

## Vulnerability and Resilience in Development Context

**Veranstalter:** Katastrophenforschungsstelle, Institut für Sozialwissenschaften, Christian-Albrechts-Universität zu Kiel

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The Disaster Research Center of the Institute of Social Sciences of Christian-Albrecht University in Kiel hosted the 5th KatNet-conference<sup>1</sup> held under the motto „Vulnerability and resilience in development context“. During its three days twenty speakers, experts from different fields, tried to highlight from sociological, ecological, anthropological, geographical and economic perspectives various aspects of resilience and vulnerability of humans and ecosystems to a disaster. The main issues addressed during the conference were: how does „resilience“ manifest itself in a local context, what causes the rise or decline of „vulnerability“ and how do NGOs as well as development organizations make use of theoretical knowledge on-site? All these and other questions were subject of well-structured sessions.

FELIX MÜLLER (Kiel) opened the first session — devoted to conceptual aspects of the key terms — with a lecture outlining the concept of resilience in the rapidly growing field of ecology as well as environmental management and policy. He mentioned that not only people are vulnerable to disasters but also ecosystems which go through regular cycles of organization, collapse and renewal. In the ecological context resilience is regarded to be „the ability of a system to maintain its structure and patterns of behaviour in the face of disturbance“.<sup>2</sup> The stronger the disturbance, the more difficult is the restoration of the previous condition. Accordingly, a system has a high adaptability if the sum of all disturbances and changes in the attractor domains do not reduce the system's degree of self-organization. He summed up that these develop-

ment phases were further integrated and illustrated in the concept of „adaptive renewal cycle“.

DANIEL LORENZ (Kiel) highlighted from the sociological perspective the concept of resilience which manifests itself in the community's ability to withstand a catastrophe and collective stress situations. In spite of the fact that social resilience is context-dependent and often discernable only from a perspective *ex post*, it is still possible to differentiate the factors which influence it. These are (1) the institutional dimension encompassing political and legal systems, (2) the economic dimension referring to economic growth, financial stability and access to the resources and (3) the social dimension implying social capital, distribution of roles and powers, demographic change, compliance as well as cultural and religious life. Taken together, the special contribution of sociology can be the exploration of the interplay of all these indicators which are of particular importance especially for the successful work of the development organizations.

The theoretical framework of the session was further widened by CARSTEN FELGENTREFF (Osnabrück) who delivered a lecture on definitions of the key terms. They seemed to have a lot in common with the theories from the field of ecology. Hence, vulnerability means in development context „the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a natural hazard“.<sup>3</sup> It involves a combination of factors that determine the degree to which someone's life and property are put at risk. Some groups in society are more prone to damage than others. Key characteristics of these variations of impact include class, occupation, ethnicity, gender, disability, age, etc. Concerning the resilience, it is „the capability of a system to maintain its functions

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<sup>1</sup>KatNet Katastrophennetz e.V., <<http://www.katastrophennetz.de>> (20.10.2009).

<sup>2</sup>C.S. Holling, *The Resilience of Terrestrial Ecosystems: Local Surprise and Global Change*, in: W.C. Clark / R.E. Munn (eds.), *Sustainable Development of the Biosphere*, Cambridge 1986, p. 296.

<sup>3</sup>Ben Wisner / Piers Blaikie, *At Risk: Natural Hazards, People's Vulnerability and Disasters*, New York 2004, p. 11.

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and structure in the face of internal and external change and to degrade gracefully when it must".<sup>4</sup> Felgentreff closed his speech with Oliver-Smith's words „if a society cannot withstand major damage and disruption a predictable feature of its environment, that society has not developed in a sustainable way".<sup>5</sup>

JOSEF BORDAT (Berlin) looked at the key concepts of the conference from a methodological point of view. He emphasized that only by means of a thorough analysis of the local social system it is possible to raise resilience and reduce vulnerability. To achieve this goal it is necessary to involve in the research not only scientific knowledge but also the world-views of the locals even if their perception of a disaster is based on assumptions and beliefs which basically collide with the scientific approach of looking for the „truth". In this context the „voices" of human beings — especially of those layers of society which are less able than others to protect themselves against disastrous processes — should take center stage. They are the main actors in the system, their opinion and local knowledge should not be ignored or treated inferior to the scientific knowledge.

