Literature Review

Social Impact Group

MICRODIS Project

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Gendering Vulnerability Analysis : Towards a more nuanced approach

By Maureen Fordham

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004; (pg174-182)

Key Themes : Gender, Vulnerability and Disaster

Summary:

This paper critically engages with the vulnerability perspective in disaster theory through gendered lenses. The vulnerability perspective has shifted the dominant perspective of control of physical hazard agents to engaging with the social structures and inequalities.

The vulnerability approach shifts the emphasis from post disaster response to predisaster mitigations of conditions which create a disaster. Blackie et al 1994: 233 argues ' Vulnerability is deeply rooted, and any fundamental solutions involve political change, radical reform of the international economic system, and the development of public policy to protect rather than exploit people and nature'

The above analysis suggests that real change from vulnerability to resilience cannot be made without a political economy approach and disturbing the status quo.

A critique of the hazard approach can also be made – given that these models were generally top down and centralised in their approach – the response centred command and control approach – as highly masculine giving emphasis to technical rather than the social. In response to such approaches have now emerged the community engagement model with participatory forms emphasising bottom up approaches in which community groups have a clear place (Fordham 2000).

While this shift to analysis of social structures was crucial in vulnerability perspective, homogeneity rather than diversity of the communities – or the gendered nature of the communities was the acknowledged. This paper looks into why gender as an analytical category is important; what is the justification of understanding vulnerability through women's eyes. It then goes on to argue for a more complex and a nuanced approach to gendered vulnerability analysis as key feature of any analysis and interventions.

Why gender as an analytical category is important?

Disasters are not social levellers but that their impacts can be felt through race, class and gender parameters in specific historical contexts (Enarson and Fordham 2001). Research has shown that due to women's invisibility they are more vulnerable before and after the disaster (Fordham 2000; Enarson and Fordham 2001).

The case for claiming women's greater vulnerability

Literature shows that men as a group enjoy more opportunities than women – given that we live in a patriarchal society. Women across the world to varying degrees have triple roles of reproduction, production and community work. The unequal opportunities lead to less power, and freedoms making women more vulnerable in particular locations and times. Further if disaster vulnerability cannot be separated from everyday reality as Blackie et al 1994 suggests; gender differentials are bound to affect the disaster outcomes. Gender blind decisions can impact their work load and increase violence after a disaster and women may be marginalised from decision making. This then becomes the context for viewing vulnerability from women's eyes in disaster contexts.

Towards a more nuanced approach

Recent works by Andrea Cornwall (1997; 2000) suggests a rethinking of gender and participatory development analysis and a need to shift to analytical frame that addresses power and powerlessness which in broadest sense must include men. Cornwall (2000) suggests that a focus on women can obscure other forms of exclusion and powerlessness as these are not only a female condition.

It is critiqued that even a GAD framework has not really changed the frame of analysis as women rather than forms of powerlessness continues to be the frame of analysis. The author however cautions against giving up the gendered frame of analysis completely to a more nuanced one which goes beyond the checklist of vulnerable groups and adopts a nuanced, critical and a reflexive approach. The author suggests ' the question, then, becomes not *whether* to include men and masculinity in the analysis but the *degree of centrality* that they should assume' .

The nuanced approach would focus also on capacity and vulnerability analysis rather than vulnerability analysis alone – given that women are not just victims but also active agents constructing their own reality. As Cornwall (1997: 21) suggests, the inclusion of men and masculinities should not simply count men in but broaden and deepen our understandings of power and inequality.

Gender and Hurricane Mitch: Reconstructing subjectivities after disaster

By Julie Cupples

Key Theme : Gender and Disasters

Abstract : Much of the gender and disaster literature calls for more gender-sensitive disaster relief and research by focusing on the ways in which women are more vulnerable in a disaster or on their unique capabilities as community leaders or natural resource managers which are often overlooked or underutilised in emergency management strategies. As well as seeking to overcome the (strategic) essentialism that is part of these calls and debates, this paper pays closer attention to gender identity and subjectivity as these are constructed and reworked through the disaster process to highlight the complexities and contradictions associated with women's responses to a disaster.The paper suggests that the experience of disaster is shaped not only by pre-disaster vulnerabilities and forms of resilience but also by the discursive positioning facilitated by the disaster itself. This focus, while crucial to gaining a deeper understanding of the gendered dimensions of disaster, also complicates attempts to create more gender-sensitive frameworks for disaster response

Research Question : How does the participants involvement in the disaster process impacts their subjectivities? How are gendered identities destabilised or reproduced in disaster contexts?

Research Methodology: This article draws on qualitative research conducted with 12 participants in urban and rural communities in the department of Matagalpa, Nicaragua, who were displaced or made homeless by Hurricane Mitch in 1998. It formed part of a broader doctoral study that explored the intersections between motherhood, work and political activism, in which a total of 33 women were interviewed. In-depth semi-structured interviews were conducted and participants were interviewed between two and four times each in 1999 and 2001.

Concepts/Conceptual frameworks used Implicitly:

Gender dimensions in Disaster: In 1990s, Gender and disaster studies were initiated to rectify the gender blind understandings of disasters. Following the Women in Development (WID) and Gender and Development (GAD) paradigms these studies tended to focus on different responses and coping mechanisms of women and men in disasters. They highlighted how women were more vulnerable than men in disasters by women in the wake of a disaster – thereby essentialising women or reporting women as victims in disasters. In stead, the author suggests that following from Fordham and Ketteridge (1998), we must engage with gendered dimensions of disaster without resorting to stereotypical or deterministic notions of women's needs and behaviour. It is important to acknowledge the differences as well shifting identities and subjectivities of women whilst forging practical common agendas as well.

Findings:

1) Often reconstruction and recovery processes in disasters reinforce traditional roles of women, although the reality is very much complex.

2)Communities respond in different ways showing different levels of solidarity, political mobilisation and dependency in post disaster situations.

3) Responses of women were different - due to gender differences on national, regional and community levels leading to divergent subjectivities amongst survivors.

4)There can be new kinds of dependencies making recovery more difficult. Disasters have differentiated effect and can generate heterogeneities leading to new gender and social identities. Dominant disaster paradigms do not explain multiple and diverse forms of disaster responses and their gendered dimensions.

5)The narratives of women show that gender sensitive disaster analysis has to go beyond generalised notions of vulnerabilities and explain and address the reconfigurations of self that emerge during disaster response processes.

6)The narratives show that women move in and out of states of resistance, accommodation, vulnerability and strength, sacrifice and self assertion. This is because of number of identities active at that time and their boundaries being very fluid. Although women are disadvantaged due to cultural constructions, they also draw upon them strategically and construct their subjectivities discursively. Disaster process then becomes a space where gender is performed differently and or hegemonic gender identities used strategically.

Gender Dimensions in Disaster Management : A guide for South Asia

by Madhavi Malagoda Ariyabandhu and Maitree Wickramasinghe

Published by ITDG South Asia Publication, Colombo, Srilanka Dec 2003

Key Themes : Gender and Disasters

Abstract: This book aims to raise awareness on gender issues amongst the policy makers as well as practitioners across South Asia. It addresses the issue of how gender and development concerns are reflected in the disaster contexts.

The main arguments of the book are:

- The risk posed by natural hazards is a variable, and had direct impact on the livelihoods in particular
- Disaster risk management is a part of 'managing the livelihoods' for millions of people in subcontinent.
- Gender concerns raised in the development context are applicable to the disaster contexts with a specific sensitivity to the vulnerabilities and capacities arising from the different stages of disasters.
- The specific vulnerabilities and capacities of men and women and social dynamics are often not visible in the disaster contexts. Detailed livelihood analysis as well as specific sensitivity is needed to locate and address them.
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After different disaster and development model, this book also discusses following main issues:

-Following the PAR (Pressure and Release Model) by Blackie et al, it suggests that it is vital that we recognise that disasters not only arise out natural hazards but that they are an outcome of various political, social and economic forces of development. Thus there is a socio-economic and natural side to any disaster.

-The alternative perspective – as adopted by Duryog Nivaran therefore suggests that we look at the underlying causes and reasons – as to why certain sections of the society are more vulnerable than others. Understanding of these links will help us plan to deal with them.

-All in all, women, and especially poor women are vulnerable even before the disaster strikes. Therefore a woman's position can only be exacerbated in disaster contexts.

-There are specific gender issues that need to be understood and addressed in disaster contexts for eg, women's workload may increase after the disaster.

-A people oriented planning framework can be used to do vulnerability and gendered planning, and gendered vulnerability analysis in disaster context.

-Gender roles need to be understood and social perceptions need to be addressed – for eg widows and those living without male protection may face social marginalisation. There would also be certain gendered economic impacts.

-There would also be differences in the psychological impacts – where studies have shown that women are emotionally affected more than men.

-Violence against women may increase after the disaster.

-Due to gendered roles, there would be gender based differences in the coping – however women are not just helpless victims, it is important to recognise their capacities and skills. They use their indigenous knowledge for disaster preparedness and try to protect their belongings in the event of disaster. They also share warnings through informal networks.

-Currently, there is an absence of gender sensitivity in disaster management – that is absence of sufficient analysis of communities from the gender perspective leads to their invisibility or stereotyping of women.

-Lack of awareness about legal and cultural discrimination against women leads to their denial of rights and wrong policy assumptions. It also leads to superficial assistance.

-To make development and disaster management holistic and sustainable , the policies need to transfer their focus from emergency management to risk management; ensure that implementing persons/officials are aware about these concepts; ensure relief and rehabilitation integrated into long term disaster preparedness and development and that gender sensitivity is embedded in all cycles of disaster management.

-Ensure that women's practical as well as strategic gender needs are met in emergency response.

-Gender sensitive disaster management would require context specific social and gender analysis in a given context; turning gender concepts into policy guidelines; commitment to enforce gendered policies; agreement to minimum standards.

-Special attention needs to be paid to conditions of landlessness; exploitative working conditions; female malnutrition; illiteracy; inadequate health care; lack of access to information and inadequate legal support.

-Special attention needs to be provided to highly vulnerable women such as poor or low income women; refugee and homeless; elderly women; women with disabilities; women headed households; widows, indigenous women, new migrants; women with language barriers; those belonging to subordinated cultural groups, socially isolated women; caregivers with a number of dependents; women living alone, or living in shelters' women subject to assault or violence/abuse; chronically ill women; undocumented women and malnourished girls and women.

Gender, Emergencies and Humanitarian Assistance

By Bridget Byrne with Sally Baden

Key Themes : Gender and Disaster

Summary :

WID or GAD in Emergencies:

There is growing international consensus on the need to consider gender issues in
emergencies and humanitarian assistance. This is because women are most affected in emergencies and the internal impetus within the agencies to respond to them. However this response is influenced by gender and development work – and within that specifically the WID framework rather than the GAD framework – that is

focusing on women's specific needs and their role as mothers. While this is driven by an understanding that women are primary victims of the emergencies, there is a limited analysis of the role of social relations, and specifically gender relations in determining who suffers in emergencies and the opportunities to change this situation. A gender approach is important to identify men's and women's differing vulnerabilities to crises as well as their different capacities and coping strategies, in order to build on these, in order to design effective relief programmes. Gender analysis can illuminate the unequal power relations underlying social institutions, to ensure that women are not further marginalised by relief interventions. Gender analysis can also assist in understanding changes in gender relations and identities which occur during crisis and conflict situations and thus highlight the potential for positive change.

Gender issues in emergencies

Disasters are never solely 'natural' events: their impact depends on the social and political context and importantly on the social composition of the population affected. The concept of vulnerability is important in identifying which groups are at risk in emergencies. Vulnerability thus also denotes the internal capacity to cope. A gendered analysis would suggest that gender is an important if not the sole determinant of
vulnerability. Vulnerability assessment involves understanding the coping strategies – which are in part also determined by gender. Relief is often targeted at women but with little understanding of the gender relations underlying the livelihoods of household. A GAD approach would analyse men and women's differential access to power and resources with the household and how it might be affected by relief interventions. It also draws attention to division of labour between women and men and particularly women's reproductive labour. It also looks at women's strategic interests as well as practical needs. Further analysing cultural constraints faced by women they also identify the way it affects their mobility and response in disaster situations. Households's coping capacity would also be influenced by age, class, status with a family. Further female headed housholds may be further restricted and humanitarian assistance needs to ensure that it does not increase the vulnerability of these groups by undermining their coping capacities or reinforcing those coping capacities which are damaging. Further, it is still less known as how decisionmaking and negotiation takes place in the household in disaster situations. Ultimate breakdown in negotiation occurs with family break-up, often with the abandonment of women, children, or the elderly, whose claims for support have been rejected. In the wider community, disaster situations can have differing impacts on women's public participation – they may provide opportunities to women to take on leadership positions, but may also increase the demand on their already overburdened time.

Gender ideology and identities are also subject to rapid change in conflict situations. This can produce more conservative attitudes to women's behaviour decreasing their rights and mobility. Women are sometimes upheld as the symbolic bearers of caste, ethnic or national identity in conflict situations which can lead to them being singled out for attack. On the other hand, liberation struggles can promote new roles and opportunities for women as part of wider social revolution. Overall, however, conflict is more likely to reinforce, than to challenge, traditional views of men and women.

Gender sensitivity in responses to emergencies

A planning framework is needed in order to introduce gender analysis into emergency
response. Various frameworks have been developed for gender planning in emergencies, arising mainly from the work of NGOs in this field. Each has different strengths and weaknesses and is suitable for use in different contexts, or in combination with the others. It is also crucial to consult with women, as well as men, in the planning and implementation of emergency interventions. Failing to do so means not only that the needs of women are neglected but also that women may lose access to resources they are accustomed to control and that their skills and capacities are not utilised and built upon.

The use of participatory methods for information gathering, programme design, monitoring and evaluation - can illuminate men's and women's different needs and experiences as well as building on women's capacities, increasing their decision-making power and aiding group cohesion. Gender-awareness is required in the use of these methods. The other challenge is about how to prevent violence in disaster contexts. There is also a strong case for building a gender dimension into emergency response at the levels of early warning, preparedness and capacity building. Local-level early warning systems particularly could incorporate gender-specific indicators and capacity building should give attention to strengthening women's organisations.

The policy and institutional environment for integrating gender into relief work

There are a number of constraints, political and institutional, to the introduction of a gender perspective in relief work. Some of these relate to the separation of relief and development work, the practical need to respond to emergencies quickly and the tendency of relief operations to be characterised by top-down, donor-dependent, expatriate-run operations, drawing on separate funds, with minimal appraisal and approval procedures, in comparison to development programmes. Unlike the general feeling, introducing a gender approach into relief programmes need not slow down the delivery of relief and but can render assistance more effective and inclusive. Other issues include new approaches to staffing and training, and monitoring and evaluative procedures to ensure that they are gender sensitive and inclusive.

Gender analysis is a flexible and dynamic tool and its application does not readily translate into universally applicable guidelines. The approach adopted to gender issues should be geared to the specific circumstances of each emergency and to factors such as the social composition of the affected population and the likely duration of the emergency, the particular intervention planned and the type of organisation that is going to carry out the programme.

Integrating gender concerns into relief programmes

The adoption of gender policy in emergency work is a long-term project and must begin with a development of a gender analysis from the beginning of any response to an emergency situation. This will require the employment of staff with gender training, or the training of existing staff, with gender as a prime consideration in methods chosen to distribute resources. Involving women in consultation and giving them decision-making power is perhaps the key element in a gender-aware approach. New mechanisms may be required in order to ensure the full participation of women. There is also a need to learn from/ and establish the best practices - that is a systematic institutional analysis is required to highlight strategic points of intervention, barriers to implementing gender policy and the resources, structures, procedures and incentives which might be necessary to overcome these.

Gender Differentiation and Aftershock Warning Response

By Paul W. O' Brien and Patricia Atchinson

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998, pg 173-183

Key themes : Gender and Disaster

Abstract:

Drabek (1992) identifies gender as one of the factors that affects the risk perception along with disaster experience and other factors. Fitzpatrick and Mileti (1994) report on the relationship between attributes of the receiver, such as gender and socio-economic status and how disaster warnings are heard, understood, personalized and responded to. Quarentelli, Turner, Yanomoto also report that women are more likely to believe in warnings than men (Fitzpatrick and Mileti 1994). Lott (1994) assesses a number to studies and suggests that 'behaviour does not always confirm the stereotypes, and careful reviews across the empirical literature typically fails to support generally accepted conclusions of stable gender differences across situations'. Barrie Thorne (1997) suggests that gender should be moved from the realm of 'dualisms' to 'fluid and situated gender'. This study suggests there are significant differences in 1) how men and women experienced the earthquake 2) early actions undertaken 3) information received about aftershocks 4) action undertaken in the three months. 5) opinions related to the disaster.

Research Methodology : The context chosen is the 1989 Loma Prieta earthquake in northern California. The results of the findings are based on over 1600 California residents who were surveyed in two different communities after the Earthquake hit the state. The areas were San francisco and Santa Cruz.

Findings:

Gender differences in aftershock warnings:

1) The research suggested that women were more likely to get information from informal sources. Respondents on information seeking behaviours suggested a slight differences in the use of media; with 4% more men reporting access to radios after the earthquake. On what information was actually received in the first seventy-two hours, it was found that more men reported receiving official information about the aftershocks than did women (33% versus 22%). Women more often received word of mouth information (30% Versus 22%). Further they received information from their social networks such as relatives and friends (41% versus 27%). Thus consistent with the notions of male instrumentality and female expressiveness, men sought to gain after shock information from authoritative or official sources while women relied upon informal networks.

2) Women were more likely to perceive damage : More women reported on feeling the earthquake. Males reported lower levels of neighbourhood damage than women. Women also reported higher levels of damage to household items such as furniture etc.

3) Women were more likely to take household action : Women were found to be more concerned about personal, family, and home damage than men (54% versus 42%). Also women were found significantly more likely to take action consistent with their expressed beliefs than men

4) Men were more likely to help outside the household : Men were found to be more involved in search and rescue operation (6% versus 2%) and to have directed traffic (3% Versus 1%). More women (30%) than men (22%) provided food or water to others.

The data suggests that consistent with expressiveness, women are more likely to show concern to their home, families – however higher involvement of women in planning, information seeking reflect instrumentality. The author concludes by suggesting that the data suggests a gender fluidity related to a context and that instrumental/expressive gender dichotomy is vastly oversimplified.

For the policy suggestions, the author suggests that there is a need to understand how gender affect public risk communication and the differences in risk perception and response.

Women Victims view of Urban and Rural Vulnerability

By Ela Bhatt

In 'Understanding Vulnerability' edited by John Twigg and Mihir Bhatt
Duryog Nivaran, ITDG publication, Colombo, Srilanka 1998

Key themes : Gender, coping capacity, Vulnerability and Disasters

Summary:

This paper discusses 'vulnerability' from and through the voices of urban and rural women in Gujarat. Some of these women are affected by repeated disasters such as floods or multiple disasters such as drought and floods as well as riots which had taken place in Gujarat in 1969 and 1985.

The characterics of their vulnerability is voiced by the women and are different for the urban and rural women.

Rural   women:

Irrespective of the regional variations, culture and morphology and climatic conditions, the rural women identified their vulnerability due to :
-   lack of resource base
-   poor resource quality such as degraded land
-   lack of productive assets such as wells, bullocks, and poultry
-   lack of access to better seeds, marketing
-   lack of absence in the non farm sector
-   high indebtedness to meet various relief, rehabilitation and consumption needs
-   irregular and seasonal work available before and after the disaster
-   low wages

The women also said that their situation was compounded by illiteracy, lack of education and information about disasters (beyond direct experience); lack of awareness about govt prog for relief and rehabilitation, rigidity in govt relief distribution programmes; malpractices and role of middlemen in rehabilitation efforts, and Patriarchy prevalent in the relief to rehabilitation cycle.

Nearly all women from different castes, and age groups identified widows and deserted women as some of the most vulnerable groups in rural areas.

Two key points emerge out of the narratives of women – namely that women were clearly able to see their vulnerability as a product of a variety of deprivations and emerging conditions. Secondly there were able to see their position as victims of disasters but also as women. During disasters women not only had to carry the dual burden of productive and reproductive work but also had to attend to mitigation, revival and rehabilitation.

The urban women:

Living in the slums and chawls (low income settlements) the women – belonging to the 'marginalised castes' as well as muslim women from the city said that they were vulnerable due to may reasons such as:
Lack of employment
Irregularity of jobs
Lack of employment protection
Low wages
High indebtedness
Lack of timely and sufficient credit for their petty trades and micro-enterprises

This situation was further worsened due to :

Constant fear of eviction from slum pockets
Fear of police and municipal authorities
Lack of relatives and community support during crisis
No or meagre family support for the old, widows and deserted women
Loss of productive assets and killing of the family members during the riots
Ill health of the earning members
Expensive health services
Lack of education,
Hazardous and extremely congested living and alcoholism in the areas where they stayed

Like the rural women, the urban women also linked their vulnerable conditions to the overall environment in which they lived. Again widows, old and deserted, chronically ill were identified as the weakest among the vulnerable.

