO/WHO (Pan American Health Organization, regional office of the World Health Organization), PRISMA (Programa Salvadoreño de Investigación sobre desarrollo y medio ambiente), Red Cross, RTI (Research Triangle Institute), SNET (Servicio Nacional de Estudios Territoriales), the municipalities of Sacacoyo, Talnique, Santa Tecla, and San Salvador, UCA (University José Simeón Cañas; department of engineering and department of architecture), UNDP (United Nations Development Programme), VIMDU (Viceministerio de Vivienda y desarrollo urbano), World Geologists, and World Vision. These are the key organisations in the focus areas for the research (i.e. risk reduction, urban planning and housing), selected through snowball and purposeful sampling.

<sup>7</sup> The term "project" is used for all types of initiatives and programmes carried out by the analysed organisations. Four of the visited projects were implemented by social housing organisations (FUSAI and FUNDASAL); three projects by the development organisation CEPRODE, and one by the relief organisation Red Cross. These projects were selected for their information richness (i.e. the existence of a certain level of integration of risk reduction, urban planning and housing). The existence of such more integrated projects was also one of the criteria for selecting El Salvador as the study area.

## 2. IMPLEMENTED PROJECTS

Since Mitch, and especially after the 2001 earthquakes, nearly all the analysed organisations reconsidered the contents of their projects and partially adjusted them, thus opening up their disciplinary boundaries.<sup>8</sup> Whilst the adjustments have certainly varied between the organisations, specific patterns can be identified for social housing, relief and development organisations respectively.

### Projects of social housing organisations

After Mitch, most of the social housing organisations were involved only in short-term disaster recovery activities, returning to their normal work after the relief phase was over. However, following the 2001 earthquakes, a profound change was initiated within the implemented projects. The identified patterns of change were:

- a. Improvements of constructive and structural aspects
- b. Inclusion of institutional capacity building components for risk reduction<sup>9</sup>
- c. Inclusion of socio-economic development components for risk reduction
- d. Implementation of land use planning projects
- e. Creation of pilot projects for risk reduction

With the aim of reducing physical vulnerabilities, most of the social housing organisations re-evaluated and changed the construction and design used for their project houses, and started to give more importance to their environment (e.g. basic services and infrastructure). As many of the affected municipalities were not prepared for receiving and efficiently using financial assistance obtained for housing, institutional capacity building was further included as a component of new projects. Several social housing organisations such as CHF, FUNDASAL, and FUSAI have also started to combine employment generating activities within their housing projects in order to reduce the socio-economic vulnerabilities of the affected communities. Micro credits were partly offered, not only for housing, but also for micro enterprises, and educational activities were no longer exclusively focused on the con-

struction processes. Furthermore, due to the demand from municipalities, academic institutions were, for the first time, engaged in designing and implementing land use planning projects.<sup>10</sup>

CHF and FUSAI designed and implemented pilot projects for risk reduction. These were not linked to their housing projects, and focused on the establishment of emergency committees, capacity-building for risk reduction, the elaboration of local risk maps and the implementation of minor mitigation works.

After the relief phase, some social housing organisations started a process of mainstreaming risk reduction within their general pre-disaster housing projects. In order to do so, the definition of risk was broadened including themes such as urban violence and insecurity, traffic accidents, environmental contamination, drug abuse, and HIV/AIDS. FUSAI has initiated the process of integrating risk reduction and housing in a more systematic way by creating a pilot project based on a newly developed comprehensive planning matrix.

### Projects of relief organisations

Following hurricane Mitch, most of the relief organisations initiated a gradual change in their projects. The identified patterns of change were:

- a. Creation of pilot projects for risk reduction (focus: preparedness)
- b. Inclusion of land use planning components
- c. Implementation of permanent housing projects

A growing awareness that it was unsustainable to work only in short-term recovery led to the development of specialised projects for risk reduction. Project activities included the establishment of emergency committees, early warning systems, the elaboration of local risk maps and relief plans. Mitigation plans were established including land use maps and the identification and prioritisation of essential infrastructure work.

After the earthquakes, relief organisations started to work towards the implementation of permanent housing in order to reduce and address phys-

<sup>8</sup> The term "discipline" is used to describe specific branches/sectors of knowledge (i.e. risk reduction, urban planning and housing) that find their expression in different fields of action.

<sup>9</sup> For the paper, the Spanish term "gestión de riesgo" was translated as

"risk reduction".

