

# A PEOPLE-CENTRED APPROACH TO DISASTER RISK REDUCTION

## Abstract

One of the main innovations which has emerged in international strategy for disaster risk reduction (DRR) in recent decades is the growing attention to the role of communities in the risk management cycle. This new concern creates a bridge with landscape policies which recognize the active role of communities in shaping their own surroundings. This paper explores the new role of people in DRR and how the new approach could be reinforced and implemented with the support of landscape policies.

**Keywords:** disaster risk reduction, landscape, communities

## Disasters seen as the failure of social systems

The notion that disasters are related to hazard sources as well as to other characteristics of a society dates back to the 1970s with Barry Turner's pioneering work on man-made disaster [1]. In his work Turner analysed a large number of technological disasters, focusing on their pre-conditions and relationships within the organisational system to which they belonged. His analysis suggested that technological disasters are a consequence of technical faults, as well as the failure of social systems made up by technical, social, organisational and institutional factors [2]. Application of this view to studies of natural disasters has been facilitated by acceptance of the paradigm of sustainability, introduced in 1987 [3]. Disaster resilience has thus been recognized as part of the process to build a sustainable community, i.e. one that provides a high quality of life for current and future generations [4]. In this way, the risk of natural disasters is fundamentally linked to environmental problems as well as to socio-economic development patterns, essential for sustainable development [5]. A turning point towards a new understanding of risk was the designation of the 1990s as the United Nations International Decade for Natural Disaster Reduction (UN-IDNDR). Among the important results achieved by IDNDR was a shift from a culture of reaction to one of prevention, and the forging of vital links amongst different sectors of society. In 1994, IDNDR organised the First World Conference on Natural Disaster Reduction where the Yokohama Strategy and Plan of Action for a Safer World [7] was conceived. This document, focusing on the importance of socio-economic vulnerability in disaster risk analysis,

emphasised the crucial role of human action in reducing the vulnerability of societies to natural hazards and related technological and environmental disasters. The very mind-set that many natural hazards, such as extreme meteorological events, earthquakes, tsunamis and volcanic eruptions, will never be eliminated from our lives underscores the importance of strategies designed to reduce our vulnerability [6]. This has led to the development of approaches that look beyond the hazard and resulting emergency, and onto risk management [7], including such aspects as:

- assessment, prevention, mitigation and monitoring prior to a hazardous event;
- early warning systems and emergency preparedness during an event;
- recovery and reconstruction following a disaster, leading towards raising the resilience of communities to future extreme events.

When IDNDR came to an end in 1999, a successor body was created to carry on its work: the International Strategy for Disaster Reduction (ISDR). ISDR focused on the link between hazard sources and elements of the human environment, stating that "vulnerability to disasters is a function of human action and behaviour. (...) It is determined by a combination of several factors, including awareness of hazard, the condition of human settlements and infrastructure, public policy and administration, the wealth of a given society and organized abilities in all fields of disaster and risk management" [8]. Since risk mitigation and prevention should thus involve both hazard (when possible) and vulnerability reduction, it is of concern to all sectors of society [9]. It should include actions that range from choosing suitable land uses to strategies for poverty reduction; from setting up legal frameworks on risk management to developing skills in emergency planning. However, while greater concern about society is expressed in the above documents, communities still play a mainly passive role of being recipients of risk management policies.

The first shift in disaster reduction policies towards a more people-centred approach dates from 2005, when ISDR promoted another World Conference on Disaster Reduction at which the Hyogo Framework for Action (HFA) was adopted. HFA outlined a strategic and systematic approach to reduce hazard vulnerability and risk based on three main features: *a)* an interconnected process for DRR; *b)* a comprehensive approach and *c)* a community-based strategy [10].

The Framework proposed a newly integrated and multi-risk pattern of risk management seen as an interconnected sequence of risk reduction activities—beginning with assessment, followed by prevention and mitigation, preparedness and emergency response and concluding with rehabilitation and reconstruction following a disaster [11]. Along the process, feedback loops were suggested that focused on reinforcement and the new role of monitoring with the twofold role of tracking the evolution of hazards in order to design early warning systems and following the progress of risk reduction efforts aimed at prevention and mitigation measures. This integrated approach involves the engagement of all branches of knowledge that affect land use policies; the call for breaking down barriers is urgent since the approach promoted is multi-risk and multi-sectoral. Indeed, total accomplishment of risk prevention, with complete removal of existing hazards, is unrealistic. A more practical path should thus involve risk mitigation in attempts to reduce key aspects of vulnerability and exposure. Thus strategies towards risk prevention and mitigation suggested were largely based on policies dealing with the following: regional organisation and land use management, reinforcement of the socio-economic fabric, the struggle against inequality and poverty, and setting up an adequate legal framework connected with funding resources to implement risk reduction. This meant managing risk with a comprehensive approach involving all sectors of society, from scientific research to education, from business to healthcare, and from national to local governments and communities. This theme has been revisited and reinforced by the new Sendai Framework for Action [12], which clearly underlines the need for a broader and more people-centred preventive approach to disaster risk. "Disaster risk reduction practices need to be multi-hazard and multisectoral, inclusive and accessible in order to be efficient and effective. [...] Governments should engage with relevant stakeholders, including women, children and youth, persons with disabilities, poor people, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards".