The second session focused on case studies of vulnerability and resilience at the local level. It was opened by THOMAS GURR (Kiel) and TOBIAS HARING (Kiel) who shared their findings from the Children and Childhood Studies. Thomas Gurr pointed out those factors which can support the agent's resilience in spite of adverse psychological or social conditions. These factors are, on the one hand, the individual resources like persistence and curiosity, on the other hand, social resources like stable family conditions or adequate living standards. Tobias Haring (Kiel) concentrated in his turn on the factors which reduce the resilience, for example poverty, and those which foster it such as education, social networks and sound family atmosphere. In the context of poverty he brought up into the focus Pierre Bourdieu's theory of cultural and social capital which plays an essential role in the analysis of the interplay between individual dispositions and existing social resources. However, he criticized the privatization of the public sphere. According to him, it leads to the isolation and degradation of poor

segments of the society.

ANNE DÖLEMEYER (Leipzig) enlivened the session by presenting the findings of her field work carried out in New Orleans three years after devastating Hurricane Katrina. In her study she analyzed the role of marginalized groups of population in the reconstruction process and noticed that there was an evident interconnection between the ability to articulate one's needs and the reproduction of vulnerability/resilience in the rebuilding process. By means of local maps she drew attention to certain regions which in spite of being spared had a low rate of returnees whereas other regions which were damaged enormously interestingly had a high rate of returnees. She mentioned that this trend did not only depend on wealth, class and race — factors much debated in the media — but rather on the active resident involvement in the public decision making. The residents were engaged in district planning meetings that connected participants even over geographical distances via satellite videos and webcast. These findings suggest that the participatory planning is a crucial factor auguring success of the recovery process.

ALEJANDRO PELFINI's (Freiburg) paper focused on two case studies dealing with the economic crisis of 2001 in Argentine and the flooding of the river Parana in 2005. His objective was to find out common elements in mechanisms of coping with such crises, potentials for the development of collective learning processes and improvement of the resilience. According to Pelfini, Argentine seems to be accustomed to crisis which shakes it almost every ten years. Consequently, not only currency and investments are devaluated, but also elites are substituted by new constellations in the government. Interestingly, the population takes it for granted and perceives it as an opportunity for a re-establishment. Unstable situations are regarded at the same time as a new chance for experimentation and innovation. However, today the worsening of social conditions is no longer considered to be a fa-

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<sup>4</sup> Brad Allenby / Jonathan Fink, *Toward Inherently Secure and Resilient Societies*, in: *Science* 309 (12.8.2005), p. 1034.

<sup>5</sup> Anthony Oliver-Smith, *Anthropological Research on Hazards and Disasters*, in: *Annual Review of Anthropology* 25 (1996), p. 304.

te or a result of a plot but a process in which concrete human actions play a central role. Thus, the acquisition of practical competency, establishment of norms and implementation of capacities are gaining importance.

BERND RIEKEN (Vienna) highlighted the findings of his case study dealing with the worst Alpine avalanche of the century. In February 1999, an extraordinary chain of natural events led to a disaster in an area of the Alps thought to be relatively safe. It went into the Green Zone of Galtur, a small village in Austria, killing over 30 people. Hence, Rieken wanted to examine from ethno-psychological perspective whether there was a sustainable effect of the disaster on the inhabitants and how they coped with it. Surprisingly, the interviews carried out with the locals revealed that they were generally unwilling to share their feelings with any psychiatrist, arguing that they were not insane but had simply witnessed a disaster. Instead, the locals often shared their memories of the catastrophe with relatives, friends and the community priest seeking solace in joint conversations about God and Nature who supposedly wrought revenge on people for the negative impact on climate change. Rieken concluded that such an attitude seems to be untypical in the mainstream of European ethnology and psychotherapy.

NIKLAS GEBERT (Bonn) started the afternoon session with the evaluation of the role of vulnerability and risk assessment in the development of effective Tsunami Early Warning System (TEWS) and recovery planning. Within the framework of German-Indonesian project TEWS, Gebert was exploring the process of warning and response phase in the tsunami risk areas of Indonesia. The aim was to create risk-maps and other products which can best illustrate vulnerability and resilience indicators such as exposure (the number of people afflicted), susceptibility (the ability to receive a warning), coping capacity (capability to evacuate), recovery (restoration of the households) and reaction patterns (willingness to evacuate). Such maps can not only improve the early warning system and disaster management but can also support decision makers to react adequately to the existing local risks.

STEFAN KIENBERGER (Salzburg) evalua-

ted strategies which were developed for the reduction of the vulnerability of people in the hazard-prone district of Búzi, Central Mozambique. The major focus of his presentation fell on the integration of decision making tools such as „vulnerability“ maps – illustrating community infrastructure, land use, settlement areas and risk zones – and „satellite“ maps with high resolution images. These products provide spatial information on the district during disastrous events and contribute, in combination with participatory-oriented exercises, to a risk-reduction framework. The latter include community based mapping and scoring exercises, identification and marking of important infrastructures, agricultural zones and areas prone to inundation as well as determination of factors causing droughts and floods. As a whole, these activities allow to model the complex issue of vulnerability.