The author concludes that the narratives and the perceptions of women on vulnerability brings about the following important points:

The first is their vulnerability locked position which does not allow them to escape the condition. The individuals and households inherit the vulnerable conditions due to related lack of opportunities to enhance their resource base and empower them to negotiate with the market powers. Their vulnerability increases to the point that it makes them destitute and often one catastrophe is enough for them to be pushed down the ladder. This in turn leads to household mortgaging and distress sale of their possessions – the households tends to develop coping mechanism that are weaker than the former ones. Many have no coping mechanisms and which leads to marginalisation of the whole household with the female children and women facing the most burden.

The second point is that vulnerability compels women to expand their work opportunities to earn a higher wage in informal sectors. This leads to their exploitation by the system as well as they are at the receiving end of the domestic clashes and violence. These vulnerable families are often women headed households and many women being widows and deserted wives.

A gendered Perspective : The voices of Women

By Elaine Enarson and Betty Hearn Morrow

Key Themes : Gender, Age, Class and Race and Disaster response

Research Question : How gender, race, class, relations interact in disaster impacted communities and households.

Research Methods : The authors use qualitative research methods such as focus group discussions and open ended interviews with disaster victims, service providers and through observations in tent cities, service provider organisation construct the stories of four fictional women – whose account is representative of many voices that they heard of. They state that the portraits are representative of the situations and experiences of women interviewed. They weave and merge their observations and feelings selectively to reflect the diversity of the sample and avoiding unrepresentative implications. All quotations in the article are transcribed in verbatim from the recorded interviews.

Findings :

- In general women without partners had less resources – money, transportation and labour – to complete disaster preparations.

-School children suffered from long term effects of Andrews as school system opened just three weeks after the hurricane. Children were in tears when the windows rattled. And the young people felt depressed, and showed symptoms of withdrawal, disruptive behaviour and violence.

-Women had to suffer with the 'double day' a the work and at home with expanded demands after hurricane.

-Women had spent countless number of hours in short term and long term community recovery – however they were severely underrepresented in important decisionmaking

-The disaster response also needs to document the emotional responses of men to disaster – who after the hurricane Andrew showed signs of suicide, alcoholism and violence.

-The tension levels at the relief centres reflected cross cutting patterns of race, class, gender. The agencies – from federal to local were not prepared to deal with the multicultural diversity of south florida.

-Direct Service providers also mentioned that low income single mothers were having the toughest time – as public housing where they stayed was destroyed and the pace at which it was built was very slow,. About 2 years after the storm, approx 20% of the public housing remained unrepaired. This delay was due to slow release of public funds as well as reliance on private funding for rebuilding.

-Whilst women focused on the children;s needs, several of the women were ill; and complained of headaches, vision problems, sore throats due to living in damp apartments close to debris. Heavy reponsiblities made them exceptionally overwork and emotionally stressed.

-Family conflict was seen as the by-product of frustration and uncertainty with overcrowding a contributing factor. This could have been dealt better with increased child care programme – however funds for this came in very late.

-Male desertions was reported frequently by the respondents as men could not take the 'pressure' following disasters.

-Service providers also confirmed that the first person in each address submitting an application – often the man with transportation received the check. There were many reports of FEMA benefits intended to replace the household possessions being misused by men for personal purposes like buying cars or supporting relatives in other countries

-Those with least resources after the storm – often single mothers, grandmothers – tend to get in to the limbo of 'temporary' housing.

The authors conclude that while the profiles document a range of commonalities of women's experiences, - showing that women are central to household and community recovery, and their needs gender specific, they are also impacted by their ethnicity and class. They suggest that gendered analysis of the disaster is important to mitigate the impact of the disasters. They suggest that further research on women's vulnerability to disasters, secondly on gendered impacts of disasters, and third on women's capacities and resources for responding to the disasters. From the policy perspective, the authors suggest that women absorb the social costs of being largely excluded from the disaster planning and recovery initiatives and that disaster planning need to account for impact of gender relations on social structures and interactions. Further they suggest that women being instrumental in preparing households for disasters, should be involved in community based disaster planning and mitigation initiatives as equal partners to build democratic disaster resilient communities Women's needs need to be addressed in emergency response and long term recovery including economic recovery.

Women's Disaster Vulnerability and Response to the Colima Earthquake

By Carolina Serrat Vinas

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998 (pg 161-172)

Key Themes : Gender and disaster

Research Question/Method used : Responses of the women in two district communities in Manzanillo municipality impacted by the Colima Earthquake in Mexico on Oct 1995. The methodology included direct observations after the earthquake immediately as well as one year and several months later. Interviews were conducted with injured families – mainly women. Further neighbourhood organisations, formal authority were also interviewed. Questions were asked – what happened after the disaster – and how they felt about work, politics, authorities, nhbd, families and everyday life.

Concepts used :

Disaster as a social process: The research looks at disaster as a social process in the sense that not only impacts but also the social causes and responses by the civil society are used to develop the frame of analysis. 'Disaster vulnerability is looked upon a historically developed socio-policial condition that determine degree of damage, the capacity to confront the damage, and the ability to recover from the damage'.

Findings:

District of Burocrata : The people after by the disasters were highly educated – such as school teachers, retired public servants – and were capable of organising to demand for their rights, which potentially diminished their disaster vulnerability. Prior to disaster they had nhbd associations –which after the disaster was ratified as committee for reconstruction. They assessed the damage and developed plans for reconstruction. Months after the disaster around 30% of houses were declared to be on high risk soil and were to be demolished. Further, several households were declared as not poor and therefore not in need for help. The residents – were agitated and discontented leading to volatility of the situation.

Women interviewed after the earthquake – also members of neighbourhood association said that there struggle is not 'political' but for the family's well being. Interestingly men also said that there struggle and concern was for their families. City halls officials said that 'women are difficult to control, appear in groups without any organisation, speak at the same time, and do not leave without resolutions of their demands'. This showed the machismo attitudes amongs the authorities who did not want to negotiate with the women at all.

The study found that women were a fundamental positive force in the struggle and made up the majority of the neighbourhood associations. Women's traditional roles in the families continued even after the disaster and they thus worked outside and in the household. Women now involved in the organising after the earthquake said that their participation in non traditional labour, associating, organizing, struggling for their rights made them feel more useful, stronger and happier than before.

La Liberted District

Most of the inhabitants in this area – had different socio-economic conditions than those in Burocrata. This area was characterised by large families, overcrowding, and heterogenous populations. Before the disaster the neighbourhood lacked social organization. Here the residents struggle – after the disaster was also more disorganised.

Women from the district explained that their problems were directly related to women's situations as manager of the household resources and caretakers of childrens. Livelihoods were affected -Women running stores – suggested that even if the stores did not suffer physical damage – they could not sell much as people did not have resources – and do not make much profit. Food continued to be a problem for many – with prices for basic commodities very high. Women said that their poverty conditions were not generated by the disaster and the aid provisions did not reduce their vulnerability in any significant way. On the contrary social, economic and gender inequalities amplified during the disasters.

Overall comments on Gendered and Disaster Response from the two districts:

-According to women interviewed, Women organise more effectively than men.
-Women openly show their emotions – fears, anxiety, pain and frustration – while culture repressed the expressions of emotions in men.
-Women are in the central axis of family care. As principle providers they have an urgent need to locate resources.
-women leaders in La Liberted were different from Burocrata. However in both the cases, natural leaders emerged, elected by neighbours than imposed by authorities. Most of the aid was distributed by women in both communities.
-Not all women are equally vulnerable – some women had high wage jobs, others have their own houses; some did not suffer direct damage but were emotionally affected.
-Not all women show solidarity with others in need. Many women however show compassion for those who have suffered from the earthquake.

Gender, Disaster and Development :The necessity for integration

By Maureen Fordham

In 'Natural disasters and development in the globalizing world', pg 57-74; ed, Mark Pelling, Routledge publication, London and New York 2003

Key Themes : Gender, Disaster and Development

Abstract : This paper interrogates the relationship between Gender, Disaster and development by a critical review of disaster research and practices in the Northern as well as Southern countries. It follows the trajectory of the three disciplines and the possiblities of their interconnections:

The disasters research field has traditionally been dominated by the Hazards research which has been criticised for its lack of attention to social theory. However, there has been some incremental changes following critiques of the hazards approach by Hewitt (1983) followed by Blackie et al 1994, Varley 1994, Comfort 1999; Cannon 1994 who then pioneered the social vulnerability perspective whose focus was on underlying socio-political, root causes of disaster processes.

The idea of Development Studies is a contested terrain - however, the development studies – has made a useful addition of gendered development theory and practice. This work has highlighted the vulnerability and capacity of different social groups, especially women and more participatory approaches to decisionmaking and policy implementation. However, if as suggested by Anderson and Morrow 1998, the use of vulnerability and capacity analysis in disaster contexts constituted a important conceptual advance for the disaster studies.

The discourse on gender has evolved over time – from inclusion of women to focus on their empowerment. And even into the 1990s many books on hazards and disasters failed to recognise the analytical categories of gender, women and feminism.   An area of interest in the development arena – violence against women emerged at a late

and on a small scale in certain researches in disasters – (Larabee, 2000; Ralph 1999; Fothergill 1999; Wilson et al 1998; Enarson 1997).

The author concludes by suggesting that calls for integration are easy to make, but are difficult to achieve on the ground. Each of the above concepts are complex and its meanings context dependent. However the building of the sustainable, disaster resistant communities in both industrialized North and industrialising South, albeit complex needs to be undertaken. While institutional fragmentation, competition and misunderstanding are a major threat in both academic and practitioners field, the chief danger is that rhetoric of integration may ask the largely technocratic concern – the failure to grasp the root causes of vulnerability at social and political level. In that sense, the integration needs to happen at different levels – the academic, policy, practitioner as well as political levels.

Women's Participation in Disaster Relief and Recovery

by Ayse Yonder with Sengul Akcar and Prema Gopalan

Key Themes : Gender and Disasters

Summary :

Treating Disasters as Opportunity Vs traditional topdown model:

Women suffer four types of indirect losses following disasters:
- Loss of productive employment outside the home (domestic, industrial, or commercial);
- Loss of household production and income (including that of the back-yard economy and of small businesses run by women from their homes)
-Increase in reproductive work; and
-Other economic damage resulting from outstanding debts or loans.

A typical disaster response phase consists of relief, reconstruction and recovery phases. Across these stages, serious problems arise over what, when, and how disaster aid is delivered. International agencies and national governments typically provide emergency assistance in a top-down manner that reduces affected people to victims and passive recipients of aid. This leads to dependency and cynicism within affected communities—problems that carry over to the recovery stage.

Emergency management rarely take their opinions into account. Although women commonly organize themselves to distribute supplies, establish shelter, and pool labor and resources to create community support services to meet basic family needs in the emergency period, their efforts are often invisible or go unacknowledged. In the reconstruction period, entitlement programs focus on individuals and their loss of property. This approach favors owners in affected communities and geographical regions and excludes or harms nonowners (the poor, women, and ethnic and other minorities). Conventional response programs fail to recognize women's participation in decisionmaking.

This paper suggests that disaster should also be looked upon as an opportunity to make groups less vulnerable, improve conditions of living for women and must favour equity. For eg, disasters push women out of their traditional roles and taking up new roles.

The three case studies discussed in this paper describe how groups of local women formed and organized to secure housing, livelihood activities, and basic services after earthquakes struck two states of India (Maharashtra and Gujarat) and the Marmara Region of Turkey. In both countries, women-focused, nongovernmental organizations from outside the devastated areas (Swayam Shikshan Prayog, or SSP, in India and Kadin Emegini Degerlendirme Vakfi, or KEDV, in Turkey) reached out to and organized local women's groups to enable women to participate in relief and recovery processes and to build the skills and capacities necessary to sustain their involvement..

The innovative programmes taken up in India - included women being involved in non traditional activities such as managing large scale home repair programmes. This was done by nurturing leadership and skill training – of house construction to the women so that the houses could be earthquake safe. Techniques such as participatory mapping was done to design new settlements in Maharashtra. In Turkey, women were organised to manage relief in the tent cities – parts of which they used as centres for women and children. At the centers, the women discussed the earthquake, the relief programs, and events around the region. They organized exchange or marketing visits to Istanbul and started making plans for the future – and negotiated with the Turkish Ministry for a income generation projects. The other innovative activities included developing service production cooperatives and housing cooperatives by women. Finally, the programmes included exchange visits between different project staff and community women leading to transfer of skills and adoption of the best practices developed in the respective projects to enable empowerment of women.

The case studies of the SSP and KEDV experience highlight how postdisaster situations can be opportunities to empower women at the grassroots level, build more resilient communities, and initiate long-term social change and development.They also illustrate how NGOs can focus on facilitating and partnering to leverage resources and thereby galvanize affected women's groups to scale up and sustain their energy and organization over the cycle of relief to reconstruction. Although the Indian and Turkish strategies were different, they jointly suggest key elements of effective
practice. Women were placed them at the center of reconstruction processes and enabled through capacitating processes.

Lessons Learned

Not only do the case studies pinpoint postdisaster opportunities for women's participation and contributions, they also underscore the conventional attitudinal and operational approaches to postdisaster programming and resource allocation that must be overcome to support women's grassroots organizations so that they can be fully effective in re-storing their communities in the relief and subsequent recovery processes. The four barriers that needed to be overcome was – overcoming biases around gender roles and professional expertise; overcoming lipservice and enabling interventions that genuinely reflect principles of participation and sustainability; overcoming top down brick and mortar type of govt progrmmes and rebuilding lives and livelihoods; and overcoming misconceptions about grassroots womens groups being small scale and low tech despite evidence to contrary. The case studies indicate that grassroots efforts can, if supported, rapidly mobilize a critical mass of actors. Women can acquire non-traditional skills and take on information-giving roles often considered to be the male domain, overcome male opposition and skepticism, and take on active leadership to rebuild their communities. Reducing the economic vulnerability of women and of their families is a key mitigation measure that reduces potential losses from future disasters. A longterm development perspective is critical,
starting at the relief stage, in the allocation and use of resources in order to foster self-reliance, build local capacity, and avoid dependency.

'Men must work and women must weep' : Examining Gender stereotypes in Disasters'

By Maureen Fordham and Anne-Michelle Ketteridge

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998 (pg 81-94)

Key Themes : Gender and Disaster

Abstract : This paper emphasis on the ways in which - by and large women in particular are made more vulnerable in a disaster process through the use of traditional gender model and roles. Instead they suggest a reconceptualising of the frames of analysis leading to a more sensitive and gender enabling action in disaster contexts.

Research Method : Case studies of flood impacted Strathclyde Scotland; Perth Scotland and Towyn, North Wales. Semistructured qualitative Interviews were held with 23 people in two locations in Scotland supported by observational techniques and secondary data analysis with discussions with professionals working on the third location in Wales. All the areas selected had areas of social deprivation and exclusive selection of gender as

a determining variable is problematic. Instead there is a complex intersection between gender, social class, race, culture and ethnicity.

Concepts used:

Private-public model

The private-public model is a useful simplification of the spatial manifestation of economic relations in capitalism. However this does not fully represent women's reality as women who are closely associated with private sphere also do wage labour which goes undervalued or unrecognised in public domain. The authors suggest that instead of using this dichotomy, it is important to include the third sphere of community work and the involvement in the community work in disaster process. This reconceptualising is a useful way forward as it retains the use of public private dichotomy as they illuminate the economic and social relations of patriarchy in capitalist societies.

Gendering of roles and behaviour in disasters:

Disaster management tends to be a topdown, male dominated, command and control model which not only reinforce existing masculine gender dominated relationships but also male domination in traditional female spheres of authority. For eg, in disaster situations the female authority in preparing food is diminished by the emergency managers who are typically men – who manage these operations.

Women as vulnerable group:

Women form a vulnerable group as their bear the increased burden after the event of flooding due to their low economic and social status as well as home and child care responsibilities. Further women also provide care to the elderly neighbours. In current contexts, it is expected that women will manage working outside without interference with her domestic responsibilities.

Findings:

Following are some of the typical outcomes seen in the disaster situations:

1) Stereotypical expections of a return to 'normality':

As one of the main aims of the disaster management is to get the families to normalcy – once the families are in 'temporary accomodation' it is assumed that urgency is over. Yet the conditions of the temporary accommodations increase the stress levels for women who have to care for the young children and pregnancy. However since these situations fall outside the 'economically productive sphere' they do not imply similar urgency for emergency managers

2) **Normality redefined :**

The return to normality defined by the emergency planners is an oversimplified picture. However, the complexity and difficulty involved in creating a home and the symbolic nature of home – in such oversimplification are underestimated. By their very nature, the loss of home – intangible as it is – is impossible to replace or compensate.

3) Women were stronger:

Interviewees showed resilience although stressed by poverty and range of discriminatory behaviours before, during and after disaster. They not only survived but came out stronger.

4) Men's emotions and extreme events

Men appeared to had coped well with the extreme events but did not express the anxieties they felt as the loss of their traditional roles of protectors or providers for the family.

5) Gendered care and support systems

Women are associated with care giving in both private and public spheres. However it is necessary to have gendered representation in care and support organisations to support men as well as women.

Conclusions   and   policy   implications

This research has given examples of stereotypical attitudes and behaviour in emergency response context. The private sphere was considered uncomplicated and its complexities ignored. Thus women's potential to participate in the emergency planning and management went ignored. Men are also stereotyped as hiding their emotions and alienated from seeking care which is feminized. However what is needed is a better understanding of the differences in the women and men's needs and responses in disasters. The case studies also show that without such appreciation, women are made more vulnerable in disasters. The inclusion of women in emergency management could help address the lack of understanding. Disasters provide an opportunity to make the ideological shift to break down the public –private dichotomy and its inherent hierarchy that makes feminized private sphere subservient to the masculinzed public sphere.

The neglect of Gender in Disaster Work : An Overview of the Literature

By Alice Fothergill

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998 (pg 11-25)

Key Themes : Gender and Disasters

Research Question : What we can learn, build upon and challenge from the current literature on gender and disaster?

Research Method : Review of around 100 studies on disasters which have some gender dimensions

Summary :

Whilst disasters have now been recognised as social phenomenon, and are rooted in social structure; the larger social context of which gender is a crucial dimension continues to be underdeveloped in disaster scholarship. The author has used a review of 100 studies which have addressed gender issues to some extent in the disasters. The findings are as follows:

Exposure to Risk: Gender influences vulnerability in disasters and exposure to risks. The researchers argue that women's heightened exposure results from their social class, their care-giving roles and their relative lack of power and status.

Risk Perception : The literature suggests that women perceive disaster events or threats as more serious and risky than men, especially if it threatens their family members.

Preparedness behaviour : This behaviour pertains to preparedness activities prior to disaster to mitigate its effects. The literature on this issue is minimal however the available data shows that women and men have or perform different and distinct prepared ness activities and women are often kept out from the formal disaster preparedness activities taken up by the organisations.

Warning communication and response:
This stage refers to the response of the people after the warnings are issued – for eg radio or other broadcasts or sirens. Gender is again found to be an important variable in this stage – it seems that women are more likely to receive risk communication, due to their social networks and respond with protective actions like evacuation.

Physical impacts:
This refers to losses immediately after the disaster – such as morbidity, injury and mortality rates. The data in US shows limited mortality rates, and therefore are not conclusive on this issue. However there seems to be an increase in domestic violence after the disaster and that women could die more due to discrimination or the location at the time of the disaster. It appears that gender variation by mortality and morbidity rates vary by the disaster types and location in the disaster. In developing world too, women are disproportionately impacted that

is more women have died or injured after the events such as earthquake in India or Cairo, Egypt or cyclone in Bangladesh.

Psychological impacts:

Disasters produce trauma and distress. The work is extensive in this area, the available literature shows that findings are mixed. However majority of the studies show that women and female children have more emotional problems, while men show more alcohol drinking. Women also show more PTSD – posttraumatic stress disorder and show symptoms such as anxiety, depression.

Emergency Response:

Gender is found to be an important variable in emergency response depending upon the event particularly in terms of the division of labour in response work and their inclusion in the emergency response work – which continues immediately after the disaster for some days. Tasks such as looking after the children, food preparation are continued to be done by the women, while the leadership positions and volunteering is often done by men. Women work in private spheres while men work in public spheres in the response stage. Studies in developing world suggests that women's skill are underutilised in the disaster response and that they face discrimination in the relief due to their social status.

Recovery:

This is the long term – or about one year after the disaster – a time frame during which life will return to normal or to improved level to some extent. The literature looks into issues of relief assistance, family relocation and relationships. Here too gender is a variable, with women seeking assistance for their families, while men looking at the assistance as a stigma. Also poor women face most difficulties in recovery. In developing world, women also face more discrimination, abuse and hardship and less medical attention.

Reconstruction

This is the final stage of disaster cycle – the literature points out that poor women have most difficulty in returning their lives to normal and that females may have more difficulty in procuring loans than the male counterpart. Those who are already vulnerable before the disaster have less resilience after the disaster. Thus women from the low income group fare poorly in the reconstruction phase. Working class women already burdened with work outside experience increased burden now after the disaster in this phase. Reconstruction in developing world suggests that women are more adversely affected in the long term – with losses of livestock which are under women's control and their loss have a direct impact on the women's economic wellbeing.

The author concludes that gender is significant variable in nine above stated stages in disasters.

Domestic Violence after Disaster

By Jennifer Wilson, Brenda Phillips and David Neal

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998 (pg 115-124)

Key themes : Gender and Disaster

Research Question : To what extent community organisations have responded to domestic violence after disaster?

Research Method : Three case studies used namely : Earthquake in Santa cruz, California in 1989; Lancaster, Texus affected by Tornado in 1994; Dade County, Florida after Hurricane Andrew in 1992.