<sup>10</sup> For example, the department of engineering and the department of architecture at the University José Simeón Cañas executed land use planning projects for Nejapa and Jiboa.

ical vulnerability both during and after disasters, whilst temporary housing was given less financial support. Even after the relief phase was over, the Red Cross continued to work in housing, initiating a pilot housing project in Morazán to promote the use of improved, traditional building materials for self-help housing and upgrading.

### Projects of development organisations

With the growing awareness that risk reduction was not only to be included in the aftermath of disasters, development organisations re-oriented their projects. Here, identified patterns of changes were:

- a. Creation of pilot projects for risk reduction
- b. Inclusion of land use planning components
- c. Creation of specialised georeferencing projects
- d. Implementation of housing projects for risk reduction

Pilot projects for risk reduction were implemented. With the increasing experiences in the elaboration of hazard maps, and the awareness of their use for broader risk analyses, World Vision, for instance, started to implement georeferencing projects with the idea of combining hazard maps with others related to food security, sanitation, infrastructure and adolescent criminality.

The interest of international organisations (IOs) and municipalities in land use planning increased significantly: Already by the 1990s, development organisations started to support municipalities in elaborating participative land use development plans. With the recent disasters, the integration of urban planning components was included as a continuation and enhancement of the ongoing work of the organisations involved in risk reduction (e.g. the establishment of land use plans, local decision-making groups for participative planning, municipal enactments for land use and register, and the design of access and emergency routes) (CEPRODE, 2003).

After the earthquakes, many development organisations worked increasingly and more specifically in housing because of the great need to reduce physical vulnerability. However, only few organisations subsequently fully integrated the con-

cept of risk reduction. REVIVES, a project by GTZ, combined reconstruction with the establishment of local committees for risk reduction. And PAHO/WHO developed a new comprehensive house prototype for reconstruction called VIVISAL.<sup>11</sup> An interesting case is CEPRODE which started to include housing within their projects for risk reduction, thereby using the construction of project houses - which was organised by established emergency committees - to further promote risk reduction (e.g. through mutual help).

### 3. OPERATIONAL INSTRUMENTS

In parallel to the changes of the projects' content, organisations partly adapted operational instruments for the proper implementation of the broadened and new projects.

#### Working approaches

In respect of methodological and organisational working approaches, three patterns of change were identified:

- a. Increased work at municipal level
- b. Increased focus on participation
- c. Changed provision of housing financing (subsidies)

In the 1990s, development organisations started to work at the municipal level. This was as a result of the adoption of the municipal code in 1986 and the peace agreements in 1992, which promoted decentralisation and thereby created the demand for an increased role of local governments. In the following, as a result of the occurrence of the recent disasters, social housing and relief organisations have undergone three shifts or changes. The first one was to focus on the municipal level. The second was to associate themselves directly with local governments. The third was to change from delivering services to encouraging and promoting more participatory and community-based work. This resulted, for instance, in improved municipal-national communication systems for disaster response, through the creation of better defined, participatory structures and use of adequate technical equipment (i.e. radios).

<sup>11</sup> See [http://www.paho.org/Spanish/DD/PIN/Numero16\\_articulo4\\_4.htm](http://www.paho.org/Spanish/DD/PIN/Numero16_articulo4_4.htm), accessed 15 March 2005.

Another trigger for the adoption of a new operational approach was the substantial drawbacks social housing organisations faced as a result of the free provision of housing constructed by relief and development organisations. Free provision generated a passive attitude among beneficiaries, who were no longer willing to contribute financially to the construction of their houses. Social housing organisations such as Fundación Habitat, HFDI, and FUSAI adopted a new approach that included the exclusive provision of housing through subsidies, as opposed to a system of combined credits and subsidies.

### Tools

New tools, which promote an increased integration of risk reduction, urban planning and/or housing were developed for the implementation of wider or new projects:

**Risk check-lists for improved housing quality control:** After the 2001 earthquakes, some social housing organisations, such as HFDI, developed specific check-lists for the evaluation of disaster risks in potential project areas. The lack of related laws, regulations and enforcement mechanisms, as well as increased requirements by IOs forced them to establish such check-lists.