## The landscape approach and the DRR strategy

The concept of landscape has been developing in the course of time, acquiring several

meanings: first, identified with historical gardens and panoramic places of exceptional beauty; next, tied with environmental issues; and finally acquiring a new holistic meaning comprising all relationships characterising a landscape in the definition developed by the European Landscape Convention (ELC) in 2000. Under the European Landscape Convention relationships between people and nature are seen as the basis to understand and conceive landscapes [13]. The active role of people in shaping landscapes is stressed by the convention: communities through their actions and interactions with natural systems define landscapes and implicitly give form to them, expressing their own way of perceiving and living their surroundings. Furthermore, by connecting the meaning of landscape to people's perception thereof, the Convention promotes a new cultural approach that recognizes the importance of every form of perception and highlights the role of immaterial and symbolic values.

In defining the scope, it is specified that the convention that the term "landscape" applies to all parts of a country's territory and "concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes" (Art. 2), thereby freeing the concept of landscape from that of beauty and quality.

The value of this conceptual extension operated by ELC lies in its many implications, such as recognition of the need for widely occurring quality as the fundamental prerequisite for the protection and enhancement of all landscapes, not only outstanding examples but also ordinary or degraded landscapes [14]. The latter are the landscapes on which we need to focus because, "outstanding" landscapes, being subjected to forms of legal constraint and protection, are nevertheless safeguarded and subject to attention and maintenance, while "ordinary" landscapes are often neglected and easily become subject to unsustainable practices, partly due to the scant attention paid to such landscapes and the low consideration of their relative values.

If attention to quality enhancement and maintenance is not lent to the whole area, forms of misuse and overexploitation with the consequent impairment of environmental balance could have a free hand. After all, such factors, together with lack of upkeep and environmental degradation, are among the main triggers of natural hazards. Disasters, foretold to a greater or lesser extent, often reflect the image of devastation and irreversible changes perpetrated upon the everyday landscape. Such events are largely the evident outcome of the lack of a proper notion of landscape and expression of low awareness of the values it holds. The landscape approach frames each object within a system of complex relationships with the surroundings. In this perspective, landscape is characterised by its semantic breadth through which new interpretations and new points of view regarding traditional problems may be proposed. Such breadth of meanings represents both the limit and strength of this concept. The limit manifests itself in the difficulty of a synthesis between different meanings and interpretations proposed by different disciplines. Its strength is given by the role that

the study of the landscape can assume today in pooling knowledge, in joining up the paths implemented by the various disciplines involved in landscape studies. Hence the study of the landscape represents one of the most engaging challenges in the construction of contemporary thought. While, according to Giedion [15], our culture resembles an orchestra where the instruments are already ready and tuned, but in which each musician is separated by an insulating wall from his or her colleagues, the theme of the landscape arises as a possible opportunity to permeate the barriers that over time have come to be defined between the different branches of specialist knowledge. This need to bring together different sectoral approaches represents one of the main points of convergence between the landscape approach and risk theory, and the multi-relational approach envisaged by landscape theory could represent a reference pattern for risk analysis.

The main aspects of the landscape approach that directly meet the strategy of disaster risk reduction set up through international cooperation and that could contribute to reinforce and expand its implementation may be listed as follows: a community-centred approach, attention to material and immaterial values as key elements in the relationship between people and their place of residence, a strong focus on ordinary and degraded landscapes, and the breaking down of barriers between disciplines.

#### **A people-centred approach to DRR**

The new people-centred approach that lends more effectiveness to DRR strategies hinges on the following four tenets:

- Communities have a key role to play in disaster risk mitigation;
- Social cohesion and solidarity are the building blocks of community resilience;
- Inclusion makes communities less vulnerable;
- A sense of community must be conserved after disasters.