Data was collected through semistructured open-ended interviews using both organization – such as Red Cross, Shelters for domestic violence and the community as units of analysis. Further secondary data such as reports of the organisations, media accounts, census data was also used.

Concepts used:

Women and Violence in Disasters

Social problems increase after disasters, and studies have suggested that domestic violence increases after the stress of disasters. However other conditions also need to exist – such as gender stratification including social, economic, familial and psychological oppression. Stress such as disaster event itself is not a sufficient condition to initiate violence. Rather, an individual's place in the social structure creates the likelihood of the person experiencing violence – or furthering of vulnerability. In other words it is the inequitable systems of patriarchal systems that lead to violence – a form of male domination over women.

Findings :

-Three out of four representatives of domestic violence centres in Santa Cruz County perceived domestic violence to be a problem after the disaster. Some felt that the domestic violence had increased after the disaster. Lancaster representatives of the different organisations as also police department – on the other hand – felt that there was not much rise in the domestic violence and that reported incidents remained the same. However, most accounts in Dade country after hurricane Andrew suggested that incidences of violence had increased – that Miami's help line reported a 50% increase in the spousal abuse calls. Further, a random survey done of 1400 homes by state agency two months after the hurricane, reported that 35% reported that some one in the home was on the verge of losing verbal and physical control . Enarson and Morrow (1997) also reported evidence of increased violence in the qualitative study after the hurricane Andrew.

-The most common action taken after the disasters was providing counselling and shelter services to victims of abuse. In particular a key factor was the pre-disaster awareness of domestic violence as a problem amongst the organisations. Those who provided such services were aware of the problem and they defined the problem of domestic violence after the disaster and had some prior experience of extending these services. Action was however not taken where pre-disaster concern or awareness on domestic violence was low . Defining social problems as unmet community needs – established priorities for action. This could be one reason as to why Lancaster agency could not detect the problem of domestic violence after tornados.

-How organisational personnel perceived domestic violence issues before the disaster also influenced their perceptions and handling of domestic violence after a disaster. There is a need to know more about community contexts and see what linkages exist between pre and post disaster conditions. Agencies and Response organisations and communities need to develop relevant plans for post disaster response – without which women's vulnerability will be exacerbated .

- Other policy suggestions are about inclusion of domestic violence as a key issue to be included in the emergency response plans developed by the communities and agencies. Further training needs to be given to emergency workers in order to equip them respond to potential disasters.

A comparative Perspective on Household, Gender and Kinship in Relation to Disaster

By Raymond Weist

In 'The gendered Terrain of Disaster : Through Women's eyes' edited by Elaine Enarson and Betty Hearn Morrow; Praeger Publishers, USA 1998 (pg 63-79)

Key themes: Gender, and Disasters

Abstract :

Societies are organised in terms of kinship ties – however the global capitalism is now undermining the kinship and reducing the ability of the individuals and families to cope with the disaster.

Whilst kinship has oppressed women, they also play an important function in the lives of the communities and women – in poorer countries, disaster assistance is often provided by the domestic groups or kinship groups as against the developed countries which may rely more on the institutionalized responses. The domestic social structure gives meanings for the response in emergency context, but they are also a source of vulnerability. The pre-disaster conditions and the economic, social and political contexts shape these conditions – thus capacities as well as vulnerabilities produced by them are examined by the author. Gender and kinship ideologies, normative

constraints and variability in class and gender based entitlements and the changes in the domestic structures and disaster capabilities are reviewed. The Bangladesh case study highlight the differences in the pressures felt by the families living with riverbank erosion and its relation with the types of extended domestic units. The female headed households come out as vulnerable households.

Research Question : How does domestic structural arrangements affect vulnerability and coping capacity?

Research Method : Literature review and case study of Bangladesh and examination of kinship ties in disaster context

Concepts used:

Household kinship and gender:

Not all members in the household or families are equal as culture differentiates them on the basis of age, gender, social class leading to power differentiation and entitlements. Thus the structural reproduction of inequalities in distribution are not only class based but also gender based A key marker of this is the gender division of labour existing in the society. After Sen (1982); Kabeer (1991) argues for a broader concept of entitlement that accommodates the intra-household distribution based on normative kinship and family structures. This means women can become poorer due to deterioration of collective entitlements of family based households or alternatively by the breakdown of the family units and their claims arising out of it.

Changes in Domestic structure in a developmental cycle:

Domestic groups are transformed over time – with the aging of the members, birth of the new members and rules of marriage and residence in the given culture. These natural transformations of the units over time result in varying capacity of the households to meet their needs – they increase and decrease the vulnerability of individuals and these social units – for eg widows and widowers living alone represent a change in domestic group structure. The size and composition of the domestic groups, inheritance patterns , resource availability and control – all have a bearing on the continuity or fragmentation of the given domestic group.

Flight of men and Female headed households in disaster contexts

Abandonment, Separation, Divorce, death, or maritial discord produce structural effects on the domestic groups ability to meet their needs – and women and children are worst affected in these changes. In a patriarchal context, an abandoned women may be tied to destitution and dependency. Women experience food malnourishment – and in disasters- women and girls are the primary victims of food insufficiency. Women face marginalisation – in terms of ownership of land and livestock and this affects the female headed households. In Kabeers terms, Existence of female headed households are a signal of both household and female pauperisation as a result of the breakdown of family entitlements. Women's interests continue to be tied to the fortunes of their family unit as long as family based entitlements are respected. In a disaster contexts, women when abandoned by men or separated due to conflict induced by disaster, are more likely to remain behind in reconstruction efforts .

Findings from the Bangladesh case study:

Regular flooding in Bangladesh and loss of land through riverbank erosion is endemic affecting millions of people. Bangladesh has patriarchal bias in resource control and –resources are also controlled by power brokers.

-The Char and embankment zones have nearly three times as many women headed households as the non eroded zones. Most of these households are headed by women of men who are temporarily absent – that is gone for labour work elsewhere. In kazipur area studied, the women headship is a product of temporary male migration – where migration is also an important household survival strategy. The embankment zones show a sizeble women headed units – which may not signify destitution – but depends upon resources, and the dometic group arrangements and mature sons to carry out male dominated tasks. By and large Women headed households usually lacked land resources in Kazipur area and due to their younger age had more dependent children than men headed households.

It was found in Kazipur that extended households arise in the light of the disaster as some households offer sanctuary to elders and orphans. During disasters, larger families also offer greater flexibility for caring for dependent children – potentially freeing some women in the domestic group to concentrate on hazard

preparedness and emergency food distribution. Land distribution patterns in Kazipur also shows that almost all the female headed households are landless and land is concentrated in the hands of handful few men. A high proportion of landless rely upon the kin for a homestead under conditions of patronage. These conditions means subsidized labour for large landowners – in peak seasons - however as these conditions also marginalise poor men who lose respect and status and – they in turn abandon their families or resort to more violence to women. This family fragmentation is aided by riverbank erosion and displacement which in turn facilitates consolidation of control of land by few powerful families (Zaman 1989).

The data from Bangladesh thus suggests that riverbank erosion as a form of disaster can serve to aggravate existing imbalances in the society – by facilitating concentration of resource control in the hands of few men and a small percentage of the population. The natural disaster strengthens the hands of the male brokers and displace persons become a captive labour. Women with kinship or patronage to the land lords are granted access to homestead land in exchange for labour (Zaman 1989); Since men migrate in search of work or simply abandon their families, this captive labour is disproportionately women.

The case study has policy implications of different view of family. The view of male as benevolent despot suggests of interventions to improve the capacity of head to fulfil his role – it also ignores womens role in production processes. However this view does not address inherent and gendered inequality within a domestic group. The cooperative –conflict view acknowledges inequality within domestic group and implies a strengthened bargaining power among women within a family – through sustained development interventions to that effect.

Challenging Boundaries : A gender perspective on early warning in disaster and environmental management

By Maureen Fordham

United Nations Division of Advance or Women and ISDR, Expert Group meeting on 'Environmental Management and the mitigation of natural disasters : A gender perspective, 6-9 November 2001 Ankara, Turkey

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Key Themes : Gender and Disaster

Summary:

A gender perspective on early warning in disaster and environmental management requires that many boundaries are challenges – including those set by gender relations themselves and the different academic domains such as environment management, natural resource management and disaster management. Whilst both are now being linked through the notion of 'sustainable development', significant divisions persists.

Early warning refers to mitigation or risk reduction as well as disaster preparedness frameworks. This paper suggests that a neat categorisation of the disaster cycles – relief, recovery and reconstruction, as used by emergency managers and researchers alike is problematic as warning issues are linked up with response issues too. However an hazard perspective to risk reduction – leads to the domination of the use of technology to forecast extreme events over other forms of early warning system. This technology driven approach is typically male centred and its dissemination also make centric (Anderson 2001).

The disaster research is only asking questions as to what extent are the disaster 'natural' that is influenced by the human activity leading to ecological destruction. And whilst development research tried to connect disasters and development through environment, in practice the divide has remained. With vulnerability paradigm used as a lens to understand and analyse disasters, there now appears some crossover between development and mainstream disaster research.

Now research on warning systems has shown that the formal or official warning systems are often top down and failures have arised due to lack of social/cultural knowledge about the recipient groups – for eg, transmissions made in language not understood by an ethnic group etc. The weakest link has been in the reaching to the at-risk communities themselves and working with the local people themselves to develop a flexible system which is context as well as user driven than what experts might prefer.

Research has also shown conflicting evidence about women and early warning systems. Some show that women are more likely to be in receipt of, and act upon warnings making them less vulnerable and more likely to be active in emergent community disaster; other research studies – largely drawn from the South shows women are disadvantaged in terms of access to warning/prevention information and decisionmaking power. In Bangladesh, for eg in 1991, cyclone and flood, warnings were passed from men to men in public places and did not reach women. Even when they received warnings, they were constrained by cultural norms that restrict their movement in public spaces. However in terms of capacities, research also shows that women are making significant contributions to disaster mitigation/prevention and environmental management. There are positive examples for eg also from Brazil where women have used radio to mobilise and organise at local level and increased their participation in sustainable development initiatives. Further, dissemination preferences have been found to be different between men and women in South Africa.

The paper concludes by suggesting that gender perspective on environmental management and natural disaster mitigation represents a newly expanded field of enquiry and action and a need for such connection is urgent when seen in the context of sustainable management and development. It also suggests that gendered warning and mitigation strategy need to be locationally and context specific – that there is no single type of ideal preventive structure or warning system appropriate to every locale or impending disaster situation. Planning must start with specific needs of diverse social groups. Thus early warning dissemination methods must serve diverse needs and situations. Further warning information need to ensure women's needs and circumstances are recognised. Ultimately the warning system must deliver what users and women what rather than what experts think should be disseminated.

Gender Based Violence in Sri Lanka in the after- math of the 2004 Tsunami Crisis: The Role of International Organisations and International NGOs in Prevention and Response to Gender Based Violence

By Sarah Fisher

A dissertation submitted to the University of Leeds Institute of Politics and International Studies, in partial fulfilment of the requirements for the degree of Master of Arts in International Studies. 6th October 2005

Key Themes : Gender and Disaster

Research Questions:

1. Is gender based violence an issue of concern for tsunami-affected women and has the incidence of gender based violence appeared to have increased since the tsunami?

2. What role are NGOs playing in preventing and responding to GBV in terms of organisations that have specific GBV programmes in place in tsunami-affected areas?

Research Methodology

Fieldwork was carried out in Sri Lanka over a period of eleven weeks from May to July 2005. The research is qualitative with a primary emphasis upon the work that organisations in post tsunami phase are carrying out. In-depth, semi-structured interviews with key staff of NGOs – both national and international known to be working on gendered violence related initiatives. The incidence of GBV was also investigated in these interviews, with interviewees asked for their opinions and knowledge concerning gender based violence in tsunami affected areas.

Summary of the findings:

In reference to the 2004 tsunami crisis in Sri Lanka this Masters dissertation examines the role that International Organisations (IOs) and International Non-Governmental Organisations (I/NGOs) can play in preventing and responding to Gender Based Violence (GBV) in natural disaster situations. Whilst women are commonly acknowledged to suffer increased vulnerability to the effects of natural disasters, their particular vulnerability to

GBV in a natural disaster context is less recognised and remains a neglected area within both disaster management and international attention to GBV.

Within hours of the tsunami having devastated entire coastal regions of Sri Lanka tsunami-affected women were subjected to rape and physical and sexual abuse. Women's increased vulnerability to GBV, and in particular domestic violence, remained somewhat hidden but persisted well beyond the initial emergency phase of the disaster.

A small number of UN agencies and INGOs undertook specific initiatives to prevent and respond to GBV, adopting a variety of approaches. These organisations were those working on GBV previously, and many of the issues contributing to post-tsunami GBV and limiting its management were the same as in the pre-tsunami context. For these reasons it was not always possible to distinguish pre- and post-tsunami GBV interventions as such.

Whether or not an organisation sought or had the capacity to address GBV in a particular location was dependent on previous GBV work, such as whether prevention and response mechanisms, services and actors were available. Other influences included how well established an organisation was in the area, the existence of capable local partners, the presence of staff with knowledge or interest in GBV work, and the role of local activism in drawing attention to women's needs. GBV activities in the first few months of the disaster were relatively few, and related to pre-tsunami GBV initiatives. New programmes were in the initial stages of implementation or being planned around six months after the tsunami.

Gender and Earthquake Preparedness

By by John-Paul Mulilis,

in Australian Journal of Emergency Management(Autumn 1998-99) pg 41-50

Key Themes : Gender and Disaster

Abstract

Despite the fact that males and females appear to differ in their hazard preparedness and mitigation attitudes and behaviours, emergency managers typically have not focused their efforts on this area. Psychological explanations of differences in gender preparations have traditionally revolved around gender stereotyping. PrE theory suggests that differing attitudes and behaviours result from differences in appraisal of resources relative to threat. The present study was conducted to investigate masculine and feminine differences in earthquake preparedness and to explore reasons for these differences. Results suggest that males and females may engage in different types of earthquake preparedness and mitigation activities, and that these differences may be the result of the way that males and females cognitively appraise the threat of an earthquake, an explanation that would be consistent with PrE theory. Disaster preparedness and mitigation is a topic of much concern, especially in earthquake-prone areas such as California (e.g. Bourque, Shoaf, & Russell, 1995; Mulilis & Duval, 1995). Furthermore, this same body of literature reveals that males and females appear to differ in their efforts along these lines. Examples of such differences include (1) that due to the structure of many societies, females may be more at risk in a general way to the consequences of hazards and disasters than males (e.g. Morrow, 1995; Valdes, 1995), (2) both formal and informal personal post-disaster community response services are more likely to be performed by females than males (e.g. Morrow, 1995; Neal & Phillips, 1990; Reskin & Padavic, 1994; Valdes, 1995), (3) males tend to be more active in early post-disaster recovery efforts, while females tend to be more active in later postdisaster recovery efforts (Morrow, 1995a), and (4) the family unit which has specific gender-related functions in the preparedness, mitigation, response, and recovery aspects of the disaster cycle (e.g. Abel & Nelson, 1990; Drabek, 1986; Fitzpatrick & Mileti, 1991; Hill & Hanson, 1962; Nigg & Perry, 1988; Perry, 1987; Quarantelli, 1960; Shelton, 1992). The above behavioral differences between males and females seem to point to the existence of a gendered dimension in disaster-related activities. Such a dimension would be consistent with the findings of Morrow (1995b) who notes that women are generally involved in more mitigation and preparedness activities than men, particularly for activities centered inside the house. Furthermore, mitigation and preparedness activities that men do perform, usually revolve around behaviors related to the outside of the residence (e.g. structural reinforcement of walls).

The Relevance of Considering a Gender Perspective in Damage Assessment and Recovery Strategies. A Case Study in El Salvador, Central America.

By Angeles Arenas Ferriz

Presented at United Nations Division for the Advancement of Women (DAW)
International Strategy for Disaster Reduction (ISDR) Expert Group Meeting on "Environmental management and the mitigation of natural disasters: a gender perspective" 6-9 November 2001- Ankara, Turkey

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Key Themes : Gender and Disaster

Research Method :

A combination of primary and secondary information was used in the research for this paper. The primary information was obtained through participant observation, semi-structured interviews with affected people, Key informant interviews and a survey. The secondary information was obtained through the revision of databases and literature.

Summary :

This paper's effort is to make gender aspects visible in the framework of the socio-economic damage assessment of the January and February 2001 earthquakes in El Salvador.

Disasters affect all the groups in different ways. The impact on each group depends on its risk conditions. In recovery and in emergency periods, many women suffer from direct lost of property and income. In an emergency situation, women have to dedicate many hours to satisfy necessities and extend their reproductive roles from the family to the community. They assume most of the basic social activities implemented by the government if the normal course of those activities were not to be interrupted by the disaster. On the other hand, new remunerated employment generated after the disaster (cleaning of rubbles, recovery work, rehabilitation of housings, and so on.) are, in their majority, carried out by men, while non remunerated tasks are in their majority carried out by women.

Damage assessment and financial recovery plans are gender blind. This absence has a negative impact on women's recovery capacity and favours the increase of gender inequality. Although woman are directly affected, gender inequality affects indirectly the whole community. To reduce the gender inequality it is indispensable to reduce the social vulnerability against disasters.

The purpose of the paper is simply to make a quantification of damages related to the informal economy of women who lost their houses. Direct damages have been taken into consideration, but also other elements that have impact on the recovery capacity and could increase gender inequality:
a) Loss of household goods directly linked to women income generation.
b) Loss of household goods considered women's property.
c) Loss of women's regular income during the emergency and relief period.
d) Women's loans contracted to finance small scale business or house
property
e) Women's time dedicated to emergency and recovery tasks in detriment of
the income generation..
f) Women's participation in decision-making

In order to quantify loss in the household, it is necessary to understand that the household is not only a place for living but also a productive area for women, and plays a key role in the social and economy relations in the community. Although the report emphasizes quantitative aspects, it also considers the qualitative dimension. The micro character highlights the assessment of the socio-economic impact of the disasters.

The results of the investigation emphasize the necessity to bring out gender aspects in damage evaluations. The average damage (valorisation of building not included) for each Salvadorian women that has lost her household

during the earthquakes is around 73% of the GDP per capita; if the non-remunerated work in the emergency and rehabilitation is also considered, the estimation is more than the GDP per capita.

In assessment evaluation it is necessary to consider the following aspects:
–Women's income generation (not only married women)
–Subsistence activities (home gardening and animal husbandry) and informal sector
–Household goods and time dedicated to relief and recovery tasks
–Decision-making
–Daily survival strategies

In a recovery proposal, it is necessary to have projects focused on especially vulnerable groups, in order to make the economic recuperation and the social recovery easier. Recovery is not a simple process of relocation; it is an opportunity to build a better society. In this way, actions to reduce vulnerability of social groups and increase gender equality must be included in the recovery proposals.

Enarson,E.,1998.'Battered women in disaster: A case study of gendered vulnerability,'Disaster preparedness resource centre, University of British Columbia.

Key Themes : Gender and Disasters

This paper highlights mainly the issue of violence against women and gender aspect. It focuses on domestic violence against women with an explanation that this is part of a larger complex of family violence including the abuse of elders and children. Author in this paper pointed towards the ignorance of the extent or nature of violence in the aftermath of disaster. She has addressed that there is a need for sustained national research initiative to investigate the incidence of violence of all kinds in wake of disaster.

Vetten,L. , 2005. 'Addressing domestic violence in south Africa : Reflections on strategy and practice', U N Division for the advancement of women.

Key Themes : Gender and Disasters

This report is based on the gender specific issue , that is violence against women. The report draws conclusions on strategies and good practices in relation to reforming legislation addressing violence against women. The paper describes some of the key innovations of the domestic violence act(DVA), and examines which women have been most likely to benefit from the DVA. It concludes by using these reflections as a basis for recommendations around good practice in the area of law reform.

Margaret,H. , 2000. 'Women Domestic Violence and post Traumatic stress disorder(PTSD),'Department of health and human services, School of social work, San Deigo.

Key Themes: Gender and Disasters

This project report aims at highlighting in detail the main objectives of the project undertaken by center for California Studies, California State University. The reports deals in detail the aim of the project and provides with the summary of empirical generalization from the literature available on domestic violence and PTSD and action guideline for intervention.

Wiest,R., Mocellin,J., Motsisi,D.,1994. 'The needs of women in disasters and emergencies', Prepared for the disaster management training program.

Key Themes: Gender and Disasters

The present work has been conducted for the disaster management training program of the UNDP and office of the UN disaster relief coordinator, with an aim to provide a general overview of the problems experienced by women in disasters and emergencies. Other objectives are to address gender bias in disaster related research and the integration of the report findings with disaster related research in general. The report also offers a framework for the integration of findings into the larger research program on disaster and emergencies.

Rees,S., Pittaway,E.,Bartolomei,L.,2005. 'Waves of violence- women in post tsunami Srilanka',*The Australasian Journal of Disaster and Trauma Studies*. Vol.2005-2.

Key Themes : Gender and Disasters
This paper describes a community based and developed program intended to support women and to reduce the incidence of sexual and gender based violence in post tsunami Srilanka. Preliminary data from the project is used to highlight some of the needs of women as well as the challenges in handling gender based violence and marginalization.