**Risk maps/assessments:** As far back as 1992, WHO together with COEN and the Ministry of Health developed guidelines for the elaboration and application of local risk maps. However, most aid organisations and municipalities only started after the recent disasters to develop their own guidelines, and to use participative local hazard (and vulnerability) maps within their projects. These maps were, at first, merely a by-product of activities in local awareness-raising for risk reduction. However, by gaining increased experience in the process of their elaboration, together with the local interest in land use planning, hazard maps were improved, digitalised and used as an information basis for land use plans. Currently, organisations are searching for criteria and tools, with which to elaborate adequate vulnerability maps. In contrast, social housing organisations do not generally use local risk maps or land use plans within their housing projects. As a result of the Ministry of Environment's increasing control over construction permit applications after the 2001 earthquakes,

technical hazard assessments were only improved and extended geographically.

**Strategic framework for integral housing and risk reduction:** In 2004, the social housing organisation FUSAI developed a strategic framework for the elaboration of more integral projects. Housing is no longer viewed as the final or ultimate aim, but rather as a catalyst that, together with other activities, can achieve sustainable development goals. The framework includes progressive performance targets vis-à-vis the different components (e.g., land use planning, risk reduction and housing).

**Guidelines for integral land use planning and risk reduction:** In 2002/03, GTZ, together with VIVIDU, developed methodological guidelines for the development of municipal and land use development plans (GTZ, 2003a). This is the initial effort of aid organisations to combine land use planning and risk reduction, and to standardise related plans and maps.

**Establishment of risk indicators:** With the aim of creating a more quantitative instrument for policy decision-making, IDB is working together with SNET on the formulation of indicators for risk reduction. The integration of risk reduction, urban planning and housing is partly promoted by established indicators (e.g., indicator RR1: The integration of risks in land use and urban planning; RR4: Housing improvement and relocation of disaster-prone settlements) (IDB, 2004:17).

## 4. INSTITUTIONAL AND ORGANISATIONAL STRUCTURES

With the aim of effectively implementing the broadened new projects and institutionalising the integration of risk reduction, urban planning and/or housing, some organisations have adapted their internal organisational structures, and developed new, institutional and co-operative channels. Furthermore, new organisations were created.

### Internal structures and new organisations

By looking at the institutional structures of the analysed organisations, the following patterns of change were identified:

- a. Broadening of departments' activities (mandates)

- b. Integration of risk reduction in the strategic plans of organisations
- c. New departments for construction quality control
- d. New organisations, departments and commissions for risk reduction
- e. Creation of focal points for risk reduction
- f. Increased inter-departmental co-ordination

In most analysed organisations, the integration of risk reduction, urban planning and housing was only made possible through the broadening of the field of activities of existing departments in respect of the issues of relief, development or social housing. Only a few departments have changed their mandate. However, for the first time several organisations included risk reduction in their strategic plans, action plans and co-operative frameworks. This precedent also permitted them to continue their support of risk reduction within a pre-disaster context. For the same reason, the relief organisation OFDA also created a new programme for technical assistance.

Following the 2001 earthquakes, organisations, such as HFDI and FISDL, established new departments for construction quality control in order to systematically revise structural designs and normative aspects of their construction work. New departments and/or commissions for the promotion of risk reduction were created within relief and development organisations such as the Red Cross, Care, FISDL, COMURES and some municipalities.<sup>12</sup> In 2001, UNDP supported the establishment of SNET, a department for territorial studies and risk reduction, within the Ministry of Environment (MARN). It includes a specialised unit for risk reduction with the focus on the enhancement of hazard knowledge. Other organisations created focal points for risk reduction, being composed of specialised staffs, who have the task of transforming risk reduction in a cross-cutting topic.

The elaboration of more integrated projects caused the different departments to move closer together and even merge. Within FUSAI, the

department for local development, established in 1998, recently merged with the department for habitat to become the single "department for local development and housing".

Not only were changes within organisations made, but new organisations were also established. The creation of two new organisations, which was financially supported by some IOs, was critical for the promotion of risk reduction: At regional level, the Co-ordination Centre for Natural Disaster Prevention in Central America (CEPRENAC) was established in 1995, and at national level, MARN was created in 1997. The creation of MARN was important because it became the host organisation of SNET in 2001. Whilst new structures for risk reduction were established, the importance of organisations in the field of urban planning and housing has decreased since the 1980s due to structural adjustment supported by international financing institutions. However, to a certain extent, the recent disasters again highlighted their importance.