#### ***Communities have a key role to play in disaster risk mitigation***

Communities could acquire a key new role in disaster risk mitigation. DRR strategies have to be tailored to a community's main characteristics in order to consider people's specific needs. The ability of people to cope with risk depends on many factors, comprising state of health, poverty, age and gender. Such factors affect people's ability to set up home in safe places, to take care of their surroundings, to have risk awareness, to reach safe havens and follow the recommendations of emergency plans and so on. This should be taken into account in action plans.

All over the world communities are changing. Demographically speaking, the world appears to be divided in two: the population in wealthier countries is prone to ageing while developing countries show a preponderance of children and young people (see the statistical data on population by age group in [www.geohive.com](http://www.geohive.com)). Furthermore, recent years have seen an increase in migration from poorer to more affluent countries. New arrivals do not always mix well with long-established inhabitants in the host country: it is not always

easy to cohabit and share structures and services, and sometimes the lack of integration generates what could be described as parallel communities living in the same area but in separate spaces, using different facilities and practising different habits and customs. The landscape approach underlines the fact that different communities with diverse cultures have different ways of using space and relating to environmental resources. In order to enhance social and environmental vulnerability assessment, it is important to understand the ways in which each community is affected by risk and could contribute to resilience since each social grouping is vulnerable in a different way and needs to be supported with different measures. At the same time each community could contribute differently to disaster risk reduction, for example by maintaining elements at risk, monitoring hazards, increasing risk awareness, developing local knowledge and so forth.

Risk information and communication needs to be tailored to different social groups with different languages and understanding. Disaster recovery should be suitable for accommodating people with different needs, satisfying those of vulnerable people. A more focused approach on the vulnerable is required, inclusive of the poor, the disabled, elderly, sick, minorities, children, migrants and indigenous populations. The above categories are more likely to be severely affected by disasters since they may have least awareness of hazards and little ability to respond to them [16], [17].

#### ***Social cohesion and solidarity are the building blocks of community resilience***

Communities also play an active role in enhancing hazard resilience, defined as "the capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure"[9]. Enhancing resilience needs community cohesion, solidarity, public awareness of risks and diversified economic resources [18]. Social degradation breaks that relationship between people and their surroundings, which is the very basis of landscape care and increases vulnerability of communities to disaster since the poor are often unaware of hazards.

A healthy and living landscape ensures a resilient community. Lack of awareness and poverty lead people to locate in precarious and vulnerable settlements. Informal human settlements constructed outside legal development processes are frequently inadequate to face natural hazards and in some cases are built without any awareness of local hazard conditions. Furthermore, if the economy is based on the exploitation of one or few resources, the loss of such resources due to a natural disaster could deal a fatal blow to community life from which it could be impossible to recover. HFA has already identified this problem and stressed the importance of diversified income options for populations.

In general, poverty reduction, food security, landscape care and disaster risk reduction have to be considered mutually supporting objectives.

### ***Inclusion makes communities less vulnerable***

Cultural and social features underpin resilience and each segment of the population with its unique perspective can lend its contribution to understanding risk perception and the unique needs of a population living in a vulnerable setting, how to raise their awareness and predict their needs in emergencies. It is essential to tailor awareness and risk reduction education to the culture of the communities involved. Otherwise any actions proposed could meet with opposition.

Local knowledge is part of the immaterial value of a landscape and in dealing with disasters, it should be considered a welcome supplement to scientific knowledge [12]. Traditional practices to deal with risk have contributed to shape landscapes and could help to find solutions for risk mitigation, which are more respectful of nature. For example, there is an expanding body of knowledge on locally rooted strategies for climate change adaptation [19] as well as integration of indigenous knowledge and scientifically based early warning systems.

### ***A sense of community must be conserved after disasters***

According to international DRR strategy, rehabilitation and reconstruction following a disaster are windows of opportunity for rebuilding livelihoods and for planning and reconstructing physical and socio-economic structures, in a way that will build community resilience and reduce vulnerability to future disaster risks [9]. The Sendai Framework stresses that in order to capture the opportunity to “Build Back Better”, a reconstruction phase needs to be prepared ahead of a disaster.

The issues involved in post-disaster reconstruction are of crucial importance for the future of communities: it is a hard task to decide what could be relocated, what should remain “where it was and how it was”, what could be changed to improve overall performance of settlements in the event of a hazard, and what could be abandoned without harming the identity values of a community. These are questions whose answers cannot be given without triggering decisional processes that involve the entire community [20]. A bottom-up approach is required, based on reinforcing local responsibilities, community involvement in decision-making processes, and partnership with community-based associations [21].