Orrisa State Disaster Mitigation Authority. Booklet, 2002. "Voicing Silence: Experience of women with disaster in Orissa", Published by OSDMA, Rajib Bhavan Orissa.

Key Themes : Gender and Disasters

This booklet is an attempt by the OSDMA to highlight women situation in disasters and to promote their role in prevention and mitigation at community and state levels. It explores women's particular vulnerabilities to disaster at community and family level, as well as their marginalization in political power and governance systems. Case studies discuss women's role in floods and droughts, during and after disaster. It also explores the possibilities for change, providing specific examples of how mobilization and organization of women in disaster scenarios can bring positive results. The booklet has wide relevance to state and nongovernmental agencies, researchers and other concerned with disaster mitigation, development, gender mainstreaming.

Just Die Quietly: Domestic Violence and Women's Vulnerability to HIV in Uganda, 2003., Human Rights Watch. Vol. 15, No. 15(A) , Source: Online Human Rights Publications.

Key Themes : Gender and Disasters

This report explores what the author consider to be the shortcoming of Uganda's government to protect women from domestic violence and discrimination thereby increasing women's risk of contracting HIV. This report documents widespread rape and brutal attacks on women by their husbands in Uganda. It is stated that in Uganda domestic violence laws have not been enacted and spousal rape is not criminalized which further aggravate the situation.

Wahed, A. and Shiekh, R., 2000. "Droughts in Tharparkar." Case study paper, Colombo 5, Srilanka.

Key Themes: Gender and Disasters

Conducted as part of gender research under the livelihood options for disaster risk reduction (LODRR) project, this case study focuses on the district of Tharparkar, and arid zone in Sindh province, Pakistan. The aim of the case study was to establish link between drought and socio- economic conditions from a gendered perspective and to identify options available to women to improve livelihoods. The specific case study information examines gendered impact of floods in relation to health and nutrition, literacy and education and economic and political participation.

Deare, F., 2004. "A methodological Approach to Gender analysis in natural disaster assessment: A Guide for the Caribbean. Women and Development Unit, Santiago, Chile.

Key Themes: Gender and Disasters

This document was prepared by Fredericka Deare, consultant for the economic commission for Latin America and the Caribbean (ECLAC), Under the supervision of the women and development unit, which mainly focuses on the issue of gender in response to natural disaster in the Caribbean region. The document present tools and methodologies to conduct gender analysis including; analysis of the socio- economic affects of natural disasters and a methodological framework for gender analysis such as gender analysis of the impacts on health and social network response, gender aspects underlying the division of labor and allocation of resources and evaluation of pre-disaster gender relations.

"The impact of disaster on women". 2001. Handbook for estimating the socio- economic and environmental affect of disasters. (ECLAC).

Key Themes : Gender and Disasters

The handbook deals mainly with the differential impact of disasters on women. It reflects an understanding that men and women reveal vulnerabilities peculiar to their sex when confronted by disaster situations. In the face of this reality, the handbook points that it is essential to keep a clear gender focus to be able to support women facing a disaster and to reinforce their capacity to overcome these situations. Such awareness can reshape reconstructions tasks and projects.

Gender and Natural Disasters, 2007. Fact Sheet, Women, Health and Development Program. Pan-American Health Organization, U.S.

Key themes : Gender and Disasters

The fact sheet developed by Pan American Health organization has highlighted the gender focus to the analysis of disaster mitigation and response. The issue like women's vulnerabilities during and after the disaster process and the reason behind that has been the main focus. It has correlated the aspect of natural disaster and gender perspective and highlights some of the common reason why gender issue takes a backseat in natural disaster event.

Addressing Gender in Conflict and Post-Conflict Situations in the Philippines

By Sonia Margallo

In Social development papers :Conflict Prevention & Reconstruction Paper No. 20 / January 2005. Can be dowloaded from http://lnweb18.worldbank.org/ESSD/sdvext.nsf/67ByDocName/AddressingGenderinConflictandPost-ConflictSituationsinthePhilippines/$FILE/WP+20_Web.pdf

Key Themes : Gender and Disasters

Abstract:

The paper is a review of how gender is addressed in various post-conflict situations in the Philippines with primary focus in Mindanao. The review identified three major categories of issues in post conflict Mindanao namely: (i) access to basic services and livelihoods, (ii) protection and security for internally displaced populations, and (iii) disarmament, demobilization and reintegration. The recommendations of the review revolve around these three categories of post conflict issues taking into consideration the unique needs and the roles of men and women.

Placing age differences in the context of the Orissa supercylone : Who experiences psychological distress?

By Damodar Suar, Sasmita Mishra and Rooplekha Khuntia

Key themes : Age and Disasters

Abstract :

The present study examines the influence of age on anxiety, depression, and post-traumatic stress of the supercyclone-affected people in Orissa. When the effects of exposure, caste, and gender were controlled, linear effects of age on psychological distress were found to be significant, whereas quadratic effects of age on psychological distress were non-significant. With increasing age, survivors experienced more anxiety, depression and post-traumatic stress. The elderly people were the most vulnerable.

Research Methods and data sets :

The data were collected in structured interview sessions 3 months after the disaster struck. Of the 130 interviewees, 65 persons were severely exposed and the rest were mildly exposed to the supercyclone.

The study hypothesized that if psychological distress increases with age and elderly
people are the worst sufferers, the relationship between age and distress will be directly linear. If younger people experience distress, middle-aged people experience more than them, and the older people experience less distress than the middle-aged, the relationship between age and distress will resemble an inverted 'U' shape curve.

Conceptual framework/concepts used :

Exposure and resource perspective

This perspective explains more vulnerability of older people to trauma than younger ones. The coping capacity of older people decreases because of declining health and lower socioeconomic resources. (Friedsam, 1961; Phifer, 1990). They have lesser likelihood of receiving warning, greater reluctance to evacuate, higher resistance to alter accustomed patterns of life, and a severe sense of deprivation resulting from losses. They are more likely to experience disaster-related injuries (Bolin & Klenow, 1982–1983), substantial economic losses (Bell, Kara, & Batterson, 1978), and evaluate their situation as worse compared to those around them (Bolin & Klenow, 1982– 1983). They are also less likely to use post-disaster services of counselling and social support

Measures used

With the collection of demographic and socioeconomic information on location, age, sex, education, caste, and loss of life and property, three inventories/scales measured
anxiety, depression (Depression Inventory; Beck, 1967), and PTSD (DSM-IV, 1994).
Except for the diagnostic criteria involved in PTSD, items in the anxiety and
depression inventories were reduced. To lessen the interview time, items that
were found common in the judgment of three psychologists were retained.

Findings :

The mean score from the aggregate data indicated that the younger adults experienced less, middle-aged people experienced more, and the older people experienced still more anxiety, depression, and PTSD (Table 1). In the table, the cluster B denotes intrusion, the cluster C denotes avoidance/numbing and cluster D includes arousal symptoms – all which continued or persisted for more than one month.

Table 1 Descriptive statistics on psychological distress in different age groups

Age group	N	M and SD	Anxiety	Depression	PTSD cluster B	C	D	PTSD (B + C + D)
18–35	71	M	18.65	19.07	1.08	1.86	1.76	4.70
		SD	4.72	3.40	0.82	1.50	1.15	3.25
36–55	46	M	19.78	19.67	1.11	2.13	1.93	5.17
		SD	4.51	2.97	0.82	1.56	1.16	3.29
56–80	13	M	20.38	20.38	1.31	2.69	2.23	6.23
		SD	4.89	3.40	0.75	1.38	0.93	2.68
Total	130	M	19.22	19.42	1.12	2.04	1.87	5.02
		SD	4.67	3.26	0.81	1.52	1.14	3.23

PTSD, post-traumatic stress disorder.

The first step of regression analysis revealed that severe exposure to the supercyclone consistently increased anxiety. depression, and PTSD. Only females experienced more
anxiety than males. When the confounding effects of exposure, caste status, and gender were controlled in the second step of regression analysis, elderly people were found to be
more vulnerable to anxiety, depression, and PTSD (Table 2). All beta coefficients were positive and significant for linear effects of age on distress. In the third step, none of the beta coefficients were significant for quadratic effects of age on distress. Both approaches specifying an inverted 'U' shape curve were refuted. Hence, the older the age of disaster
victims, the greater was their psychological distress.

A closer inspection of the results showed that excluding the effects of control variables, the linear term of age explained an additional 3% variance each of anxiety and depression, and 2% variance of PTSD. All the explained additional variances were found to be significant. Contrarily, the quadratic terms for age did not explain any additional
variance of distress.

Table 2 Regression analysis predicting the effects of age on psychological distress

Dependent variable	Step	Independent variable	B	SEB	β	R^2	F†	R^2 change	ΔF
Anxiety	Step 1	Exposure	2.32	0.84	0.25**	0.11	5.07**		
		Caste	−0.95	0.85	−0.10				
		Gender	1.91	0.82	0.20*				
	Step 2	Age	0.06	0.03	0.19*	0.14	5.14***	0.03	4.87*
	Step 3	Age^2	0.00	0.00	0.09	0.14	4.09**	0.00	0.05
	Step 3	$Mdage^2$	0.00	0.00	0.02	0.14	4.09**	0.00	0.05
Depression	Step 1	Exposure	1.22	0.60	0.19*	0.08	3.41*		
		Caste	−1.00	0.61	−0.15				
		Gender	0.56	0.58	0.08				
	Step 2	Age	0.04	0.02	0.18*	0.11	3.65**	0.03	4.10*
	Step 3	Age^2	−0.01	0.01	−0.07	0.11	2.90*	0.00	0.03
	Step 3	$Mdage^2$	−0.01	0.00	−0.02	0.11	2.90*	0.00	0.03
Total no. PTSD symptoms	Step 1	Exposure	4.87	0.39	0.76***	0.60	62.86***		
		Caste	−0.30	0.39	−0.04				
		Gender	−0.06	0.38	−0.01				
	Step 2	Age	0.03	0.01	0.13*	0.62	49.91***	0.02	5.03*
	Step 3	Age^2	−0.01	0.00	−0.41	0.62	40.68***	0.00	2.06
	Step 3	$Mdage^2$	−0.01	0.00	−0.10	0.62	40.68***	0.00	2.06

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
†F in step 1 is against 3, 126 d.f., in step 2 against 4, 125 d.f., and in step 3 against 5, 124 d.f.
B, beta; β, standardized beta; PTSD, post-traumatic stress disorder; SEB, standard error of beta.

Implications of the findings for intervention :

Age plays a role in recovery. Older the age of the victims, greater is their psychological distress. In the culture of India, collectivistic values of interdependence, social support, cooperation and interpersonal sensitivity coexist with power distance. Senior members are respected and they informally represent the family, take care of others and provide advice for the family and community prosperity.

The Supercyclone however depleted the personal (self esteem, mastery, well being), social, economic and work resources that survivors had built and conserved over time. These resources sustained the living.

Elderly people being custodian of family and community had a greater sense of resource loss with little hope to regain the resources at the end of their lives inducing more distress. Further, elderly in this culture live with a high uncertainty avoidance and low tolerance for ambiguity – and the sudden crisis was cognitively painful.

Interventions such as preserving resources such as "sense of mastery" and self esteem would help the old people regain their status.

Protecting Children in Post-Disaster Planning.

By Toms C. and McLeod H

Published by World Vision International; 2005

Key Themes : Age and Disasters

The paper examines why children are vulnerable in disaster and how we can protect them from aftermaths of disaster. It examines programmes started in the wake of disaster to protect children. It suggests ways for allocating safe and child friendly spaces for children, explaining disaster to them and their participation in planning of site and its design.

RACE, CLASS, AND THE KATRINA CRISIS

By Manning Marable

Published in WorkingUSA: The Journal of Labor and Society , Volume 9 , June 2006 pp. 155–160, Immanuel Ness and Blackwell publishing Inc.

Theme : Race and Class

Abstract :

The recent human tragedy in New Orleans created by Hurricane Katrina has generated an interesting and important debate about the underlying causes of black suffering and oppression. In its most simple form, the question being debated is whether race and racism were most responsible for the Katrina crisis that disrupted the lives of hundreds of thousands of African Americans, or whether class and poverty were relatively more significant in explaining this human catastrophe.

Research Method : Paper based on Media and other reports

Key Issues raised by the Paper :

1) **Corporate Media and Racism**

The conservative media such as Fox news led the news – after the disaster with stereotypes of African Americans by tales of blacks being looters and rapists. Racist subtext was that New Orleans blacks were not worthy of saving.

2) **Racial inequality and its impact on disaster**

Most of the people affected in New Orleans were poor. years. In terms of poverty, New Orleans—a city that was nearly 70 percent African American—had 30 percent of its residents living below the federal poverty line. In the flood-devastated Ninth Ward, with a 98-percent black population, the poverty rate exceeded 40 percent. About 40 percent of working-age adults were unemployed. Thousands were living in dilapidated, substandard housing even before the hurricane struck. Data from the 2000 Census for New Orleans

confirmed that roughly 30 percent of New Orleans households lacked automobiles. Logistically, it would have been impossible for most low-income, unemployed, and elderly African Americans to even leave the city before the disaster struck.

3) Debate on Race and Class and its impact on Disaster

The authors suggests that several examples point out that the poor Blacks in New Orleans had to face discrimination due to race rather than class factor. One example of this was the comprehensive study done by the National Fair Housing Alliance, a coalition of 220 civil rights and nonprofit fair housing organizations in 2005. The study suggested that there was unequal racial treatment of black Vs white Katrina victims in their attempt to secure temporary housing after the disaster. This study conducted telephone tests with black and white homeseekers requesting information about unit availability, rents, and other conditions of housing leasing. In 66 percent of the tests, whites were distinctly favored over African Americans.

Ethnic and Racial Inequalities in Hurricane Damage and Insurance Settlements

By Walter Gillis Peacock and Chris Girard

In 'Hurricane Andrew' ed by Walter Peacock; Betty Morrow and Hugh Gladwin; Routledge publication, London and New York; 1997 (pg 171-190)

Key Themes: Race, Class, Ethnicity and Disaster Response

Abstract : Issues and Findings

The literature on disaster recovery in the United States indicates that insurance is one of the most important determinants of recovery in US (Bolin 1982; Drabek and Key 1983; Bolin and Bolton 1983, 1986). However the assumption that market will rebuild housing may be overlooking important failures in market mechanisms. This article looks into how racial and ethnic pockets of vulnerability to natural disasters are potentially more susceptible to damage as well as experience most recovery obstacles It looks into the recovery issues in the area impacted by Hurricane which has a good representation of Black, Hispanic and Anglo homeowners.

Research method :

Based on Hurricane Andrew Survey where respondents were asked if the homes were damaged and if so, whether the damage was slight, moderate or major. Respondents were further asked on the details of the damage – for parts of homes such as windows or full home etc. Such comparision would not have been possible had the researchers asked for dollar damage of amounts – which are a function of overall value of property.

The sample was divided into three racial/ethnic categories – Anglos, Hispanics and Blacks.

Findings:

The results show that while controlling for other influences, blacks and Hispanics suffered more damage than the Anglos. Further the levels of damage reported by Cuban-Hispanic households are higher. Thus the households location relative to the storm's path was among the most important factor determining damage. Further the type of residence was also critical – the residences located in apartments, duplexes reported lower levels of damage than single family dwellings; whereas mobile homes fared the worst. Thus these results were consistent with general expectations from the literature that the disadvantaged groups are more vulnerable to hurricane damage. However, in Dade, neither the Cubans nor the Hispanic are minorities – although in US as a whole they could be one. Thus further analysis also suggested that the residential segregation effect had an impact in the sense that black hh had more damage compared to the Anglo households, whereas this factor was not operating with respect to the Cuban or other Hispanic households..

Insurance and Recovery Processes:

In US federal disaster policies implicitly assumes that private insurance will be a major mechanism for recovery because the govt prog such as low interest small business administration loans come into play only if the household is under or not insured.

Nhbds in South Dade after hurricane Andrew suggested that there was some sort of market segregation reflected in the choices of the insurance companies made by the blacks on one hand and Anglos, Cubans on the other – who were the dominant groups. Blacks had insured from smaller and lesser known firms who failed after the storm.

Further survey on insurance coverage and payouts suggested:

Few Anglo or Cuban homeowners (-2.7% and 4.1%) respectively were without home insurance compared to 9.3% of non Cuban Hispanics and 8.7% of black home owners. Blacks were four times likely to say that they were without an insurance as against Anglos.

Among those who had filed a claim and received settlements in Dade county – 16% of Anglos said that the insurance company was not offering enough to cover their rebuilding expenses as compared to the more than double that percentage for the non Cuban Hispanics (41%) and Blacks (38%). In comparision, the Cuban % is in line with the Anglos (24.7%).

Further investigations showed that income and damage levels did not really account for the substantial or ethnic differentials. Rather analysis showed that percentage of homeowners indicating that their insurance settlement was not enough were three times greater (25.2% versus 8.5%) when their insurers were not among the top three companies. Second among those home owners insured not insured by the top three companies, slightly more than half of Black home owners said that they did not receive sufficient settlement; as compared to about one-quarter of Hispanic and one-eighth of the Anglo homeowners. On the other hand there was no statistically significant difference among racial and ethnic groups for homeowners insured by top three companies even though black owners were twice as likely to indicate that they had received an inadequate insurance settlement. In this case, there was not much statistical significance because the pay out was quite high for the top three companies regardless of the race and 90% of all homeowners and 85% of black homeowners said that they received enough money to cover all the repairs.

The other statistically significant relations found were:

Over 60% of the Hispanics and Anglos were insured by a top three company; whereas only 49% of the blacks were. These findings are suggestive that the insurance companies could be refusing policies to the residents of black neighbourhood.

Conclusions:

The research shows that social urban landscape has pockets of vulnerability to disaster – and are less resilient in recovery process. Vulnerability is created by racial segregation with possible effects of access to insurance policies.

This research also challenges that housing will take care of itself in the recovery process. The mechanism of market based rebuilding process through insurance failed to provide sufficient funds for recovery of 15% of insured respondents in the survey. Inequities stem from the access issues to blacks in the segregated areas. Black households were three times more likely not to have homeowners insurance as white households. Thus exisiting inequalities exacerbated further inequalities inherit in the market recovery process itself. Further, the Hispanics and in particular Cuban Hispanics whilst a minority at the national level did not experience difficulties with insurance or settlements when compared with Anglos. One of the most important determinants of getting a sufficient settlement was whether they were insured by the top insuring firms.

There were also convergence of obstacles in the lack of adequate protection against – natural as well s social disasters. Thus black neighbourhoods were more vulnerable – with heavy damage and insufficient insurance settlement. The research suggests that a series of obstacles built into the urban social structures leads to further marginalisation of the marginalised

The Research therefore calls for policy recommendations which include: public awareness and information about insurance policies and programmes; minority agent development programmes to encourage placement of

insurance agencies in minority communities; community insurance act legislation; and Anti red lining policies which provide an objective evaluation of the risk assumptions to enable access for minorities to insurance; and disclosure reports on the ethnic and racial characterstics of the agents.

Ethnicity and Segregation : Post hurricane relocation

By Chris Girard and Walter Peacock

In 'Hurricane Andrew' ed by Walter Peacock; Betty Morrow and Hugh Gladwin; Routledge publication, London and New York; 1997 (pg 191-205)

Key Themes: Race, Ethnicity and Disaster Response

Research question : Why did people relocate or stay? What factors led to the household relocation – temporary or permanent? What were the barriers to leaving after Hurricane Andrew?

Research Methods: Surveys made at different intervals after hurricane Andrew that include respondents from South Dade to understand better the ethnic relocation patterns. At each interval, respondents were asked about relocation after the hurricane.

Summary of Issues and findings:

Anglo households in general were most likely to leave their homes. Blacks were the least to leave and Hispanics showed a intermediate tendency. The findings also suggests that blacks were less likely to relocate after hurricane not only because of economic constraints, but because of barriers created by residential segregation.

Implications of this results:

The findings reinforce the view that residential segregation may be considered a cause and not simply a consequence of racial disparities in opportunity. Several proponents of this view suggests that racial segregation multiplies the effects of economic deprivation –poverty, crime, family dissolution, welfare dependency and so on focusing on the black, under neighbourhood. In parallel to this effect of segregation, in disasters, it appear to limit the movement out of disaster areas and stifle recovery for the blacks.

And to the degree that the residential segregation remains the key feature of American Cities, racial inequality must be considered when assessing the urban landscape's vulnerability to natural disaster. There also needs to be more focus on urban ethnic ecology and residential segregation. Segregated nhbd are a part of urban landscapes that are not well integrated with the mainstream institutions critical for jobs, political power, financing and insurance. Disasters simply reinforce the effects of segregation and marginalisation and hence Blacks face more barriers to recovery.

The policy implications for this is that issues related to maintenance and creation of segregation must be examined and addressed long before disaster strikes because they have an impact on the recovery of the impacted communities. Further vulnerability mapping which takes physical risks further by overlying them with social factors that produce vulnerability would be a important step in ensuring disaster mitigation.