### Institutional cooperation

Another set of patterns of change was identified in relation to the co-operation between different organisations:

- a. Inter-institutional capacity building
- b. Creation of new networks for risk reduction
- c. New project alliances and counterparts

Since 1992, the regional network "La Red" has been one of the cornerstones for the promotion of risk reduction in Central America.<sup>13</sup> In El Salvador, only in respect of the 2001 earthquakes "La Red" together with international and national organisations started to actively organise a range of related forums and seminars as well as consultancies at national and municipal level. IOs further established two networks for risk reduction.<sup>14</sup> However, only a few organisations co-operated temporarily in the implementation of joint projects<sup>15</sup>, and a poor exchange of information (e.g. data and maps) was identified.

<sup>12</sup> At a municipal level, a range of different committees was established (e.g. for emergency relief, mitigation, environment, or risk reduction) which, in 2004, were mostly inactive. After the 2001 earthquakes, only a few municipalities, such as that of Santa Tecla, created departments to promote operational and technical risk reduction.

<sup>13</sup> "La Red de Estudios Sociales en Prevención de Desastres en América Latina". Please see <http://www.desenredando.org/>. In respect of El Salvador, an important publication from 1996 is called

"De terremotos, derrumbes e inundados".

<sup>14</sup> One network was promoted by OFDA, the other one by Oxfam ("Red de Iniciativa para la Gestión de Riesgo" and "Mesa Nacional permanente en Gestión de Riesgo") (GTZ 2002:14-15).

<sup>15</sup> An exception is an ongoing further education course for risk reduction, which was created in co-operation between the social housing organisation FUSAI and the development organisations FUNDE.

Required knowledge of relief and development organisations regarding housing construction was mainly built up by hiring architects or engineers as part of the staff team, as well as learning-by-doing from other professionals. In fact, PAHO/WHO developed the above-mentioned house prototype VIVISAL without co-operating with or consulting social housing organisations.

## 5. NATIONAL AND MUNICIPAL LEGISLATION

Important policy developments can be identified since the 2001 earthquakes. Legislation related to urban planning and housing has altered as follows:

- a. Updating of laws and regulations for construction and urban planning
- b. Integration of risk reduction in the national housing policy
- c. Integration of risk reduction in the draft policy for land use planning
- d. Change of governmental housing finance
- e. Integration of risk reduction in municipal land use plans and related enactments

Legislation for urban planning and housing was enacted before the first disaster-related laws and policies came into effect. In 1956, the first law for urban planning and construction was adopted which was updated after the 2001 earthquakes. The 1986 earthquake had provoked the establishment of a seismic code, which currently requires revision. After Mitch, the national policy for housing adopted in 1999 addressed, for the first time, the management of environmental risks.<sup>16</sup> Between 2001 and 2004, the first draft policy for land use planning was developed in co-ordination between VIVIDU and MARN/SNET. Risk reduction is included as one out of the six sub-programmes of its national territorial/land use plan. The criticism of the draft policy is based, amongst others, on the policy's centralised character, non-participative elaboration, restricted focus on natural hazards, and its disputed proposal of establishing an additional legal and institutional system for risk reduction (GTZ, 2003b:38).

As a consequence of the 2001 earthquakes, governmental housing subsidies were opened up to population groups earning up to four (formerly two) minimum salaries; and in 2003, national subsidies were completely cut for around two years, thus decreasing the available funds for the poorest people. At municipal level, enactments, which partly included risk reduction, were adopted.

The developments of legislation related to disaster management and risk reduction, in particular, were:

- a. New draft laws for risk reduction
- b. Proposals of policies for risk reduction

Disaster-related legislation dates back to 1976, when the Law for Civil Defence came into effect. After Mitch, COEN presented a new bill for relief and civil protection against natural disasters. A number of NGOs heavily criticised this bill as being based on a military and centralised vision. In response, UNES presented an alternative bill which was based on decentralisation (GTZ, 2003b:17). In a joint effort, COEN and UNES presented, in 2002, a third bill for prevention and mitigation. Criticism came this time from MARN/SNET which demanded its technical and juridical revision, arguing that the bill was focused solely on emergency management, but should, in fact, be elaborated as an integral part of the land use planning policy (GTZ, 2002:6-9; GTZ, 2003b:33). Since 2001, different organisations developed guidelines for policies for risk reduction, but without clearly determining the roles and responsibilities of national and municipal stakeholders.

## 6. LESSONS AND CONCLUSIONS

The foregoing analysis shows that since the 2001 earthquakes, a range of remarkable changes in aspects related to risk reduction, urban planning and housing have taken place in El Salvador. The underlying drivers, strengths and weaknesses of the described developments, as well as the potentialities for integration, are presented in the following sections.