BIJAN KHAZAI (Karlsruhe) presented a project conducted by the German Research Centre for Geosciences in cooperation with a number of institutions in Istanbul. The project seeks to develop through a Megacities Indicators System (MIS) a scientific basis for the assessment and mitigation of seismic risk in Istanbul. On the one hand, it provides an overview of the expected physical damage via Physical Risk index. On the other hand, it enables, through Social Vulnerability index, to look into both the social fragility and resilience factors in different districts of Istanbul. As a special „control system“, Disaster Risk Management index makes possible for the stakeholders to measure performance and effectiveness of different policies. All in all, MIS should assist all the sides in policy development, decision-making, and monitoring the effectiveness of risk reduction options.

The evening session was thoroughly devoted to the analysis and assessment of vulnerability in the context of 2004 Indian Ocean earthquake which triggered a series of devastating tsunamis along the coasts of Thailand, Sri Lanka, Indonesia and India. Since the distribution of victims and their exposure depend on diverse socio-cultural, political, economic and ecological factors, it is almost impossible to assess the vulnerability without taking into consideration the worldview of the afflicted

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parties. This issue was of central concern in MARTIN VOSS' (Kiel) paper which discussed the advantages of the so-called „transdisciplinary integrative vulnerability assessment“ (TIV) approach illustrating it on the example of the tsunami disaster in Thailand. It seeks to integrate into the interdisciplinary work the interests of all stakeholders, including the vulnerable themselves. More broadly, such an approach is needed for the optimal situation assessment and the progress in the complex recovery process.

Not only people, towns, settlements suffered severe devastation during the tsunami of 2004 but also coastal ecosystems. GUNILA KAISER (Kiel) and HORST STERR (Kiel) outlined this subject on the example of their research conducted within the framework of TRIAS-agreement between the German Research Foundation and the National Research Council of Thailand. Its different subprojects set out to analyze the mechanisms of impacts of the 2004 Tsunami on the seafloor and land as well as to evolve risk management strategies for the coastal protection. Hence, one of their common objectives is to develop the so-called Tsunami Risk Analysis Tool (TRAIT) which could feature the event by means of detailed ecological, economic and social vulnerability analysis. Among other major tasks of the project is the evaluation of ecological vulnerability exposure through satellite images which provide a multi-scale spatial data on topography and land use change on the shore.

PIA HOLLENBACH (Zurich) gave a vivid account of the complex activity of the international and German relief organizations in the recovery work after the tsunami disaster of 2004 in Sri Lanka. She tried to highlight the impact of donations on the basis of ethnographical study as well as her practical experience gained during three years of relief fieldwork. She observed critically the process of „giving“ and „taking“ donations illustrating it on the theory of the famous sociologist Marcel Mauss who argued that gifts — in this case donations — are never „free“. Rather, they give rise to reciprocal exchange which creates social bond between the giver and recipient obliging the latter to reciprocate. Accordingly, she criticized the fact that the dona-

tions brought forward with them conditions and demands which created a new form of hegemony and asymmetries between givers and receivers. Moreover, seldom do the development organizations take into consideration the real needs. On the contrary, the intervention of imported foreign strategies into local structures rather harms than helps.

The final conference day focused on the empirical approaches to disaster such as practical implementation, media work and financial analysis. Within this framework HENNING GOERSCH (Karlsruhe) delivered a lecture of a descriptive character. It was based particularly on his personal experience as a humanitarian helper of THW-mission (German Federal Agency for Technical Relief) in the Irrawaddy Delta, Myanmar. This region was hit hardest in 2008 by the devastating tropical cyclone „Nargis“ which led to thousands of casualties. Besides, the sea-water intrusion caused sustainable damage such as contamination of fresh-water in the wells and reservoirs as well as salinization of the farmlands. Therefore, one of the THW-units, the so called SEEWA (Rapid Deployment Unit Water and Sanitation Abroad), set out to offer technical and logistical assistance on-spot. During its work the team of experts not only installed water treatment equipments but also trained local workers in the operation of special laboratories. The latter, along with water distribution points, were handed over to the locals for permanent use in the Delta. Goersch concluded that the work done had a long term effect on the recovery in the region.