And the Poor get Poorer : A neglected Black Community

By Nicole Dash, Walter Gillis Peacock, and Betty Hearn Morrow

In 'Hurricane Andrew' ed by Walter Peacock; Betty Morrow and Hugh Gladwin; Routledge publication, London and New York; 1997 (pg 206-225)

Key Themes: Ethnicity and Class in Disaster Response

Context:

The focus of this paper is on small predominantly black incorporated community – in florida city which is embedded peripherally within the complex metropolitian Miami. The florida city was one of the places where the impacts of the hurricane was felt very strongly. The documentation in this paper suggests that in comparision to its immediate neighbour of Homestead, florida city was unequally impacted by the hurricane, its recovery progress sluggish and its future more tenous.

Florida city is in Dade county and is also one of the smallest with around 6000 persons in 2.5 sq miles. It is bordered by city of homestead to the north. As per the 1990 census, florida city as 61% black and another 37% are Hispanics, mostly Mexicans and central Americans drawn to the area for agricultural work. Further florida's economy remain predominantly agriculture– and accounted for 60% of the citys sales volume.

Homestead has five times the population of florida city with 9317 households and averaged 2.83 persons as against florida citys 3.17. The median income of the homesteads was approx 20% higher than the florida city. (pg 209) Homestead is one of the most Anglo communities in Dade county – over 42% of population classified as non Hispanic, non black Hispanics made up 35% - including many Cubans and Mexicans. This study compares the impact on housing, economic and populations.

Findings:

Impact on housing:

A dramatic decrease of 78% reduction of residential property value was found after the storm in Florida city, and whilst the total loss of homestead was twice that of florida city, this decrease was smaller – 60% of its earlier aggregate value.

Impact on population:

Florida city lost 33 percent of its population, while homestead – 31%. In both cases, anglos relocated out of the area then did Blacks. The black population in florida increased by more than 10% whilst its Anglo population declined by 5%. In homestad, 'blacks gained 6.5% while Anglos lost 8.6%.The net impact was that florida city became an almost exclusively black community, while homestead was left with relatively equal population of each group – with anglos losing their numerical majority

Economic effects:

In terms of jobs, florida city lost about 87% of its employees, whilst homestead gained 10% of its employee base.

The analysis of these disproportionate losses show that hurricane Andrew destroyed florida's social infrastructure – and the city's leadership was decimated and there was no clear plan for recovery. Cities with pre-existing plans were able to recover more. The other key factor was florida's high dependency upon larger socio-political contexts – and when plans were finally approved – the wait for funds was long. Thus without adequate administrative overhead, hiring, training etc, the rentention of personnel and recovery became difficult. Also what increased this was the lack of experience of the community leadership in disasters as well as the decimation of the leadership as one of the fallouts of the disasters.

In terms of household assistance – in access of 59% of florida city's hh lacked insurance, as compared to 47% of the Homesteads. Further only 5.5% of florida's homeowners qualified for SBA loans meant for restarting of small businesses, as against 20% from Homesteads. Qualitative interviews also showed that lesser number of people from florida actually applied – as they may have believed that system does not work for them – that is they had no expectation from the system.

Thus 'florida after disaster suffered high levels of damage, had limited access to insurance and received lower levels of public aid making recovery much slower both at the community and the household level).

The policy suggestion from this paper is that whilst as argued by Klintberg (1979), Rubin (1985) structure of the govt is a critical factor in recovery, we need to look beyond the internal factors to the larger ecological network in which the recovery occurs. Whitin the larger political and social context of Dade county, this community yielded miniscule power and therefore was not able to compete successfully for the resources necessary for recovery

'Coping in a Temporary way : The tent cities'

By K A Yelvington

In 'Hurricane Andrew' ed by Walter Peacock; Betty Morrow and Hugh Gladwin; Routledge publication, London and New York; 1997 (pg 92-115)

Key Themes : Class and Ethnicity in disaster response

Abstract : This is an ethnographic account of the life in tent cities built after the hurricane Andrew which had hit South Florida on August 1992. The tent cities were built immediately after the hurricane had stuck to house people affected by Disaster. Initially the tent cities were looked after by American Red Cross which were in charge of checking the victims. They had adopted a flexible policy – so people were taken in without having to prove fully that they were living in a dwelling destroyed by the hurricane. The feeling was that all those who wanted to stay in tent – which had harsh conditions are in dire need for a housing. The affected populations was a mixed ethnic groups – belonging to latinos (50-60%) – mainly Mexicans and Mexican Americans; Central Americans and Puerto Ricans and a few Cuban or Cuban-Americans. Blacks (30% comprising of African Americans, Haitians, Haitian Americans and other Afro- West Indian. The remaining 20% were non Hispanic whites called Anglos.

The account suggests that initially there was an ethos of cooperation and sharing across different ethnic groups – however the divisions started when the days of staying turned from days to weeks to months. The considerable ethnic diversity in the tent cities – led general instances of frustration and conflict into issue of ethnicity.

While Red Cross seemed to allocate the indiv and families multifamily tents without regard to ethnicity, a pattern of segregation was found in the Campbell drive tent citiy residents.

Later on when FEMA took over from Red Cross, it (FEMA) became strict with the proof of identification in entry to the tent cities. Further, the people admitted to the city needed to prove that they were entitled for FEMA aid. And under FEMA regulations, reimbursement checks were made out to the head of the household and a household meant a physical unit or dwelling. When two or more families shared a single house or apartment – and yet owned furniture individually, as was case with Homestead's migrant workers, only one check was made. Giving aid to the household head was the biggest obstacle – as suggested by the advocacy groups Households which shared three to four families - FEMA either denied the entire household money or awarded assistance to only one family. Thus given the complex ethnic, cultural, and class make up of South Dade – the affected county, the policies did not match the realities of victims.

When FEMA closed the tent cities, while media suggested all who stayed in tent cities, received trailers from FEMA – this was not found to be true. It was estimated that 2000 people were still living in their cars or in makeshift camps in South Dade after the tent cities were closed and several people after the closure had to live in damaged units without electricity and telephone services, some became homeless.

The study finally suggests that what the research brings out is not just cultural plurality but also serious inequality of the affected region. Further the role of the State, disaster relief agencies and their policies also impacted the outcome. The policies of FEMA and their officials were reflective of the 'misguided' notion of community. Further they also idealised the 'North American Middle class model of household and family – which did not reflect the reality of those people who were on cultural and economic periphery of American society. While the tent cities provided temporary relief to the poor and the powerless, their policies of admitting those to the tent cities often increased inequality.

In their recommendations, author suggests that disaster response need to be more aware about the ethnic, and special needs of specific populations – and should not model their household recovery on the middle class model of nuclear family.

Moving Beyond "Special Needs" : A function-based framework for Emergency Management and Planning

By June Isaacson Kailes and Alexandra Enders

Key Themes : Disability/Diversity and Disaster

Abstract :

Disaster preparation and emergency response processes, procedures, and systems can be made more effective for people with disabilities, as well as for the population as a whole. An essential element of building appropriate levels of capacity, specific planning, and response success is to move beyond use of the "special needs" category, to better identify and address the diverse needs of those included under this label. This article provides disability demographics and describes special needs populations to lay the foundation for this change. It suggests the development of a more accurate and flexible planning and response framework based on essential, sometimes overlapping, functional needs: communication, medical needs, maintaining functional independence, supervision, and transportation. It also proposes new approaches to functional support, leadership, service delivery, and training.

Concepts used : Notions of Social groups and its usefulness in disaster preparation and response.

Use of the People with special needs and its limitations

Combining groups too broadly leads to problems in planning and response. The label special needs incorporates people whose functional needs include assistance with communication, medical needs, maintaining functional independence, supervision and transportation.

Used widely in emergency management literature, the special needs groups include people with disabilities, those with serious mental illness, minority groups, non English speakers, children, elderly persons. Other lists can add single working parents, people with special dietary needs, pregnant women, prisoners, homeless and others. These groups represent a large and variety of concerns and challenges in disaster response and planning.

As per the US demographic trends, if we use the above categories, more than 50% of the population are those with special needs rendering the category meaningless. This greatly weakens the chances for specific needs and providing effective comprehensive response.

Special also implies difference and isolation. Among disability advocates, special is the label often used for segregated programmes.

Use of category People with disabilities and its limitations

As a group, this is a very heterogenous group – and it is important to understand a range of function-based needs within the population.. There are several -67 places where disability is defined in federal US laws – each identifying criterias for eligibility – for eg social security or disability insurance. Some are used to protect civil rights and others are narrow – as they are to do with eligibility criteria and not always useful for immediate disaster response. This criteria may be useful for the long term rehabilitation support, but immediately, after the event, there is a need for function based needs and functional support to address these needs.

<u>**Key Findings and Suggestions:**</u>

1) Identifying functional limitations than impairments

Identifying impairments (Impairments as " problem of body function or structure such as significant deviation or loss" , WHO 2001) or diagnosis does not tell a person how to operationalise the need for functional support – for eg, skin impairment may not have functional limitations. Instead a focus on functional support needs may help individuals survive in a better way in emergency situations. By adopting a broad function based approach, no one is left behind.

2) Functional based framework for emergency management and planning:

It is proposed that a flexible framework built on five essential function based needs – communication, medical, maintaining functional independence, supervision, and transportation be used – this would reduce negative consequences and improve planning, preparedness, recovery activities at all levels.

3)   Disaster   preparedness   and   people   with   functional   dependence:

Typically disaster preparedness and emergency response system are designed for people for whom escape or rescue involves running, walking driving, and quickly responding to directions. Emergency management – even well intentioned ones do not address complex functional dependence. A US National wide review of govt response showed that govt agencies do not adequately involve civic organizations, faith based organizations, special needs advocacy groups, private sector, nhbd associations, and educational institutions in planning proceses. The report recommended such involvement.

4) Going beyond special needs to issues of Diversity

A better and appropriate level of capacity, special planning and response can be done if the planning framework moves beyond the use of "special needs" to address the "diverse needs" of those included in this category.

Health, Disability and Donor Response

Presented by Santosh Rath, Shanta Memorial Rehabilitation Centre, India, 30th Oct 2006; presentation made at forum 10, Cairo Egypt 29th Oct – 2nd Nov 2006

Key Themes: Disability and Disasters

Summary:

Following the Draft Convention and of the Rights of persons with disabilities by UN ad hoc committee on Disability on 25th August 2006, article 11 proposes – State parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights necessary measures to ensure protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrences of natural disasters'. Now Disabled persons are being included along with other vulnerable groups in disaster contexts as persons whose specific vulnerabilities affect their ability to cope and survive in a disaster.

This paper aims to identify the degree to which disability was included in the disaster response, the finances available and whether these policies were implemented. Donor funding, highlighted equity and pro-poor, but left many vulnerable groups outside their work.

The data for this paper is mostly from secondary sources and with some visits to the donor organisations. The main difficulty faced was that inspite of letters to donor organisations in India requesting data on disability response in disaster, there was no response.

Disasters, Disabled, health and Response:

Studies following recent disasters – tsunami, Katrina and Kashmir earthquake suggest that disability was not taken into account in disaster response. Further mortality during disaster was high in Tsunami of disabled people , from Andaman and Nicobar, Indonesia and Thailand. The root cause was lack of access to shelters for the disabled and any absence of plan for them.

Disasters also lead to injuries – however very little was done during recovery to enable medical care for the disabled in tsunami.

INGOs, NGOs, Disability and inclusion:

The response of the door agencies has been very limited and inclusion as an agenda has not been taken up by most in practice. Disabled people are lumped as vulnerable people and not as right holders by most. Latrines and Shelters in India and Srilanka constructed after the Tsunami were without ramps. Working with disability means mostly working with specialist agencies such as 'Handicap international'.

While Novib-Oxfam is a large donor, it was communicated that no finances were earmarked for disabled. Concern had the same answer, and the only donor which had kept funds earmarked was Dan Church Aid of Denmark working in India.

The authors suggests that although high amounts of funds were availability in Tsunami, it was a missed opportunity to put inclusion in practices of reconstruction.

The author gives following suggestions for policy and programme implementation:

One of the problems is that few donors go to disabled peoples's organisation after disaster. Second problem is that policies and programmes fail to recognise differences – and their different needs. The third problem is that of double standards – of inclusion and exclusion of some groups of people. Therefore the need is to :

-Promote inclusive policies and programmes by involving people with disability.
-create collaboration between stakeholders to actively consider disability issues
-promote standards to ensure inclusion
-ensure that disability organisations are actively involved in the disaster relief organisations and overall governance response.

Further structural change are needed by engaging States in devising laws to transform practices and traditions which discriminate against the people with disability – that match international standards.

Donors also need to to ensure funding and give importance to disability inclusive response with good monitoring practices of implementation.

Traditional Societies in the face of natural hazards: The 1991 Mt Pinatubo Eruption and the Aetas of the Phillipines

By Jean-Christophe Gaillard

In International Journal of Mass Emergencies and Disasters, March 2006, Vol 24, No 1, pp 5-43

Key themes : Ethnicity and Resilience

Research Question : Understanding the capacity of the response of traditional societies in the face of natural hazard through the lens of concept of resilience.

Research Methodology used: Field work conducted amongst the Aetas, affected by the 1991 eruption of Mt Pinatubo. The field work included interviews with key informants covering community leaders and other women and men members. Other interviews included govt officials and different agencies.

Abstract : This article looks in how traditional groups have responded to the disaster through the lenses of resilience. From the case study of the 1991 Mt Pinatubo eruption in Philippines, and its impact on the Aeta communities it suggests that capacity of resilience of traditional societies and the concurrent degree of cultural change is due to four factors in main : the nature of the hazard, pre-disaster sociocultural context, geographical setting and the rehabilitation policy of the govt authorities.

Concepts/conceptual framework implicit in the study:

The dominant framework regards traditional environment dependent societies as fragile and unable to cope on their own with the largescale fast-onset natural hazards. Such arguments emanate from the topdown technocratic and western logic. The second theoretical framework sees traditional societies as capable of recovering on their own from the impact of the natural phenomenon. The third approach is regarding responses of the traditional societies in the face of natural hazards and defends an intermediate viewpoint. It argues that the occurances of natural hazards rather act as catalysts for ongoing cultural changes among traditional societies pressured by the

industrial world. The author suggests that all the above approaches are inadequate as they do not address cultural change as a way of coping with the havoc wrought by the disaster. This paper, aims to tackle the capacities of the response of traditional society such as Aetas in the face of natural hazard through the lens of concept of resilience.

Findings : While the 1991 Mt Pinatubu eruption brought undeniable differentiated changes in the Aeta society the fundamentals of the Aeta social system has survived the consequences of the disasters. While Aetas, have changed their foodhabits, clothing, religious beliefs, the Aetas households still co-exploit the swiddens, share food, and journey together to public markets for economic transactions. Thus Aeta social system has not disappeared due to disaster but has adapted to new environmental, social, economic and political environment while maintaining the stable core. It is this factor of maintaining their social fabric or accepting marginal or larger changes in order to survive that makes the Aetas resilient.

The Hakka Spirit as a predictor of Resilience

By Li-Ju Jang and Walter Lamendola

In Disaster Resilience : An integrated Approach (ed) by Douglas Paton and David Johnston, pp 174-189; Charles Thomas Publisher, 2006; Illinois USA

Key Themes : Ethnicity and Resilience

Research Method : Qualitative study using participant observation of 18 years or older survivors and service providers as well as volunteers in the relief and reconstruction projects in Tung Shih. Further data was collected through indepth interviews, and observations. A total of 28 individuals which included 16 survivors, 6 service providers and 6 volunteers were interviewed. Most of them were female, hakka believers and married. Of the 28, 25 had experienced loss of loved ones and property damages.

Context and Findings : The Taiwanese township of Tung Shih was exposed to an continuous natural disasters – include the major earthquake in 1999 which is refered by Taiwanese people as 921 earthquake – on the magnitude of 7.6 Richter scale. The earthquake flattened buildings on the road, ruptured water supplies and a loss of fishery, forest and livestock and several factories. Apart bridges, highways and schools were seriously damaged. The earthquake led to 2,423 deaths, 11305 injuries and made more than 100,000 people homeless. At the township level, Tung Shih suffered highest death toll with 358 (29.98%)

Most of the participants regardless of whether they were survivors or the service providers reported that 'Hakka Spirit' played a key role in the resilience of Tunh Shih residents. 'Hakka' were carpenters who had originally migrated from China several hundred years ago. The story goes that they were not welcomed by the natives – and that they were attacked then. However they continued with perseverance to stay and work in the place – and also prayed and built the temple for their god Lu Ban. Slowly the attacks stopped and Hakka were able to live peacefully in Tunh Shih. The Hakka spirit refers to the memory of the perseverant and hardworking, frugal living ancesters by those who were affected by the earthquake and other disasters – and therefore had made some of the values of the Hakka people as a part of their life – such as frugality, savings. For eg, savings were done by most Hakka people – whilst working which came in handy in the recovery after the earthquake. Further, the Hakka believed that they will recover against all adversity and therefore had a positive attitude even after the earthquake. This led to a faster recovery by the Hakka people – who did not wait for the assistance from outside – but started their reconstruction immediately after the earthquake.

The participants in the study suggested that Hakka Spirit is a major cultural set of beliefs and behaviours that influenced resilience.

The authors suggests that Hakka Spirit can be understood as an example of set of social practices that a)were performed in a manner that encouraged resilience and growth and b)increased the capacity of the human agents to thrive in adversarial situations.

Disaster stress following a Hurricane: The role of religious differences in Fijian Islands.

By Gillard M. and Paton D.

Published in *The Australian Journal of Disaster and Trauma Studies.* **Vol. 1999-2 ; 1997**

Key Themes : Ethnicity, Religion and Resilience

The paper explores the influence of religion on disaster stress in Fijian Islanders. Interview data revealed the religious groups could be segregated in regard to the assistance afforded them and the demands made upon them by religious organizations. The results revealed that religious denominations exercised a differential impact on vulnerability, although differences were partially dependent on the measures of vulnerability used.

Natural Hazard Resilience : The role of individual and household preparedness

By Douglas Paton; John Mc Clure; and Petra Burgelt

In disaster resilience: An integrated approach by (ed) by Douglas Paton and David Johnston, Charles Thomas Publisher, 2006; Illinois USA, (pg 105-127)

Key Themes: Resilience

Summary:

Blumer (1969) in this theorisation around 'constructing reality' suggests that people actively and constantly interpret stimuli from the environment while interacting with the elements in that environment and integrate their interpretations through the mental models constructed by them. People construct differential meanings – by interpreting their worlds depending upon their social contexts. And since individuals are open to new and different experiences, their interpretations changes with time – and with this the process of adapatation to new conditions (Denzin 1992). Thus according to authors, the ultimate function of interpretations is to adapt as well as possible to the changes in the environment'.

For blumer(1969) the social structure 'supplies a fixed set of symbols which people use to interpret their situation'. Similarly in disaster situations, people interpret information based on their situated experience.

As impacted communities are becoming more diverse, a failure to accommodate the differences or the diversity can diminish the capacity of the mass media information dissemination to facilitate protective actions (Paton et al 2005; Johnson et al 2005; Paton & Burgelt 2005). There can also be communication problems if information does not consider the existing interpretive frameworks.

If interpretive mechanisms are identified then the knowledge can be used to develop design risk reduction strategies which are context specific. This could involve conceptualizing how people interpret their relationship with hazards and actions required to protect them as social cognitive processes (Duval and Mulilis 1999; Mc Clure et al 1999, 2001; Paton 2003).

This paper looks at following issues – how people make decisions about whether or not to adopt protective measures.

Precursors	Development of intentions	Convert intention to action

Motivating factors
  a. critical awareness
  b. risk perception
	Personal competancies for implementation :
	Self efficacacy, coping capacity, personal responsibility.
		Adoption of protective action factors affecting which will be the outcome of the precursor and development on intensions as well as trust.

Factors constraining motivation to prepare:
  a. Perceived irrelevance of risk information.
  b. Existing beliefs about		

preparedness and anxiety.		

The authors conclude that adoption of protective measures involves a complex reasoning process based on negotiations of relationships and resources.

Links between Community and Individual Resilience : Evidence from Cyclone affected communities in North-West Australia

By Julie Ann Pooley; Lynne Cohen; and Moira O'Conner

In disaster resilence: An integrated approach by (ed) by Douglas Paton and David Johnston, Charles Thomas Publisher, 2006; Illinois USA, (pg 161-173)

Themes : Resilience –Individual and Community

Summary:

The term Community resilience has been defined as ' the ability of a community to not only deal with adversity but in doing so reach a higher level of functioning (Kulig 1999:2). The term community resilience has been referred to as widely as rsk management (Paton et al 2001) and hazard planning (Tobin and Whiteford 2002). Further, Brown and Kulig (1996-1997) have suggested that community resilience 'is grounded in the notion of human agency' that is the community engages in intentional meaningful action – that the community does not just bounce back but actively chooses change. Factors contributing to resilience include human capacity – such as assets and skills, community sustainability (meet indiv need in a culture harmonizing with nature); and community competence – (eg the processes by which community members identify and decide the ways to meet those needs).

The individual's sense of being or belonging to a community is also influenced by several factors such as a) membership – shared history, emotional safety, common symbols; b) Influence – which accounts for indiv influence on community and viceversa c)Integration and fulfilment where indiv and community needs also satisfy collective needs d)Emotional connection that is the bond between members of the collective. (Mc Millan and Chavis 1986).

This concept of 'sense of community' is the key link to the indiv and community connectedness – how indiv and community become a resource for eachother. One more variable – namely competence is brought in to understand peoples capacity for action – namely community competence- a concept used to understand community resilience too.