In the post-disaster phase it is difficult to start such processes, to share choices and strategies with communities, which is why land-use and physical planning inspired by a comprehensive approach to risk reduction should precede strategies and guidelines for contingency reconstruction plans. Reconstruction planning should be an essential part of comprehensive DRR, and basic decisions should be taken before disasters happen. Just as emergency planning is usually organised well before disasters happen [22], the main strategies and actions to be included in contingent reconstruction plans should be set up during “peace time”. It would thus be possible to make well-informed, participated decisions in full awareness, without the urgency or the lack of openness that characterises post-disasters [23]. In this framework all the measures considered

necessary to mitigate risk that could not be implemented in the current circumstances (due to economic or technical reasons) could become priority actions of a possible future reconstruction plan. If decision-making on post-disaster strategy is taken in advance, it would not be necessary to act under the pressure of emergency and it would be possible to ensure a suitable level of people’s participation in decisions regarding, for example, displacement that would weigh heavily on their future. People displaced after a disaster lose the context of their traditional surroundings, their sense of environmental identity and their livelihoods. Resettlements often increase poverty and worsen the quality of life for those concerned. Careful appraisal of displacement should be made in advance, considering all the factors involved in the local economy and the quality of life for the population in question.

The landscape approach shows that the relationship between people and their surroundings is based on a system of material and immaterial values which are important in defining a sense of belonging and place identity. Cultural identity should be protected after a disaster: this means not only paying attention to conserving cultural heritage, with its elements representing identity and pride, but also taking care of immaterial values and societal needs that must be proactively considered in post-disaster recovery [24]. Heritage conservation plays a significant role in social cohesion and sustainable development, especially in a time of crisis. However, at the same time it is important to consider that people’s lives are also made of everyday relationships, of habits, and small-scale economies; all the above features are swamped by the occurrence of a disaster (Fig. 1). Such immaterial elements must be safeguarded during reconstruction because they are part of the very essence of landscapes.

### **Conclusion**

In this paper risk management was seen to consist of an interconnected loop of risk reduction activities. Within this process the active role of communities was progressively highlighted in every phase. Indeed, disasters can sometimes be construed as the result of an ill-adapted society, a society that has broken that bond with nature and its living context which created an ecological balance and is a fundamental principle for the concept of landscape. Such ecological equilibria were often forged by people historically cohabiting with well-known natural hazards, leveraging on forms of traditional knowledge to implement prevention and mitigation measures.

Social cohesion is a strategic factor to increase resilience. Community awareness of hazards increases safety during emergencies while community involvement could ensure more effective monitoring of hazards and landscape maintenance whose degradation could be a driver of natural hazards. In the aftermath of a disaster, among the rubble, the very essence of the community also falls apart, neighbourliness and affective ties are broken, habits and customs are interrupted, and small-scale economies grind to a halt. In practice, the link between community and environment which is crucial in the ELC’s conception of the landscape is severed. Reconstruction therefore represents a crucial phase for the future of communities and landscapes (Fig. 2).

The current comprehensive approach calls for links between all the different sectors involved in DRR. A further step could be made, breaking down barriers between disciplines, sectoral concerns and institutional mechanisms. After all, risk is not sectoral and cannot be neatly compartmentalised.

Risk management and landscape care are mutually interdependent: healthier landscapes



Fig. 1. After a disaster, it is important to consider that people’s lives are also made of everyday relationships, of habits, and small-scale economies (photo credits: Marialuce Stanganelli).





Fig. 2. Disasters abruptly interrupt daily life, the possibility to reactivate habits is crucial for the future of communities (photo credits: Marialuce Stanganelli).

are more resilient to risk while mismanagement of landscapes is one of the sources of natural hazards; healthier landscapes will also reduce poverty and improve food security, thereby enhancing community resilience. Pressure on land and water resources, poorly planned and managed urban development, unequal income distribution, inadequate ecosystem services and landscape degradation are underlying drivers of risk in current megacities. Measures involving land-use planning, application of building codes, agricultural and ecosystem management, water management and drainage are essential for reducing disaster risks, since disasters are the ultimate outcome of unsustainable economic and social development of poorly adapted societies. This is why a step forward is required to go beyond an integrated approach towards a firmly rooted awareness of risk reduction needs in all sectors of civil society, in order to consider DRR no longer an 'add-on' but an integral part of all key development sectors. It is time to move on from an integrated approach where risk is considered as a separate element to take into account in different sectors to a holistic approach where risk is an inseparable part of a hybrid environment. Communities, developers and decision makers must be sensitized to include DRR as an essential part of their actions. Disaster risk reduction should no longer be considered external to land use and landscape policy but as a basic part of each action, as one of the sides of a multifaceted reality.

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