HELENA ZEMP's (Zurich) paper was based on a qualitative content analysis of the press and media coverage on a 2005 flood which brought chaos to a large swath of central Switzerland. The objective was to explore the role of the mass media and new communication technologies in the assessment of hazards and risks and their impact on the human behaviour. She mentioned that the extensive personnel deployment and population's level of awareness play a significant role in the hazard preparedness and self-protection of the people. Especially due to the provision of reliable information through the variety of technical options such as weather forecasting, internet and mobile services the number

of casualties in Switzerland was significantly lower as compared with similar events in the developing countries. However, it is still unclear how people react to information disseminated by a wide range of private media which emotionalize the situation often misrepresenting the facts. This aspect being less examined leaves room for speculations that such information can also fail to have a desired effect.

The final contribution of the conference was made by LINDA RAMCKE (Kiel) who addressed in her speech much debated global issues such as climate change and the world financial crisis. For people in low-income countries these are not abstract notions but a very immediate reality which threatens their environment, access to food and fuel, families' health and future prospects. Ramcke stressed that such a harsh development had obviously a negative impact on the vulnerability of the poorest layers of the society in the developing countries. By means of various economic charts and figures, she showed the actual financial allocation of the foreign aid and discussed some measures how to reduce poverty and promote prosperity in these countries. Her conclusion was that the adaptation and building climate resilience must be central for a sustainable development program in the high-income countries which are historically responsible for both of these crises.

Disasters occurred in the past and will bother us in the future. The contributions and stimulating discussions during the conference gave an opportunity for a better understanding of them and raised questions in need of further interdisciplinary investigation.

**Conference overview:**

*Opening lecture*

LARS CLAUSEN (Kiel, Germany): Warum nur eine soziologische Katastrophenforschungsstelle?

*Session 1 Vulnerabilität und Resilienz — konzeptionelle Zugänge*

FELIX MÜLLER (Kiel, Germany): Resilienz, ökologische Integrität und Systemdynamiken zwischen Theorie und Praxis

DANIEL F. LORENZ (Kiel, Germany): Resili-

enz aus soziologischer Sicht

CARSTEN FELGENTREFF (Osnabrück, Germany): Vulnerabilität und Resilienz

JOSEF BORDAT (Berlin, Germany): Resilienz — Methodologische Bemerkungen

*Session 2 Vulnerabilität und Resilienz in den USA, Argentinien und Europa*

THOMAS GURR / TOBIAS HARING (Kiel, Germany): Vulnerabilität, Resilienz und Armut

ANNE DÖLEMEYER (Leipzig, Germany): (Not) Having a Voice: Repräsentation marginalisierter Interessen in den Aufbauplanungen in New Orleans nach Katrina

ALEJANDRO PELFINI (Freiburg, Germany): Krise als Norm in Argentinien

BERND RIEKEN (Vienna, Austria): Resilienz im lokalen Kontext: Wie in Galtür die Lawinenkatastrophe von 1999 verarbeitet worden ist

*Session 3 Vulnerabilität und Resilienz — Analyse, Assessment, Bewertung I*

NIKLAS GEBERT (Bonn, Germany): The Role of Vulnerability and Risk Assessment for the Configuration of End-to-End Early Warning Systems: Case study from the German-Indonesian Tsunami Early Warning System Project (GITEWS)

STEFAN KIENBERGER (Salzburg, Austria): Vulnerability Reduction in Mozambique — the Key of Providing Spatial Information on the District on Local Level

BIJAN KHAZAI (Karlsruhe, Germany): Megacity Indicators System (MIS) for Disaster Risk Management in Istanbul

*Session 4 Vulnerabilität und Resilienz — Analyse, Assessment, Bewertung II*

MARTIN VOSS (Kiel, Germany): Transdisziplinäres integratives Vulnerabilitätsassessment (TIV)

GUNILLA KAISER (Kiel, Germany): Vulnerability Assessment nach dem Tsunami in Thailand

HORST STERR (Kiel, Germany): Ecological Vulnerability Assessment by means of Remo-

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PIA HOLLENBACH (Zurich, Switzerland):  
Tsunami Hilfe in Sri Lanka

*Session 5 Empirische Zugänge (Praktischer  
Umgang / Medien / Kosten)*

HENNING GOERSCH (Karlsruhe, Germany): THW Trinkwassereinsatz in Myanmar nach Wirbelsturm Nargis

HELENA ZEMP (Zurich, Switzerland): Katastropheninformationen oder Informationskatastrophen? Kommunikationsnotwendigkeiten in Katastrophen unter Berücksichtigung des Medienwandels und der Handlungslogiken von Betroffenen

LINDA RAMCKE (Kiel, Germany): Entwicklungsländer in der doppelten Krise — Vulnerabilität und Anpassungsstrategien

*Final panel discussion: Vulnerabilität und Resilienz — Theorie and Praxis*

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