Cottrell (1976) suggested that a competent community is :

- collaborate effectively to identify needs and issues
- achieve working consensus
- agree to implement agreed upon goals
- carry these out in collaboration.

Thus a competent community is able to articulate their views on the matters and can accommodate difference and has a willingness to be involved and manages community relations. The presence of Competant community enhances their capacities to manage or cope with the adverse. Buckland and Rahman (1999) argued that high social capital – which is similar to the sense of community is able to respond to the disasters more effectively.

Kulig (2000) in recent refining his model of community resilience has suggested three components: a) interactions that are experienced as a collective b) the expression of sense of community c) community action. In other words, Kulig has given a central importance to the concept of community competence while measuring resilience.

Other conceptual frameworks includes that of Tobin (1999) combining three theoretical models – a) mitigation model resting on reducing risk b)recovery model resting on govt policies to relief and recovery – capital reaccumulation c)structural-cognitive model which incorporates issues of structural (societal) changes, and situational factors such as demographic and community characterstics as well as cognitive – attitudinal variables.

Natural disasters, adaptive capacity and development in the twenty-first century

By Mohammed H I Dore and David Etkin

In ' Natural disasters and development in a globalizing world' ed Mark Pelling, Routledge publication, London and New York, 2003

Key themes : Resilience, Adaptive capacity and development

Abstract: The climate change is affecting and leading to hydrometeorological disasters across the world. In order to counter the effect of climate change, countries will have to increase their adaptive capacities – as a part of conscious development policy.

Concepts   **used**:

Adaptation : This refers to the question of what are the sufficient and necessary conditions for adaptation? When is adaptation complete?

How can we suggest that the developed countries have adapted themselves to climate change? The authors suggests that developed countries could be taken as the baseline or necessary conditions – but by no means sufficient to come to an understanding of baseline adaptation. This is because the developed countries have – 1) the technical knowhow to understand climate, 2) have resources to research the climate, 3) have necessary technology to cope with climate; 4) share risk through govt disaster assistance programmes and insurance markets; 5) and the insurance markets through mechanism such as deductible minimum or rebates for minimizing disasters or no claims; and lastly speaking the 6)investment of resources by the govt in all levels of emergency response. All these six indicators are could be called as necessary conditions that define adaptive capacity at the institutional level.

The definition of adaptive capacity by reference to developed countries is used just the same way, that gap in per capita incomes are used to differentiate between developed and developing countries. **The authors suggest that the above six conditions are necessary but by no means sufficient to enable successful adaptation.**

So what are the sufficient conditions for complete adaptation?

The authors suggests that no country including developed is full adapted so long as their continue damage to the infrastructure and life during a hazard. And therefore there exists no 'suffcent adapative capacity' for complete adaptation.

The authors conclude that there is no way of stipulating the necessary and sufficient conditions for adequate or optimal adaptation to climate change.

Two levels of adaptive capacities:

The authors therefore differentiate between two levels of adaptive capacity – namely baseline adaptive capacity and the socially optimal adaptation.

Baseline adaptive capacity suggests the countries ability or inability to deal with a variety of climate changes – for eg in forms of country's building codes or in relation to other social variables.

Socially optimal adaptation : The authors suggest that socially optimal adaptation are the prudent or 'the feasible level of expenditure that a country might want to carry out given its baseline adaptive capacity at a particular time'.

The authors conclude by suggesting that all development policies must attempt to increase the adaptive capacities in order to deal with the climate change.

The Concept of Resilience Revisited

By Bernard Manyena

Key themes : Resilience

Summary:

This paper focuses on following aspects of resilience – namely the definitional issue of resilience; how resilience is applied to people and structures and implications of the deconstructions of the term for the way in which we view disasters and disaster risk reduction.

The theoretical base for the term resilience has come from different studies – which have defined it in two broad ways – as a desired outcome or as a process leading to a desired outcomes. A viewing of different definitions of 'resilience' used in different studies shows a nuances shift from the outcome to a more complex process oriented resilience concept. The outcome oriented disaster programmes are inclined to use command and control methods of responding to risk – with the idea of returning to the original or the normal state- thus not addressing the entitlement loss issues which may have led to the disasters in the first place. Viewing disaster resilience as a deliberate process leading to desired outcomes suggests emphasises human agency and its role in disasters. Disaster resilience is seen as a characterstic nurtured by a process that foster it.

The concept of 'adaptation' – has been included in the definitions related to 'resilience' and in particular those related to ecological systems and are more process oriented in its approach. It also has a 'futuristic' dimension that is adaptation as a strategy to mitigate future disasters. In this conception, the communities have maintained their core values or assets but have addressed the non essential attributes or elements – for eg, growing up different kind of crops than say, giving up farming and resorting to different livelihood altogether.

Vulnerability and Resilience too have been seen as related concepts. The key question is however about the relationship between them – is resilience opposite of vulnerability or is resilience a factor of vulnerability? The literature also distinguishes between social and physical vulnerability. Here the Vulnerability could be viewed as reflection of the intrinsic physical, economic or social and political predisposition or susceptibility of a community to suffer adverse effects by a natural or human made shock. On the other hand – it also shows low disaster resilience and a limited capacity to recover. Disaster resilience here is viewed as the intrinsic capacity of the system, community, or a society pre-disposed to a shock or stress to adapt and survive by changing its non essential attributes and rebuilding itself.

There is also some discussion on whether resilience refers to humans or also structures. However the, authors suggests that discourse that separates 'humans' from 'structures, that is people can engage in adaptive behaviour but the structures only can be adapted sounds simplistic, as human beings do not live in a vaccum but are a part of systems that impact on losses.

The author finally suggests that the concept of disaster resilience requires delineation of vulnerability and resilience, which otherwise contributes to the blurring of the two concepts. The author delineates the constituent elements of the two concepts – with elements of vulnerability being mainly derived from the engineering or environmental sciences, and the elements of resilience derived from medical and social sciences. The author thus suggests that human resilience is about the 'processes of enhancing capacity to recover from a disaster within a shortest possible time with minimal or no outside assistance. This approach recognises that communities have certain levels of resilience built over centuries. Local adaptation strategies, culture, heritage, knowledge and experiences are the building blocks for boosting disaster resilience'.

Disaster Resilience : Integrating Individual, Community, Institutional, and Environmental Perspectives

By Douglas Paton

In disaster resilience: An integrated approach by (ed) by Douglas Paton and David Johnston, Charles Thomas Publisher, 2006; Illinois USA, pg (305-318)

Key Theme : Resilience

Summary :

The paper or chapter summarises the insights from the earlier chapter and suggests that communities can adapt and even benefit from disasters. But that communities can adapt and even grow does not mean that they should be left to fend for themselves. A corollary is that in many places the adaptive capacities are lacking. However if the predictors for the community, ecological and social level adaptive strategies or outcomes are known then they can be included in emergency planning.

Also deficit and loss outcomes co-exist with capacity to confront characterised by adaptation and growth. A corollary is that how risk is conceptualised, assessed and managed needs to be thought through.

Contemporary use of 'risk' focuses on potential losses as it focuses on vulnerability. This does not represent risk paradigm in a way that encapsulates the evidence of adaptive and growth outcomes from disasters. A return to the original concept of risk – as a probability of event accounting for gains and losses that the event could represent could deal with this problem.

This would mean conceptualising 'Risk' as how hazard characterstics interact with those individual, community and societal elements that facilitate capacity to adapt (increased resilience) and those that increase susceptibility to experiencing loss (i.e increased vulnerability). Thus in this framework, risk management is considered as consisting of two co-existing elements of vulnerability and resilience.

Risk = Likelihood * Consequences
Risk= likelihood * (resilience (gains) + vulnerability (losses))

The authors suggest that while vulnerability factors increase the susceptibility – it does not mean that there presence means automatic increased risk. Rather vulnerability factors may co-exist with factors that facilitate resilience to adapt to adverse circumstances. It is the relative balance between vulnerability and resilience factors when mobilised when confronting hazard effects that determine risk.

Modelling comprehensive Adaptive capacities and Resilience:

Drawing from the earlier chapters, Resilience is also now conceptualised as resources that members can draw upon to develop adaptive capacities to sustain societal functions during disaster. The intrinsic aspects of culture, personal dispositions, formal and informal organisations, and societal and institutional characterstics are all resources. Cultural aspects also need to be accommodated in the risk reduction and recovery plans.

Thus the model of adaptive capacity would include a) individual – eg self efficacy; sense of community; sense of place b)community e.g reciprocal social support, collective efficacy) and c) societal/institutional eg business planning, resources for adaptation; mechanisms facilitating different/ and between levels – social justice, community competence, trust, empowerment) that promote cohesive action to enhance adaptive capacity, minimize disruption, and facilitate growth.

Further cooperation cannot be taken for granted – with diversity in the communities would mean differences in the needs, perceptions, goals and therefore capacity to resolve conflicts and reconcile needs in fair and just ways. The fact that costs and benefits of hazard mitigation may not be distributed equally needs to be taken in to account – thus risk management strategies based on social justice principles and community involvement in decisionmaking influence risk acceptance and collective commitment to for responsibility for safety. Further the degree to which civic agencies sustain community participation by distributing power, resource and expertise that empower members are important to the outcomes.

It is useful to break adaptive capacity in the form of individual, collective or community and societal levels to offer insights in to vulnerability as well as resilience at each of these levels. Adaptation – immediately after the disaster could be mostly individual base – a few days after the disaster would be community based or dependent – that the degree to which the community is able to work together and develop plans etc, and in the long term – based on the society – that is the larger structures – such as workplace, schools – thus preparedness need to act at these larger levels too…. Since adaptive capacity – as its name signifies is finite, planning must consider how adaptive pressures change over time …. Till what time would the community and societies be able to function and what time will the available resources exhaust?

In conclusion, the authors suggests that 'Resilience is about nurturing and sustaining capacities of the people, communities and societal institutions to adapt and experience benefits from the disaster'.

Disaster Resilience: Building Capacity to co-exist with natural hazards and their consequences

By Douglas Paton

In disaster resilience: An integrated approach by (ed) by Douglas Paton and David Johnston, Charles Thomas Publisher, 2006; Illinois USA,
pp3-10

Key Themes : Resilience and Adaptive capacities

Abstract:

This book deals with identifying the values, beliefs, competencies, resources and procedures that societies and their members can call upon to facilitate their capacity to adapt to these circumstances and sustain societal functions in the face of high disruptions in everyday life. This book is about identifying factors which makes societies and members resilient.

Defining resilience:

The term resilience is synonymous with notion of 'bouncing back'. It is derived from the latin word 'reiliere' which means 'to jump back' or a capability to return to the previous state. However disasters changes the reality of the people – and it is to the changed reality that people must adapt to. Also new reality in disaster context could also be a catalyst for change. In this book, 'resilience is a measure of how well people and societies can adapt to a changed reality and capitalize on the new possibilities offered'. Thus definition of resilience includes the notion of adaptive capacity. Further the adaptive capacity cannot be left to chance – but needs to be consciously nurtured by individuals, societies, and emergency planers and management drawing on collective and institutional resources.

Adaptive Capacity:

Resilience can be considered to be comprising of following:
-Resources (household emergency plan, business continuity plan) to ensure their safety and the continuity of their core functions due to hazard consequences.
-Competances (self –efficacy, trained staff disaster management procedures) required to mobilise, organise and use the resources
-Planning and development strategies to integrated resources available to ensure existence of coherent societal capacity, and opportunities for growth
-Flexibility and sustainability that is resources are used as per the changing needs of the community.
Understanding the interdependence of people, communities, institutions influence adaptive capacities – that is resilience and adaptive capacity needs to be described at several interdependent levels.

Resilience is also looked upon as continuing economic, business, administrative activities in face of disasters and promoting heritage and environmental sustainability.

Exploring the Complexity of social and ecological resilience to hazards

By Douglas Paton; Gail Kelly; and Michael Doherty

Themes : Resilience

Summary :

This paper analyses the factors influencing sustainability of relationship between human and natural systems. It presents three perspectives on social –ecological resilience that have implication for hazard reduction, preparedness and recovery planning. This conceptualisation of the relationship has three issues – one concerns how human settlement and behaviour constitutes an adaptive for the environment and second – how people cope or adapt with the environmental hazard consequences. The third possible relation is how socio-ecological interaction can constitute the source of adaptive capacity for people and communities.

The reciprocal relationship between ecological resilience and social resilience is important at several interdependent levels. Ecological sustainability is vital. Thus it is important to encourage socio-ecological interaction in ways that reconcile the sustainability, the promotion of wellbeing and adaptive capacity and social goals. The factors leading to this win win situation could provide a framework for intervention to facilitate community resilience to natural hazards. This paper looks into some of these factors – namely the following:

-nature of the hazard – slow onset or otherwise
-uneven distribution impact of the hazard leading to conflicts and eroding the adaptive capacity
-notions of equity and justice – the costs and benefits attached to actions
-economic factors including the environmental protective actions vis a vis job loss or loss to the economy
-People's attachment to the place and their willingness to invest time and maintenance to the environment they inhabit.

This also means that planning in disaster responses need to include environmental and socio-ecological strategies to deal with the above factors to mitigate hazard effects and to increase human adaptive capacity. Thus Emergency managers and environmental managers needs to work together and develop strategies that reconcile environment protection with the reduction of risk to people and society and increasing resilience through socio-ecological mechanisms.

Planning for Hazard Resilient Communities

By David King

Key Themes : Resilience and communities

Summary :

While the terminology of mitigation has been driving the planners, this paper focuses on enhancing hazard resilience of the communities. This paper has incorporated structured planning, and hazard resilient communities within the emergency management framework of mitigation, response and recovery. While Planning is about land use changes, hazard zones etc are new developments . Planners and development officials use legislation to set up minimum standards to achieve hazard mitigation. Community resilience is enhanced indirectly through services and structures – that is by strategies that reduce vulnerability. The corollary is that resilience of civil society and communities is undermined by in appropriate infrastructure.

Diverse communities respond and recover according to their local priorities and capacities. Neither formal leadership structures nor communities provide primary leadership in recovery and response. Community resilience and strengths may be positive in some hazard situations but not enough in others. Resilience is hazard,

community and temporally specific. These realms of resilience do not exist as absolute characterstic – which can be reached as some sort of final goal. Resilience needs constant capacity building from within the community and outside from the agencies. Planners can enable develop positive community resilience characterstics. Hazard resilience is thus a responsibility of planners, emergency managers, working with communities to build mitigation capacity.

Assessing Social Resilience

By Philip Buckle

In disaster resilence: An integrated approach by (ed) by Douglas Paton and David Johnston, Charles Thomas Publisher, 2006; Illinois USA, (pg 88-104)

Key Themes : Resilience

Summary:

People do not exists solely as individuals but also as social beings – they belong to :
Families, tribe, or clan, locality and nhbd, community, social associations – for clubs, faith associations; Organisation (pvt firm or bureaucracy) and systems (economic and environmental systems).

All these different levels indicate a level of autonomous capacity at each level that can be used to act upon and therefore exists and semi-independent of their constituents of indiv members. That is they are quasi independent entities – who possess assets such as networks and values that facilitate daily life.

A functional assessment of resilience at individual level could include :

This would be made on the basis of who well they 'own' or 'manage' following attributes:

1. Information and Advice on Preparedness and Assistance measures to enable them to deal with the reactions of self and others in disasters.
2. Resources – financial resources to prevent, prepare or recover from disasters.
3. management capacity – having time and opportunity to manage appropriate resilience generating activities.
4. Personal and community support – such as outreach services, community support officers
5. Involvement involves linkages with others.

These five resources are important not just to individuals but also the families and community groups.

The authors also suggest that the traditional characterisation of particular groups of people – such as aged, etc as being vulnerable does not tell us which people in a particular situation may be vulnerable – this is because the people or groups of people have a specific mix of vulnerabilities and coping strategies that depend upon their circumstances and context of the hazard and interaction with the personal and group. The traditional lists therefore have only an indicative value at the best. Instead the functional approach defines resilience and vulnerability as characterstics that can be reduced or enhanced with observable and measurable effects. The elements that support resilience at community level are:

Knowledge of hazards
Shared community values : commitment to community goals
Established social infrastructure: information channels, social networks, and community organizations (eg churches, clubs)
Positive social and economic trends – viable economy contributing to sustainability
Partnerships : between agencies, community groups and pvt enterprise
Resources and skills : can be generic attributes (management or financial skills, human resources potential).

In general principles of community capacity building or building nurturance can be summarised as:

-local communities managed through principles of good governance – transparency, accountability, inclusiveness and agreed priorities).
- extent to which programmes and policies are governed by contemporary standards and community needs.
-Adequate resourcing for resilience building progs
-capacity to build integrated development of social, economic livelihoods, environmental and cultural dimensions to community.

Further Resilience is context – specific and also against the states of the individual and to balance vulnerability against capacity. For eg a rich person is less vulnerable to loss of home but could be equally vulnerable to psychological trauma.

Thus what is suggested is therefore 'a functional approach where vulnerability is assessed on the basis of the ability of a person or a group or community to work towards and to attain certain basic goals, such as capacity to manage their own affairs, to have access to appropriate and appropriate levels of resources, including food, water, shelter, health care, education and cultural activity, social inclusion and information and access to other necessary and desirable services'. However a situational/contextual assessment is needed so that local circumstances are taken into account to assess capacity and vulnerability. This in turn can provide framework for developing appropriate mitigation, remedial and support mechanisms.

Sustainability and community resilience : the holy grail of hazards planning

By Graham A Tobin

In Environmental Hazards(1999), Elsevier Science Ltd; pg 13-25.

Key Themes: Resilience

Abstract

Sustainability and resilience are considered as the guiding principles for hazard planning. However, in practice a comprehensive planning incorporating these elements is much more complex as relations between community sustainability/resilience and hazards are complex involving social, economic, physical and political factors. This paper develops a conceptual framework for analysis of sustainability and resilience, based on three theoretical models, a mitigation model, a recovery model, and a structural-cognitive model. This framework is examined using data from Florida, USA, where local context, social and political activities, and economic concerns present difficulties in application. The question remains, therefore, to what extent can communities truly develop sustainable and resilient characteristics?

Key concepts/conceptual frameworks used:

Sustainable and resilient communities

In this paper sustainable and resilient communities are defined as societies which are structurally organized to minimize the effects of disasters, and, at the same time, have the ability to recover quickly by restoring the socio-economic vitality of the community

Theoretical frameworks to understand community resilience

The structural functional views, conflict theory, competition for resources, and other geo-sociological and anthropological principles are raised here as possible frameworks in understanding community resilience (for eg Kreps and Bosworth, 1994). The following flowchart provides the framework for this analysis:
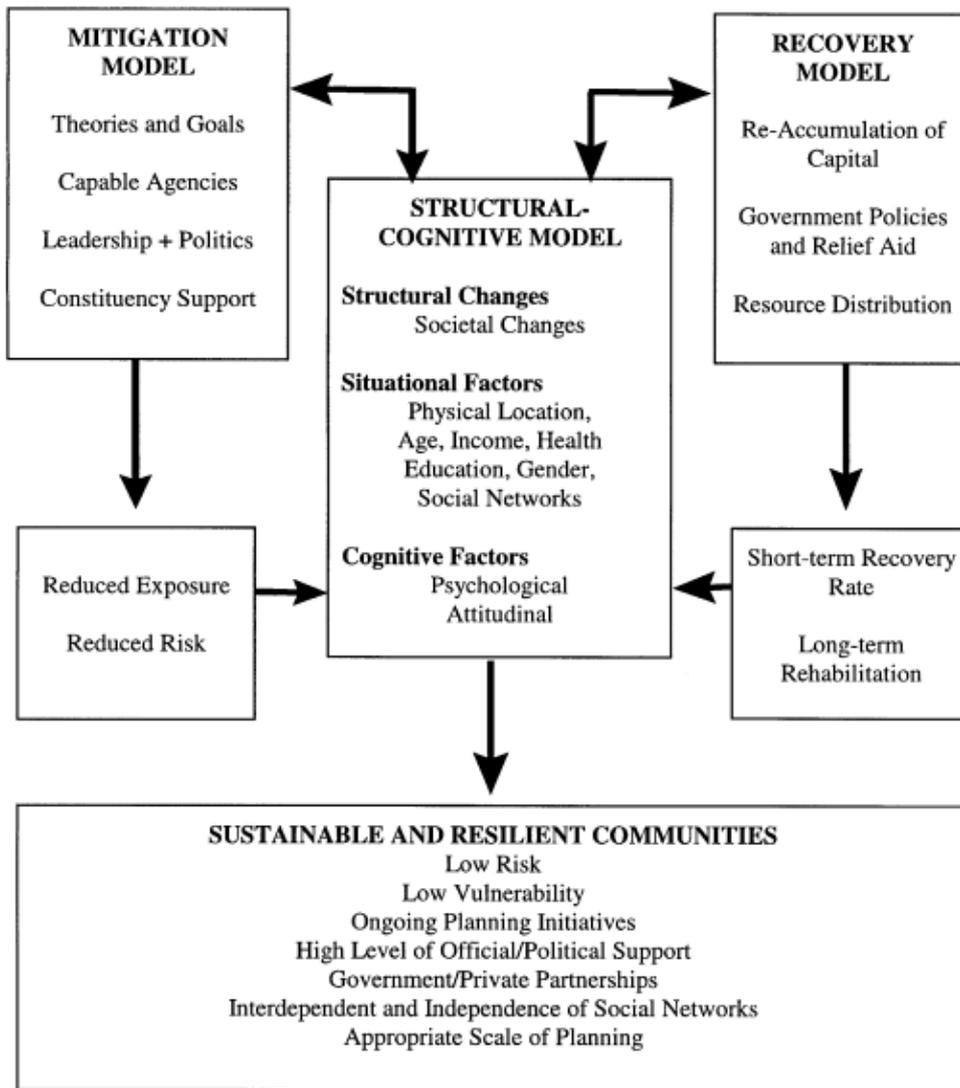
See text for details; feedback loops not shown.
Adapted from Peacock and Ragsdale (1997); Tobin and Montz (1997) and Waugh (1996).