<sup>16</sup> The policy is not recognised by national NGOs as its elaboration was carried out without their active involvement/participation.

## Need for integration

The occurrence of the recent disasters has triggered an increased awareness in organisations regarding the correlation between risk reduction, urban planning and housing, as well as the need for their integration for sustainable urban poverty reduction. Beneficiaries of more integral projects which have been implemented since Mitch considered them as more successful than former ones, which, as they stated, resulted in increased vulnerabilities (e.g. resettlement projects leaving them economically more vulnerable; construction of dry compost latrines together with the use of wood ash, resulting in increased occurrence of landslides and contamination due to excessive soil perforation, deforestation and the premature deposit of excrement on the slopes). The success of more integral projects was substantiated by Providencia, a community in San Salvador, where human and material losses after the 2001 earthquakes, were comparatively small.<sup>17</sup>

## Missing links for integration

The study shows that the mainstreaming process was not only a one-way one in respect of the issue of integration of risk reduction in the work of social housing organisations. Unexpectedly, a mutual integration of the three disciplines risk reduction, urban planning and housing was identified within the work of social housing, relief and development organisations. This provoked increased competition (see figure 1).

The progressive overlapping of disciplines led, on the one hand, to more integral projects with different entry points, but, on the other hand, to partly similar activities and final outcomes. Different alternatives for the step by step integration of the three disciplines in question could be determined (see table 1). Thereby, the concept of risk reduction has been identified as steering towards and promoting urban planning and housing activities. For instance, with the implementation of risk reduction activities, communities had the opportunity to legalise their land, and the elaboration of risk maps led to the work in land use planning and enactments for housing constructions. On the other

hand, housing, itself, proved to have the potential to further promote risk reduction. Mutual help for the construction of houses in the urban community Providencia resulted in the reconciliation of hostile groups (i.e. youth gangs), thus improving activities in respect of risk reduction and reducing violence. Unfortunately, organisations focusing on housing did not generally connect their housing activities with land use planning, thus the projects' full risk reduction potential was not fulfilled.

## Competition instead of cooperation

The mutual and progressive integration (as shown in figure 1 and table 1) was not achieved by increased inter-institutional co-operation. Since the 2001 earthquakes, competition between organisations deepened, resulting in the duplication of small-scale efforts and higher investment costs. Established alliances were mostly of a temporary nature, and additional knowledge and capacities, which were needed by the organisations to initiate a shift towards integrating risk reduction, urban planning and housing, were mainly built up independently and internally (e.g. through the use of short-term consultants). Only a few projects were implemented jointly, and organisations were seen as being reluctant to exchange relevant information. National-municipal competition was felt by municipalities such as Santa Tecla, one of the areas most severely affected by the 2001 earthquakes, which had difficulties in obtaining required data from national organisations. At the municipal level, competition resulted in a vast number of non-compatible or duplicated plans and maps for relief, reconstruction, mitigation, development, and land use planning.

Competition was partly provoked by IOs through the promotion of different concepts of risk reduction. Two separate networks for risk reduction were established, splitting the organisations working in El Salvador into two competing groups. Competition further relates to the inherent differences between social housing, relief and development organisations (e.g. different objectives, target groups, working principles and concepts).<sup>18</sup> Compared to others, social housing organisations

<sup>17</sup> The project in Providencia was implemented by CEPRODE. The statement is based on interviews conducted with the beneficiaries of the project.

<sup>18</sup> Interviewees working in risk reduction including housing and infrastructure criticised, for instance, those NGOs focused on housing and infrastructure as not being able to reach the poorest groups as a result of their working approach.



Fig 1. Process of mainstreaming risk reduction in El Salvador. RR = Risk reduction, H = Housing, P = Urban Planning.

seem to have built up more lasting alliances aided by the fact that these alliances provided them with further access to financial resources.

### Unsustainable and unilateral finance

The influence of financial support from IOs in promoting risk reduction started in the early 1990s when regional organisations and networks for risk reduction were established in Central America. After the 2001 earthquakes, IOs promoted and financially supported risk reduction as a new and autonomous field of work to be integrated mainly in project implementation. This resulted in the creation of new projects or components for risk reduction which were added temporarily, but were not adequately linked to the organisations' general work. Thus, more inclusive integration was not pushed forward by IOs, and a divergence process can already be identified.