Fig. 1. Sustainable and resilient communities in hazardous environments: a framework for analysis

Mitigation Model

Mitigation programs aim to reduce exposure and risks. For example, the flood embankments protect communities and reduce risks for the hazard prone people. Further, causal linkages between the elements need to be attended if the mitigation programs are to be successful. Further goals must be clearly articulated, sufficient resources made available, and commitments made in the long term.

Recovery   Model

It would not be possible to eliminate all disasters due to their spatial location – some locations will always remain hazard prone. Therefore focus on recovery is pertinent. This requires long term rehab processes that are affected by the prevailing socio- economic processes and structural constraints. Local participation is also important. In this respect, Peacock and Ragsdale suggested that to understand recovery, we need to focus on a) re-accumulation of capital and physical infrastructure b)policies and programmes of govt agencies, private organizations and businesses c) resource distribution. They suggested that recovery of indiv household is an

indication of recovery at the societal level and capital re-accumulation processes and networks which enable this process.

Relief policies and programmes affect rate and patterns of recovery – many relief prog strive to return the status quo – or return to the normal – so they never really address the equity issue and developments and root causes of hazards are never addressed. Hence cycle of disaster – damage repair – disaster is continued. Social inequalities, community heterogeneity and competition for scarce resources impose constraints on recovery processes.

Structural-Cognitive model

Sustainability requires a third filter – "one that incorporates changes in the structure and thinking of society to accommodate hazards within the framework of day to day affairs". Otherwise many factors will constrain mitigation policies. These constraints may be structural, which deter development by preserving old systems and attitudes, perceptions which create unfavourable environments. Age, family structure, wealth, gender, ethnicity, education, and nhbd characterstics, among other situational traits may lead to varied outcomes (Ollenburger and Tobin 1998).

Sustainable/resilient communities

In theory such communities should be able to withstand extreme geophysical process and recover rapidly from disasters whenever they occur. Sustainability and resilience are then contingent upon careful planning and organization of society – both to ameliorate the impacts of disasters and to facilitate the recovery processes.

The three models given above are inter-related and will have significant bearing on sustainability goals.

Borrowing from all the three models, the characterstics of sustainable and resilient communities must include:

- Lowered levels of risk to all members through reduced exposure to the geophysical event. – that is less hazard prone communities
- Reduced levels of vulnerability for all members of the society. Reduced vulnerabilities must include strategies to help politically and economically marginalized people.
- Planning for sustainability and resilience must be ongoing. – that is planning must be long term – and these goals at forefront of all planning.
- High levels of support from agencies and political leaders- that is without political will – sustainability will not be achieved.
- Incorporation of partnerships and cooperation at different govt levels to provide appropriate leadership, skills, resources, local knowledge for implementation of mitigation projects.
- Strengthened networks for independent and interdependent segments of society. Social networks must be resilient to withstand changes in vertical and horizontal relations – through which decisions are made.
- Planning at the appropriate scale – due to globalizing of the economy- decisions are often divorced from local level. Recovery processes may not be in the hands of local business persons but subject to absentee employers (multinational corporations).

These factors need to be addressed in planning for sustainable communities.

Findings:

While these models are conceptually sound, in practice, obstacles need to be overcome as shown by some concerns as identified by the hazard managers in the State of Florida, US (which also experience Hurricane Andrew).:

a) New comers in the florida – whose population has been increasing –due to net in migration do not have or have little knowledge about the hazard potential and limited experience with such disasters
b) Global warming leads to warming of Atlantic ocean leading to tropical storms. Hence Mitigation models that seek to reduce exposure, and risk are facing new challenges.
c)demographic structure – as there is rapid growth of population – so a larger number of people are now hazard prone and will inevitable increase disaster losses.
d)Immigrants are located in the coastal areas – and all these dwellings are at a risk from hurricanes and floods.

e)The concurrency act, requires developers to anticipate water and sewage needs in planning development – and the law could be used to facilitate and enhance hazard mitigation planning

f)A considerable that is 20% of population is older that is above 65 years, and another 24% is below 18 years – and in terms of developing sustainable communities present different problems. Morrow (1997a) has shown that elderly were disproportionately impacted by Hurricane Andrew with 73% solely reliant on social security.

g)Evacuation, response planning thus must take into account these demographic traits with special needs of elderly taken into account.

h) Gender relations and issues of domestic violence also need to be taken into account.

Need for all the three models to work in tandem:

The Florida case study points out to the several problems that will be encountered at every step if sustainability and resilience becomes an accepted planning goals. Characterstics shown in fig 1 do not exists in Florida. The risk from hazards – and hurricanes remain very high. Two features however stand out – if we are to use the fig 1 – to achieve the goal of sustainable and resilient communities 1) Mitigation and recovery models must work in cooperation and 2) roles of structural and cognitive factors must be fully understood. There is a need to understand how each element as presented in fig 1 can play a role in terms of pre-disaster planning, and post disaster studies.

Social Vulnerability to Climate change and the architecture of Entitlements

By W Neil Adger and P Mick Kelly

Key Themes : Resilience, Adaptation and Entitlements

Summary :

The paper suggests that the first step towards conceptual model of vulnerability to climate change must include appraising the social and economic processes that hinder or facilitate adaptation. Vulnerability is defined as an individual or a collective condition of social groups and communities. Adapatation would put a stress on these individual and collective groups – however vulnerability as well as adaptation is determined by the 'architecture of entitlements' available to the individual or social groups which would allow them to cope up with the adversity. Thus concept of 'entitlement' developed within neoliberal and institutional economics is extended to this perspective. In this conceptual framework, vulnerability is then defined as a socially constructed phenomenon in turn influenced by social and institutional factors and relations.

This framework is used to study a district in coastal lowland Vietnam. It asks the question in the context of this case study:

Whether a social vulnerability can be empirically observed in a fashion that captures the complexity of the state of vulnerability, its causes and its potential points of mitigation; and
Whether this social vulnerability concept facilitates comparison over time and across different populations?

The authors suggests from this case study that vulnerability framework can be operationalized, and that the nature of vulnerability of these coastal populations is intertwined with the wider political economy and structures of entitlements.

The lessons for the global assessment from this case study, the authors suggests – are that given the complexity of the factors exhibited in the shaping of the vulnerability, it is not appropriate to use this framework to aggregate from one geo-political scale to another – from local to regional levels in the measure of vulnerability. This is also because the analysis of vulnerability is presented in terms of individual or groups – that is economic, social and political circumstances specific to those groups. To attempt to aggregate would mean losing out on this precise richness and diversity of entitlement architecture and the range of adaptive responses.

However, the authors conclude that there is a type of global vulnerability assessment that is meaningful through which global vulnerability is assessed – for eg questions such as what role do elements of globalisation of world economy play in facilitating or hindering the responses of the international community to climate change? However, such responses, still would face the problem of masking, regional, national and local details – which could otherwise yield valuable lessons.

Cultures of Disaster : Society and Natural Hazards in the Philippines

By Greg Bankoff

Published by Routledge, 2002

Key Themes : Resilience, coping, adaptation and Disasters

In this fascinating and comprehensive study, Greg Bankoff traces the history of natural hazards in the Philippines from the records kept by the Spanish colonizers to the "Calamitous Nineties," and assesses the effectiveness of the relief mechanisms that have evolved to cope with these occurrences. He also examines the correlation between this history of natural disasters and the social hierarchy within Filipino society. The constant threat of disaster has been integrated into the schema of daily life to such an extent that a 'culture of disaster' has been formed.

Stretching the Bonds : The Families of Andrew

By Betty Hearn Morrow

In 'Hurricane Andrew' ed by Walter Peacock; Betty Morrow and Hugh Gladwin; Routledge publication, London and New York; 1997 (pg 141-170)

Key Themes: Social Capital and Resilience

Research Methodology : Survey of the households in South Dade affected by Hurricane Andrews

Abstract : Issues and findings:

In the competitive post disaster recovery period, each family's social and economic position as well as connections with the larger community can be influencing the outcome of the household (Drabek et al 1975; Drabek and Key 1982; Bolin 192).

Disaster Studies have shown that recovery of families are contingent upon – the use of personal resources – for eg savings, insurance etc; support from informal kinship systems and thirdly institutional such as govt support. While survivors may use all the three – the dominant use of systems – is dependent upon upn the larger political and economic settings (Dynes 1975; Bolin and Trainer 1978; Bates and Peacock 1989b). Research has suggested that in industrialised countries, kinship ties, for eg are important but not primary (Drabek and key 1976; Bolin 1982; Erickson et al 1976).

According to Metro Dade Planning department, Hurricane Andrew affected 130,000 houeholds in South Dade and three fourth of the families were a unit of two or more related persons, and an average household size was around three – but non nuclear kin often lived together. The 1990 census of Dade also showed that 10% of hh included grand children, 15% were headed by women – and were largely poor.

Kinship support:

Before the Storm:
-For one third households in survey relatives were very important source of information about the impending storm.
-14% HH in the survey received assistance from the households in preparing their homes – among those who had kins in the area – reported only 16%.

-In terms of receiving aid the logistics regression models used suggested that minority families are more apt to have been helped by relatives. Also, black and Hispanic households reciefing the support from relatives are nearly twice as high as Anglos (or English). While elder and single-mother households display not much differences; the odds for widows are 2.4 times higher. Homeowners had twice as much assistance than the renters.

-In terms of giving aid, the examining households suggested that 18% of them played a major role in preparing the relatives home for the hurricane. For those who had relatives closeby the figure changes to 22%.

The researchers conclude that overall the kin networks were underutilised during hurricane preparations.

During the Storm:

-About 54% of all hh located in evacuation zones evacuated completely with only 5 % leaving at least one member of the household behind. 4% reported staying back as they had no place to go and & 7% of the households reported staying back as they were too poor and had not place to. While most south florida people stayed at their homes, relatives and friends congregated at homes and houses that they perceived were safest.

After the Storm:

-Assistance from relatives was somewhat higher after the storm. 24% of the relatives reported receiving major kin assistance with things such as debris removals, repairs and supplies. 30% of the relatives reported assisting relatives after the storm. The logistics regression model suggested that black families are about 1.5 times more likely than Anglo families in providing help. Income differences were found to be significant – and chances of being a helper were related with income levels. Under severe conditions, family networks became a significant sources of help in aftermath of a disaster. Further sharing losses and hardship with kin is an important source of solace for the Andrew's victims

Homeless families

As per the Governor disaster planning and response review committee 1993; 180,000 people were homeless for some period of time after Andrew. Families split up sending young or elderly away from the terrible conditions in South Dade. Temporary housing was grossly insufficient and displaced people could not find a place to rent after the Andrew in South Dade. Thus due to lack of other decent house, thousands continued to stay in badly damaged houses and apartments or their cars – sometimes doubling there with their friends and relatives after the Andrew. In absence of rental placement, the preferred choice was that of staying with relatives. In all 12% of the total sample reported taking to relatives. And while the poorer relatives are less apt to have kin move in, those who do are likely to stay longer.

Agency Assistance:

There were several impediments in getting assistance:
-   filing an application was a problem
-   no public transport available – so mobility for those without cars was a problem in the first few weeks.
-   Agencies themselves had difficult time finding suitable place to work in
-   Women who had to look after children and were without cars were at a distinct disadvantage.
-   The application procedures were very complicated and applications were rarely integrated which meant several trips to FEMA.
-   Negotiating the aid process – qualifying households took a great deal of time, energy and skills with the bureaucracy.
-   While around 3000 were given FEMA house trailers to stay, thousands were also denied them – as households did not fit the favoured small nuclear family units.

Recovery:

-The wealth and upper middle class communities were first to regain some normalcy. And random survey from minority working class home owners of 200 households suggested that 70% of the families had their homes severely damaged and destroyed – but yet were neglected by the authorities as their attention was on well to do nhbd. Almost al the community's emergency and relief assistance came in the first weeks due to efforts of local catholic church and not authorities. Less than 18% reported assistance from FEMA. As the houses were badly damaged, 56% stayed with relatives, 21% stayed on the trailers; 18% stayed with friends; and 9% rented a place. Average time of displacement was almost the year after the disaster and 38% had not returned entirely even after one year. Household stress was high amongst them.

Impact on nhbd or kin:

- One third reported less stress with their neighbours than before the hurricane. 90% had felt a sense of sharing in the nhbd after the storm and most said it was still high a year later. This supports the idea of 'therapeutic community' in the after math and also indicates more lasting effects than usually reported.
- On the other hand, the unevenness of recovery led to some strain among neighbours – stories of how people next doors got more money and resentments over handouts by FEMA or larger insurance payouts. Post disaster frustrations sometimes brought the class and ethnic friction – already existing in the community to the surface.

- **Some conclusions:**

-for families who are disadvantaged, in a competitive socio-political recovery process – informal kinship ties are important. The case of hurricane Andrew shows that urban families regardless of their ethnicity are embedded in kinship networks and are an important resource when disaster strikes. An explanation for many people not receiving help from the local kin could be that they themselves had problems as they too were impacted. Other studies have shown that local kin are important if they too are not impacted by the disasters (Quarantelli 1960; Fogelman and Parenton 1956. This research also shows that families tend to be less source of assistance in large scale societies. However while dependence on kin diminishes it nevertheless remains important.

The authors also suggests policy recommendations such as qualification criteria for assistance should not penalise multi-family households. As recovery moved from cleanup activities to reconstruction activities, families relied less on kinship and more on institutional supports. Thus more effort need to be put on enabling coordination of assistance programmes to make them more successful.

Participation, Social Capital and Vulnerability to Urban Flooding in Guyana

By Mark Pelling

In Journal of International Development 10; 469-486; 1998

Key Themes : Social Capital and Disasters

Research Question : Does contemporary participatory models of management enable building of social capital and enhance hazard or risk management strategy?

Research Method : Household Survey Interviews were conducted in two areas of high flood risk – namely Georgetown, Guyana's capital city and Plaisance of peri-urban village – 12 km east of Georgetown. They identified household asset profiles, and comparative risk of flooding based on past experiences and impacts. These survey findings were then supported by indepth interviews with 10% subsample for which residential histories were constructed.

Theoretical framework used:

Access Mechanisms : institutions, Markets and Social Capital

Newer approaches have acknowledged the role of social capital in shaping mechanisms of resource distribution and means of access. The idea is that it promotes
Participatory methodologies through which decision making and responsibility are re-distributed to overcoming market based inefficencies in redistributing of resources.

Vulnerability and Access to Assets:

Vulnerability and Coping capacities are linked with form and availability of assets – which include information as an asset amongst the resources.

Ideologies of Participatory development

Participatory development has bee approached from the empowerment perspective – bottom up and inclusive and representative leadership – which leads to enhancing of social capital of communities. The other perspective is the utilitarian perspective where participation is a means for efficient planning. However participation as a social change has also been cautioned – as in some cases some groups better placed are able to articulate their private interests as public interests.

Findings:

-The maps of the settlements showed that those neighbourhoods with better representation in community leadership were those neighbourhoods that had lower levels of vulnerability to flood hazard. Thus the same socio-economic processes which created social and economic differentiation within the settlements had underlied the creation of vulnerability to flood hazard – and were alongside shaping the access to local political decisionmaking.

-Vulnerable households relied primarily on individual mitigation strategies or adaptation during flood events due to underdeveloped civil society, weak local and government and failure of the participatory methods to be inclusive or representative of the most marginalised.

-Instead of promoting social capital, participatory decisionmaking was taken away from the local communities and recentralised authority with the local and national elite. Participation was unsuccessful in redistributing decisionmaking power and strengthening of local social capital and community decisionmaking capacity.

 -The opportunity to build local social capital into hazard reduction strategy was lost due to top town approach of community targeting which failed to develop horizontal social ties but instead strengthened vertical linkages of dependency and control.

- There was thus a failure in both empowerment through social capital building and utilitarian agendas of participation which were identified in the constructions of participation utilised by the executing agencies and govt of Guyana.

Social Capital: A Missing Link to Disaster Recovery

By Yuko Nakagawa and Rajib Shaw

Key Themes : Social Capital and Disasters

Abstract :

Post-disaster recovery processes should be considered as opportunities for development, by revitalizing the local economy and upgrading livelihoods and living conditions. Social capital, which is defined as a function of trust, social norms, participation, and network, can play an important role in recovery. This paper examines the role of social capital in the post earthquake rehabilitation and reconstruction programs in two cases: Kobe, Japan and Gujarat, India. The Kobe case study shows that the community with social capital and with a tradition of community activities can pro-actively participate in the reconstruction program, and thereby can make a successful and speedy recovery. A model for bonding, bridging and linking social capital was developed from the Kobe experience, and was applied to Gujarat in four different communities. It was observed that the community with social capital records the highest satisfaction rate for the new town planning and has the speediest recovery rate. The role of community leaders has been prominent in utilizing social capital in the recovery process, and facilitating collective decision-making. Thus, although the two case studies differ in socio-economic and cultural contexts, the community's social capital and leadership are found to be the most effective elements in both cases in enhancing collective actions and disaster recovery.

Research Question : Even though lots of effort is put into disaster recovery
programs, why have some communities carried out faster (in terms of time frame) and more satisfying (in terms of holistic and participatory) recovery programs while others have not? Where do such differences come from? While there is possibly no straightforward answer, since it is a complex mixture of social, economic, religious,

political and other issues; in this paper, an attempt has been made by using social capital as a measure to find an answer to this question.

Research Method : A comparative study was undertaken in Kobe in Japan and Gujarat in India to analyze the post-earthquake recovery process, and to find the common elements to ensure sustainability.

In this study, the first step was data collection and analysis in Kobe, Japan on the rehabilitation program following the Kobe Earthquake. Multiple methods were used for data collection—from primary as well as secondary sources. Primary data was collected through questionnaire survey and interviews with key stakeholders. Secondary data was collected and based on the data analysis, a model was developed focusing on the role of social capital in the recovery program. This model was then applied to the earthquake-affected area of Gujarat, India, and its applicability was studied in order to reach a conclusion. Two neighborhoods were selected, one from Kobe and the other from the city of Bhuj in Gujarat. Criteria for selection of the neighborhoods were: 1) similar type of hazard, 2) urban scenario, 3) representation from developed and developing countries, 4) relatively higher effects of damage, and 5) categorization as a special zoning area in the reconstruction plan. Accordingly, Mano neighborhood from Kobe, and the Old Town of Bhuj were selected as case study areas. For the Kobe case study, mainly secondary data sources were used. In addition, interviews were conducted with academicians, NGOs, private consulting firms, and residents in the local communities. For the Gujarat case study, both primary and secondary data were used equally.

Concepts used :

Social Capital: Social capital, in general, refers to the trust, social norms, and networks which affect social and economic activities. A higher accumulation of such capital contributes significantly to social, political and even economic performance, for better or worse. While different authors have referred to it in different way, in our analysis, we define social capital as the function of mutual trust, social networks of both individuals and groups, and social norms such as obligation and willingness toward mutually beneficial collective action, which is, in this paper, the post-disaster recovery process. This social capital will be facilitated and/or enforced by trust for community leaders and also by the political maturity of the community. Political maturity means that the community is accustomed to consensus building by having meetings and discussions among community members.

Findings:

Two case studies of Kobe and Gujarat Earthquakes show that although the local socioeconomic and cultural backgrounds are different in these two areas, the recovery process of urban areas is quite similar. At every stage of the disaster cycle (rescue, relief and rehabilitation), the communities played the most important roles among other concerned stakeholders. In both cases, the communities with social capital are found to be efficient in rescue and relief. In Bhuj, the cases of local Mano and Soni affected community cases show, even in the challenging situation of rehabilitation, communities with social capital can perform well. But social capital is not the sole factor determining speedy and satisfying recovery. As the Mano case indicated, strong leadership inside the community is also essential for any collective action. Also, from various interviews conducted during the field survey in Gujarat, many NGO members commented that community leadership was the most essential aspect of the successful rehabilitation in both urban and rural areas. The results of the questionnaires conducted in Bhuj also show that the Soni community has the highest trust in its community leader. It is the trust of the community in their leaders which helped Soni to take collective decisions in the time of emergency.

The author suggests that the three actions for social capital : recognize, preserve/conserve and invest will lead to "mutually beneficial collective actions" and "shared thinking" in the communities. Shaw and Sinha (2003) proposed a policy framework for a four-tier system of community, local government, state government and central government for effective decision-making under the Risk Management Framework. It is the responsibility of the community and its leaders to increase their social capital and use it effectively for the post disaster recovery process. However, at the policy level, it is required to recognize the social capital of the communities as an asset. This will help in policy formulation from a grass-roots perspective, and will enhance the recovery program.