Apart from the changes at project level, alterations of internal organisational structures were often identified as adding on risk reduction as a

new and separate structure, without being adequately integrated and/or consolidated.<sup>19</sup> Today - compared to the relief phase after the 2001 earthquakes - departments or focal points for risk reduction are of little importance and have only a few staff remaining in them.

When it comes to national and municipal legislation, international organisations partly financed the revision and adaptation of existing legal frameworks. National draft laws and policies including risk reduction were proposed but have not been adopted. In addition, there is obsolescence, non-compliance, and non-enforcement of existing housing and urban planning regulations. The lack of adequate legal frameworks and their application in the local context - particularly in informal settlements - is a key barrier to promoting further integration. This situation can be attributed to the competition and power games of different governmental organisations, the lack of participative and consensus-based approaches in the development, enforcement and monitoring of laws and policies,

Table 1. Identified entry points and steps followed by different stakeholders to integrate risk reduction, urban planning and housing

STAKEHOLDERS	STEP 1 (= ENTRY POINT)	STEP 2	STEP 3	STEP 4
Mainly relief, but also social housing and development organisations	Risk Reduction (mainly Preparedness)	a) Infrastructure b) Land use planning	a) Land use planning b) Infrastructure	Housing
Mainly development, but also academic social housing organisations	Land use planning	Risk reduction	Infrastructure	Housing
Mainly social housing, but also relief and development organisations	Housing	a) Risk reduction b) Infrastructure	a) Infrastructure / b) Risk Reduction	—
Social housing organisations	Upgrading (housing and infrastructure)	Risk reduction	—	—

<sup>19</sup> For example, the new departments for risk reduction were not connected to the departments for urban planning or housing. In Santa Tecla, within an established GIS unit in 2001, the three sections of risk reduction, land register, and urban planning were designed to work completely separately.

as well as the shortage of the necessary financial resources.

Four years after the earthquakes in El Salvador, international relief funding for post-disaster risk reduction is now coming to an end. This leaves the recently initiated process halfway and far from achieving and completing an inclusive and consolidated integration of risk reduction, urban planning and housing. In this sense, the concept of "risk reduction" in El Salvador resembles other buzz words ("gender" in the early 1990s, and "environment" in the mid-1990s) or the current top priority theme of: "urban violence and insecurity", which is currently pushed by the IOs. However, whilst the concepts of gender, environment, urban violence and insecurity were introduced through development co-operation resources, risk reduction was, to a large extent, promoted by international disaster relief funds which have a short term perspective.<sup>20</sup>

Despite the mentioned pitfalls, in the case of social housing organisations, a potential for a more lasting change towards integral projects together with participative work at municipal level is identifiable. The initiated changes were not only based on the occurrence of the recent disasters and the (financial) push of international and regional organisations for risk reduction. Two financial factors at national level influenced the opening-up of their disciplinary boundaries. Firstly, most of the social housing organisations had to respond to damages caused to some of their former housing projects. To avoid a loss of market credibility, social housing organisations faced financial losses because of the necessary repairs that they had to carry out. This led to an increased awareness about the shortcomings of a purely physical/constructive approach and the need for more integral and participatory approaches closely connected to local development. Secondly, due to the changed governmental housing subsidies after the 2001 earthquakes, social housing organisations were suddenly deprived of their main financial source. The scope of their projects was broadened in order to tap into municipal budgets, national funds provided by FISDL, as well as international resources.

### **Risk maps: lost link for integration**

Postulating that the starting point for reducing disaster risk lies in the knowledge of existing hazards and related vulnerabilities, the Hyogo Framework for Action calls for the development, updating and dissemination of risk maps and related information in an appropriate format (Section 2, i (a)).

In El Salvador, for many organisations, the crosslink between risk reduction, urban planning and housing - as shown in table 1 - did not become apparent until the continuous development of risk maps took place. To use the elaboration of risk maps as an effective platform to further sustain integration, several barriers will require to be overcome. Almost every organisation uses different methods and approaches to elaborate risk maps, thus hampering their compatibility and use for land use planning. Differences exist regarding empirical survey methods, scales, technical tools (GPS, aerial photographs, soil analyses, etc.), and content (natural and anthropogenic hazards, etc.). In addition, digitalised maps have, in the main, been prepared by external consultants over a very short period of time. Thus, they lack regular updating, dissemination, participation and even basic knowledge, which is available at local, municipal or national level.<sup>21</sup> Furthermore, despite the fact that local hand-made maps are considered to be more updated than the digitalised ones, the former have been, for the most part, excluded from land use planning. In fact, the correlation between maps for land use planning (seen, for instance, as a technical analysis to stop or attract investors) and municipal risk maps (based on peoples' daily lives) is hardly recognised by operational project staff. Furthermore, social housing organisations do not generally link local risk maps or land use planning with their work in housing.

### **Land use planning policies: lost potential for integration**

Despite the pitfalls of the existing legal frameworks for relief, urban planning and housing, the draft policy for land use planning could be an important advancement for integrating urban planning, hous-

<sup>20</sup> Consequently, while gender and environment analyses are, nowadays, often required by bilateral and international organisations to be included in project applications, little effort is made to include disaster/risk reduction analyses.

<sup>21</sup> Within a Red Cross project, hazard maps for landslides were devel-

oped which provided less details and information than an already existing map from 1974 which was elaborated by the investigation centre for geological technology and in collaboration with the German Co-operation. The information is based on an interview with Carlos Umaña Cerna.

ing and risk reduction, if the obstacles in the path of its enactment can be overcome. The acceptance of such policies as tools for better integration can be increased if they are participatory, include all types of hazards as well as related vulnerabilities, and provide more flexibility. Improved effectiveness can be achieved if risk reduction is not an add-on programme, and national and municipal budgets for risk reduction are included explicitly in the policy's investment plan. In this context, it is crucial to define clearly the responsible implementation organisations and legal frameworks at all levels, thereby complementing already existing legal and institutional structures.

In contrast to the draft policy for land use planning, some of the municipal land use plans include risk reduction in a more cross-cutting way. Here, political and financial restrictions have to be overcome in order to effect its adequate implementation.

## 7. RECOMMENDATIONS

On the basis of the research conducted, and the subsequent lessons and conclusions drawn, the question that poses itself is how mainstreaming risk reduction in urban planning and housing could be made more inclusive and sustained within a developmental context. Whilst a series of important changes has been carried out in the work of social housing organisations since the 2001 earthquakes, there are many uncertainties as regards how the gained experiences can be included within the organisations' usual work. Two main recommendations to overcome the shortcomings highlighted in the preceding discussion are presented as follows:

Firstly, a comprehensive and organisational model is proposed, which shows how risk reduction, urban planning and housing can be integrated in a co-ordinated, complementary and compatible way (see table 2). Integration should be based on the idea of creating synergy between different

Table 2. Proposed organisational model for integrating risk reduction, urban planning and housing

OPERATIONAL INSTRUMENTS/ IMPLEMENTED ACTIVITIES Creation of synergies instead of competition through unification and differentiation respectively		EMERGENCY RELIEF/ RISK REDUCTION	DEVELOPMENT	
			URBAN PLANNING	HOUSING
<b>1) Implementing structure</b>	Establishment of and work through a unified structure	Municipal committees for local development planning as well as its sub-committees for risk reduction Political and operational focal points for project implementation		
	Establishment of and work through complementary and cooperative sub-committees	Municipal and local committee for emergency management	Municipal and local committee for project implementation	Municipal committee for reconstruction and local commissions for project implementation
<b>2) Maps</b>	Unified maps	Unified and specified methods, scales and contents for the same type of maps (based on standardisation of the concept of risks reduction between different organisations)		
	Compatible and complementary maps through consideration of existing maps and establishment of new project-related maps (different scales and contents)	Municipal, regional and national digitalised hazard maps, as well as risk maps for disaster response	Municipal, regional and national digitalised vulnerability analyses and risk maps for mitigation and prevention as well as territorial land use maps	Local maps/analyses of hazards, vulnerabilities and risks of the project areas as well as maps/strategies for land use of the respective area.
<b>3) Plans and legal frameworks</b>	Establishment of and work in accordance with a unified municipal plan	Municipal development plan which unifies different sub-plans (based on standardisation of the concept of risks reduction between different organisations, unified and specified methods and contents). Development and enactment of related municipal legal frameworks		
	Compatible and complementary plans and legal frameworks	Municipal and inter-municipal emergency plans, laws and policies	Municipal and inter-municipal land use plans, laws and policies	Local land use plans, municipal reconstruction plans, laws and policies
<b>4) Project components</b>	Inclusion of more comprehensive project activities for risk reduction	Project-related educational and socio-economic components for institutional and community capacity building as well as socio-economic development for risk reduction		
	Different additional and complementary project activities	Early warning Establishment of communication structures for emergencies Capacity building for emergency response and preparedness Etc.	Infrastructure and basic services Capacity building and building-up of "infrastructure" for planning and land register (cadastral register) Etc.	Housing Local infrastructure and basic services Capacity building for secure housing and project management Etc.

organisations instead of duplicating efforts. In a post-disaster context, the described model has the potential to harmonise the transition from relief to development. Co-ordination between the work of social housing, relief and development organisations can be achieved by: 1) working with unified implementation structures (e.g. municipal committees for local development along with political and operational focal points for project implementation), 2) the standardisation and unification of methods, scales and contents for the development of specific maps and plans, 3) the standardisation and adjustment of the concept of risk reduction in the different organisations, and 4) the co-ordinated inclusion of activities for capacity building and socio-economic development for risk reduction. Complementation and compatibility can be achieved by: 1) working through different municipal/local commissions (e.g. for relief, risk reduction, project implementation), 2) the development of compatible products and services, such as maps and plans with different contents and scales, and 3) the implementation of additional sector-specific activities. Furthermore, if risk reduction should become an inclusive and integral part of housing projects, the link with risk mapping and land use planning is crucial (see also figure 2).

On the basis of the presented model, it is recommended that the integration of risk reduction is

promoted in specified key aspects of urban planning and housing through the development of specific tools (e.g. the establishment of criteria of how to include risk reduction in land use planning policies). The described model can - once established - help to use resources more efficiently. However, its establishment would probably require co-operation resources.

Secondly, in this context it is suggested that it is not only emergency relief, but primarily development resources, which need to be allocated in order to push forward the integration of risk reduction into urban planning and housing. It is, therefore, not only important to use financial incentives to promote integration in project implementation. It is equally crucial to promote integration in national and municipal legislation, as well as operational instruments and institutional/organisational structures of social housing organisations (see figure 2). This includes municipal and national agencies and also implementing aid organisations. Financing requires the channelling of resources to encourage changes in integral structures, without the addition of separate ones.

The next stage of this research will focus on developing an operational framework with performance targets to be utilised as a tool for providing guidance for integrating risk reduction in social housing organisations' work.

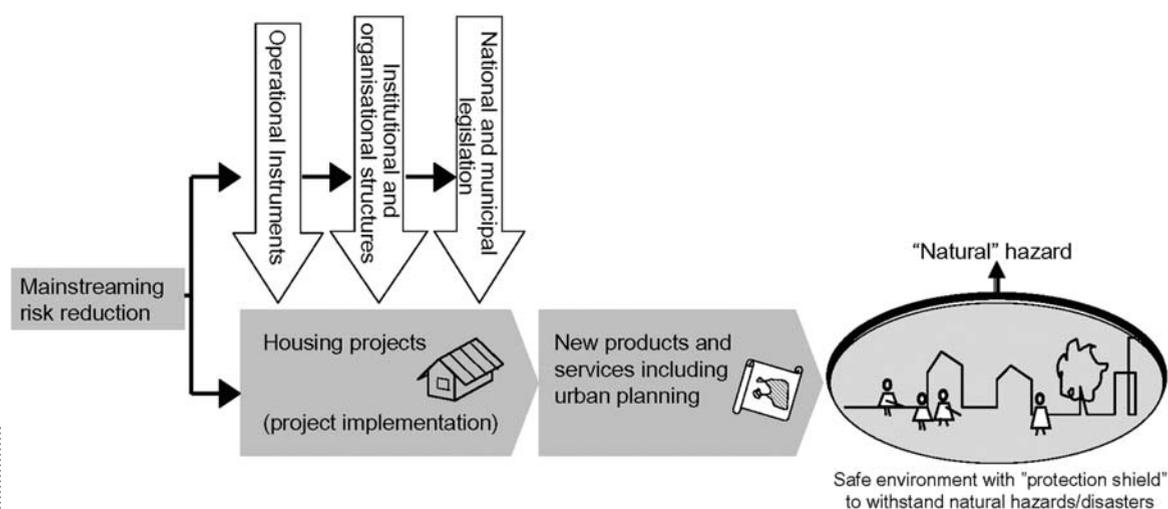


Fig 2. Suggested change from a unilateral to a more multilateral process of mainstreaming risk reduction at national and municipal/local levels, as well as in the work of social housing organisations (at four identified levels/spheres), leading to the inclusion of urban planning.

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