Dynes R.R. 2002. *The Importance of Social Capital in Disaster Response.* **University of Delaware. Newark. De.**

Key Themes: Disasters and Social Capital

Article describes social capital as aspects of social structure and as a resource to achieve goals. It also describes about disaster- its definition and research base and how social capital can be helpful in disaster response.

Disasters and Social order

By Gary A Kreps
Sociological Theory, Vol 3, No 1 (Spring 1985) pp 49-64

Key Themes: Disaster Response; structures and Human Agency

<u>**Abstract**</u>**:**

The paper suggests some answers/guidelines to the above question and emphasizes the need for taxonomies to link properties of disasters and properties of social structure. There is much debate on what is disaster. The paper proposes, following from several other authors such as Fritz, Dynes on four core properties of disasters: Disasters are *events* that can be designated in time and space. These events have *impacts* on the *social units*. These units enact *response*s related to these impacts. The paper suggests a 64 – cell taxonomy of the responses of social units to the threat or occurrences of disasters are suggested as a solution to enable the linkages after disaters. The taxonomy highlights the dialectical relation between social action and social order. This dialectical relation is expressed by a metric which merges qualitative descriptions of the content of the social structure with quantitative depictions of its forms.

Research Question: How are disasters and social structure related? How does disasters affect social structures and social orders?

Research Method: Review of existing literatures and studies

Concepts/Conceptual framework used for Analysis

Social Structures and disasters

In early literature social structures are considered as forms of human association– and a study of social structure is a study of social units and responses. In this paper, problems of defining and classifying social units is identified and solutions suggested.
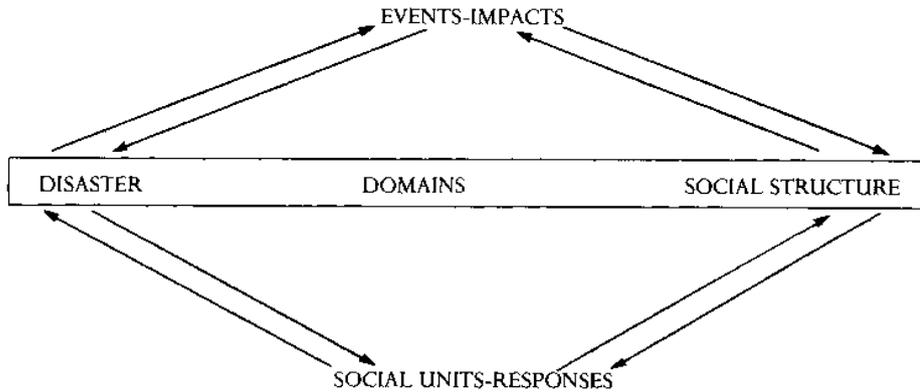
Social Structure and social order :

The paper asks the question, assuming that structure exists, : how is social structure created and how is it maintained – namely the question of social order. The authors suggests that human responses to disaster highlight that social structure and social order are dialectically related. That is both are autonomous but both can be reduced to one another. They suggests that that people are making choices and creating social structures when routines are disrupted.

However the importance of already existing social structures – for eg police, hospital personnel, etc cannot be denied. They are in the disaster context ritualizing their already existing roles. In other words, social action is both the cause and effect of social order. Interpreted as social order, what is evidenced are the social units of various types. Some exist prior to the event – others are new. And these units – while can be considered fixed are transformed by the action of human beings. That is social order is both the cause and effect of social action. This is the dialectic of social structure.

The paper also suggests a revision of Fritz (1961) definition which points to the relationship between disaster and social structure. The revised definition suggested is "disasters are events in which societies or their larger subunits (eg communities, regions) incur physical damages and losses and/or disruption of their routine functioning. Both the causes and effects of these events are related to the social structures and processes of societies or their subunits". This is shown diagrammatically:

Figure 1. Relationship Between Social Structure and Disaster

The paper uses the bridging concept of "Domains" to show this relationship between disasters and social structure. Domains represent actual or threatened impacts as legitimated spheres of collective action – and a building of an organization/association.

The continous arrows shows that disasters and social structures are at once antecedents and consequent of each other. Pre- and post impact domains capture the life history of disaster as historical happening or the temporal dimension of the disaster.

Responses to disasters as alternative forms of association:

Responses to disasters reflect alternative forms of association. These forms are enacted by different types of social units. The authors study of the disaster archives for 15 disaster events (earthquake, floods, hurricanes, tornadoes) show 423 instances of organization.

TABLE 4:
TYPE OF DISASTER DOMAINS OF ENACTING UNITS

Hazard-vulnerability analysis	3	.7
Standby human and material analysis	6	1.4
Disaster preparedness, planning and training	11	2.6
Public education	0	0.0
Hazard mitigation-structural	0	0.0
Hazard mitigation-nonstructural	0	0.0
Insurance	0	0.0
Issuance of predictions and warnings	11	2.6
Dissemination of predictions and warnings	15	3.5
Evacuation	24	5.7
Protective action	17	4.0
Mobilization of emergency personnel and resources	70	16.5
Search and rescue	29	6.9
Medical care	24	5.7
Care of fatalities	5	1.2
Providing victim basic needs	50	11.8
Damage needs and assessment	14	3.3
Damage control	33	7.8
Restoration of essential services	21	5.0
Public information	20	4.7
Traffic control	31	7.3
Law enforcement	3	.7
Local governance	1	.2
Coordination and control	21	5.0
Reconstruction of physical structures	6	1.4
Reestablishment of economic functioning	2	.5
Resumption of other social institutions	2	.5
Determining liability for the event	0	0.0
Reconstruction planning	5	1.2
Totals	423	100.0

The four basic elements found in these 423 instances of organization were:

A – Activities
R - human and material resources
T – Tasks
D – Domains

These four elements are individually necessary and collectively sufficient for organization to exist. Each of the four elements represents a unique expression of social structure, that their mutual co-presence points to the existence of an organization.

For example, an organization of search and rescue emerges after an earthquake.
Few individuals from neighbouring area join the search activities (A). These may include indiv with training or formal agencies such as municipalty and voluntary groups (R). A task structure emerges from these groups within several hours of impact (T). A legitimacy of an integrated search and rescue operation is not officially recognized by govt officials until about 12 hours after the impact (D). The research gives different forms of permutation combinations of ARTD.

Domains (D) and Tasks (T) are the ends of the organization while Resource R and Activites A are its means. Domains are external and in the durkheimian sense real and constraining. They are individually created and legitimated. Domain points to a form of association that is distinct from all others. Its establishment may take place during any point of origin of the organization.

Following from the above, a use of 64 cell taxonomy of associations is proposed:

TABLE 1:
TAXONOMY OF FORMS OF ASSOCIATION

Organizational Forms	Marginal	Three Element Forms	Two Element Forms	One Element Forms
D-T-R-A	167	D-T-R	D-T	D
D-T-A-R	5	D-T-A	D-R	T
D-R-A-T	27	D-R-A	D-A	R
D-R-T-A	53	D-R-T	T-R	A
D-A-T-R	2	D-A-T	*T-A	
D-A-R-T	1	D-A-R	T-D	
T-R-A-D	21	T-R-A	R-A	
T-R-D-A	4	T-R-D	R-D	
T-A-D-R	*	*T-A-D	R-T	
T-A-R-D	*	*T-A-R	A-D	
T-D-R-A	1	T-D-R	A-T	
T-D-A-R	*	*T-D-A	A-R	
R-A-D-T	15	R-A-D		
R-A-T-D	13	R-A-T		
R-D-T-A	67	R-D-T		
R-D-A-T	12	R-D-A		
R-T-D-A	4	R-T-D		
R-T-A-D	13	R-T-A		
A-D-T-R	1	A-D-T		
A-D-R-T	1	A-D-R		
A-T-D-R	2	A-T-D		
A-T-R-D	4	A-T-R		
A-R-D-T	5	A-R-D		
A-R-T-D	5	A-R-T		
Total	423			

*Indicates forms not located with reference to origins of organization

Conclusions:

Analysis of social structure and disasters shows that actual or threatened impacts translate as domains of collective action that are enacted as alternative forms of association. This translation is a part and parcel of social construction of a set of circumstances or events called as disasters.

Governmental Response to Disasters : The conflict between Bureaucratic Procedures and Emergent Norms

By Saundra K Schneider

Key Themes : Disaster Response; structures and Human Agency
Abstract:

The article suggests the answer is - key to a successful govt response depends upon the extent to which post disaster human behaviour corresponds to prior govt expectations and planning. In the aftermath of every disaster – there is always a gap between emergent norms that guide social interactions and the bureaucratic norms that dominate the govt activity. Examining US's efforts in handling disasters in five contexts – which include both the successes as well as failures, it suggests that when the gap is large, the relief effort – is perceived as failure, when the gap is small – perceived as success.

Thus the gap is the primary determinant of public perceptions about the success and failure of govt efforts.

Research question : Why are some govt disaster relief efforts perceived to be successful while others are believed to be failures?

Research Method : Review of literature on five disaster contexts in US namely impact of Hurricane Hugo in a)Caribbean islands b)South Carolina c) North Carolina in 1989 and d) Loma Preita Earthquake in Carolina in 1989 e) Floods in South Carolina in 1990

Concepts/Analytical framework used used:

Bureaucratic   norms,   emergent   norms   and   relation   between   the   two:

Bureaucratic norms:
They include : explict objectives, formal structure, division of labour, and set of policies and procedures guiding organizational activity

Emergent norms:
They include : a) collective behaviour (defined as non institutionalized interactions and behaviour patterns b) widespread search for meaning amongst the affected population – also called as the milling process.

Milling process:
The milling process represents situations where people do not know how to act because their usual sources of guidance are unavailable or are irrelevant. During the milling process, new forms of interactions emerge among affected population

Keynoting process:
The selection of specific ideas and the concurrent elimination of others is called keynoting. This means that specific themes and symbols will eventually give meaning to the disruptive events. Keynoting provides potential direction for group activity, eventually enabling the affected population to end the milling activity.

The dominant symbols and ideas which emerge during the keynoting activity create a new set of norms to guide the behaviour.

Milling and keynoting in the five disaster contexts in US:

The govt response in Hurricane Hugo in Carribean islands in 1989 – suggests that the govt could not deal with the situation and the institutionalized govt response broke down completely. There were instances of social unrest and disorder. The gap between bureaucratic and emergent norms was very wide.

South Carolina's experience with hurricane Hugo in 1989 suggests that miling process began immediately. While there were no instances of social unrest, many small towns or cut off areas received little outside assistance and relief. The sense of helplessness and anomie intensified among the victims as recovery efforts progressed. A nationwide perception developed that the govt disaster recovery efforts particularly that of FEMA were a failure.

Experience of Hugo in North Carolina represented a more optimal response pattern. The gap was virtually non existent. The emergent norms were supportive of existing policies and facilitated recovery activities. – this was a more conducive environment for the govt agencies and there was little need to deviate from the standard operating procedures.

The Loma Prieta Earthquake in California in 1989 suggests that although the authorities did deal with the immediate dangers of he earthquake, they were less successful with long term aspects of relief efforts. Some officials also disseminated inaccurate information. The milling process began during the recovery phase as the population realized that life would not immediately return to normal.. However there was also a popular belief that public institutions were not solving the problems. The keynoting behaviour in California was largely carried out by the mass media . The dominant message was that FEMA was incapable of providing assistance to survivors. The emergent norm in this context was an extreme sense of disillusionment.

Research Findings:

Conflict between Bureaucratic and Emergent norms is the key to success or failure of the responses.

Thus two distinct norms operate together – bureaucratic and emergent after disaster and the sources of the two are largely independent of eachother. As a result some gaps always exists. Examining the impact of Hurrican in different parts of US, the article suggests that it is the extent of the gap between govt plans and needs of affected population that determines successes or failures of the relief efforts.

Response to Social Crisis and Disaster

By E L Quarantelli; Russel R Dynes

Annual Review of Sociology, Vol 3 (1977) pg 23-49

Key Themes : Disaster Response; structures and Human Agency

Abstract :

The authors in this paper selectively summarise and highlight the basic substantive and structural trends from the literature which assumes disaster primarily a social phenomenon. The authors through this review highlight what has been ignored so far in the disaster literature. Their review also refer mainly to post 1960 articles and studies, including several studies involved in the codification of the disasters. These codifications include works on general codification as well as series of codification attempts on more specific topics.

Trends/perspectives discussed in the paper:

1. Efforts at Codification:

The first codification of findings was done by Fritz in 1961. However almost no systematic work has been done to examine what Fritz indicated the positive outcomes of the disasters – the importance of the therapeutic community in softening the psychological impact for victims. A decade after Fritz's article, Barton (1970) wrote most sophisticated general codification effort. Barton singles out key problems of indiv behaviours in disasters, such as matter of role definition, role competence, and possibly role conflicts during emergencies. Other includes question of coordination of indiv and organizational behaviours in disasters. They highlight complex inter-relationships between factors such as organizational mobilization and rate of non adaptive behaviour of

individuals in emergencies. It further explains the rise of therapeutic community and what factors affect individual behaviour with respect to community and comes out with different kinds of propositions such as : subjective deprivation makes for less sympathy and identification with the victims; conversely, the more people feel relatively better off than others, the more concerned are they with the deprived. He thus derived empirically testable hypothesis as well as the theoretical frameworks within which they were located.

Another recent codification effort was that by Dynes in 'organized behaviour in disaster : 1974; in American Society. Dynes suggests that organizational mobilization can be examined by separating out four different types of groups likely to respond to disasters – namely established, expanding, extending, and emergent organizations. It also shows how community disaster structure emerges from the creation and coordination of task subsytems. However little attention was given to indiv or families. In yet another effort, Mileti in 1975 in 'Human Systems in extreme environment : A sociological perspective' systematically extracts findings across a range of levels, from individual to groups, organizations, community, society and to international level. Mileti suggested that largest amounts of study were at the level of individual and then at the group. In another monograph on 'Organisational communications and decision making in crisis by Dynes and Quarantelli 1976,using 35 sources generated 294 propositions. Of the total number 125 treated decisionmaking as dependent variable and 21 treated it as the independent variable. Stallings in 1977 used fourfold typology of organized behaviour in disasters – established, expanding, extending and emergent groups and examined three empirical research to find out what kind of typology did they generate – which led to seventeen different propositions. Apart from the above the codification efforts included early warning systems (Mc Lukie 1971),police/civil defence - civilian relations in disasters (Kennedy 1969;Anderson 1969), community conflict in disasters, communications in disasters (Stallings 1971), and panic behaviour (quarantelli 1977).

The problems with these codification was that the studies treated all data sources as having equal validity and acceptability. For eg propositions based on solidly derived evidence were given no more weight than that derived on chance observations. However, the positive factor is that although the data sources do not overlap, they converge on roughly similar kinds of propositions.

2) Social organizational rather than social psychological emphasis

The reasons for behaviours were set in seeking explanations in the social setting or structure, rather than the psychological make up of individuals. Fundamental questions about groups as groups, their composition, and behaviours and their inter-relationships were addressed in research efforts.

3)Groups rather than individual as basic units

There is a move from socio-psycho to socio- organizational studies that is explanation is sought in social setting or structure rather than psychological make up of the individual. The unit of analysis was group rather than individual.

The groups level study looked particularly into different kinds of organizations – for example response of police, utilities, hospitals – and suggested that the effectiveness and efficency of disasters are dependent on viability of emergent organizations rather than psychological states or readiness of individual victims. (Dynes 1975)

Three problems on research on organizations include the fact that key groups operative do not have classic structural boundaries like that of bureaucracy – for eg Red Cross has amorphous boundaries, and few clear cut members, vague lines of authority – and methodologically it is not clear as to how they should be studied. Further many informal groups lack the assumptions held by sociological theories – division of labour, lack of communication systems. The stratification system – hallmark of formal organizations. Finally, disaster situations tend to be peopled by emergent groups which have no existence before and now have a transitory existence – but their existence is crucial to the response systems. They include temporary search and rescue teams; community-coordinating groups. Formal organizational theory is deficent on the analysis of such emergent groups.

4) Increasing use of Systems notions:

Disaster situations are often led by emergent groups who have transitory existence – but play an important role in disaster situations. Formal organizational theory is deficent on the question of such emergent groups. Thus new conceptualizations such as collective behaviour theories or open-system theories had to be built.

The notion of system was used to accept existence of "emergent groups". This means – given the assumption of a "system" you ask " What services were delivered by the mental health system after X tornado?" How efficient was the system in this delivery? Was there a delivery system or none at all before the disasters?"

An interdisciplinary research – for eg by Mileti (1975) asserted that " the concept of system stress appears to be a mechanism whereby research findings from studies of disaster might, first be integrated together and second, linked to other areas of inquiry in the social sciences". It also suggests "system independence can be maintained, and the consequences of stress within any one systemic level, eg group, organization or community, can be investigated. In the same way, system interpenetration can be recognized and researched at several systemic levels, such as effects of psychological stress or biological functioning, or the effects of organizations stress on the power structure in the community". This perspective is seen as allowing disaster to be viewed as events influenced by ongoing system process.

5) Combination of collective behaviour and complex organization approaches:

The area of collective behaviour or social organization is no more distinct. Research also shows that established and traditional organizations facilitate or creates conditions for emergent organizations – and therefore require both perspectives of collective behaviour and that of complex organization.

6) Pre-Impact period as a source of post impact changes

Disaster research have argued for the "principle of continuity" that is pre-disaster behaviour is probably the best indicator or trans – and post disaster behaviour (Quarantelli 1977). This principle of continuity applies to organizational behaviour as well as behaviour of individuals. For example, there is not much increase in mental health problems after disasters – if mental illness is examined. However, an exception is the destruction of community context in the Buffalo creek flood dam disaster which resulted in widespread and severe psychopathology – this is one of most disrupted community context and led severe mental illnesses.

7) Functional and dysfunctional long run consequences

Studies such as that by Rossi focused on " How long it takes for communities to recover from disasters of different types, of varying intensities, and with communities with different characterstics".

Some studies such as that by Drabek et al 1973 showed that communities were better off with respect to family solidarity. Other studies in Disaster Research Centre (DRC) , Colarado also showed that organizations and communities are better off than before in terms of power positions.

In other words disasters contribute to both stability and to change – they generate both consensus and conflict (Quarantelli & Dynes 1976). This is a step away from the assumption that all disasters are bad – and sociologists have discovered that both good and bad can come out of disasters. Such a lead was given as early as by Prince in 1920 in his work on Halifax explosion – "Catastrophe and social change" .

8) Model building

Schatzman (1960) developed a sequence pattern model of disaster and its consequences for community that emphasized continuity between disaster and non disaster behaviour. Some models are very detailed – for eg, Mileti's 1974 causal model of warning responses for individuals – it links three exogenous variables (incomes, severity of last experience and number of children) with three intermediate endogenous variables (degree of personalness of warning system mode, degree of warning confirmation behavior, and degree of specificity of warning sought) and a final outcome variable reflecting degree of adaptive response (from doing nothing to evacuation).

Other models includes one that combines open systems and collective behaviour theories, for eg those developed by the DRC.

9) Gaps and Challenges

Much of the research undertaken so far has undermined widespread public beliefs and perceptions. For eg, although sufficient evidence shows that there is rarely any looting after disaster in America, this still has to be tested in other countries too. Thus one of the gaps is that the dominant contexts of these studies have been US

and therefore the conclusions still have to be tested in other social contexts. Thus more crosscultural studies are needed.

The authors – quarantelli and Dynes lament that the political nature of disaster phenomenon has not been sufficiently addressed to – although argued by Brown and Goldin as early as in 1973.

The Human Being in Disasters : A Research Perspective

By Charles Fritz, and Harry Williams in "Annals of American Academy of political and social science, Vol 309, Disasters and Disaster Relief (Jan 1957) pg 42-51

Key Themes: Disaster Response; structures and human agency

Abstract :

Many groups and agencies have a vital need for accurate information on how people behave in disasters. This article questions the popular notions of the disasters as represented in the media and based on a number of research findings presents alternative information pertinent to disaster preparedness, control and amelioration. Basing itself on facts rather than popular conceptions, the article discusses how to make disaster warnings effective, behaviour during disasters and the subsequent emergency periods, the problem of people flocking to the area, the need and difficulties of coordination and control of relief activities and trauma of the victims and sources for conflicts between relief agencies and their clients.

Popular perception of disasters Vs real picture : How do people behave in disasters?

According to the popular perceptions, after disaster strikes, people panic, they trample each other, losing all concern for their fellow human beings. After the panic has subsided, they turn to looting and exploitation which the community is rent with conflict. Large number of people are left permanently deranged mentally. This picture is continually reinforced by television prog, journalistic accounts, novels, movies and radios. However those experienced in disasters reject this picture as a product of ignorance, inaccurate observation and fertile imagination. However, in more subtle forms, these stereotypes affect disaster officials and experts and affect their plans. It also affects both the general public and persons who are responsible for protecting and helping the public during disaster.

Since 1950s there have been a number of studies on behaviour of people during the disasters which have tested these popular conceptions. Since most of the popular conceptions focus on 'abnormal', this article focuses on correcting these perceptions by drawing upon the studies which represent the more 'general' and are 'typical' in disaster contexts – in order to influence and correct the perceptions and practices of those involved in disaster response work. Particularly those findings are presented that have a pertinence for disaster amelioration, preparedness and control.

1) **Disaster Warnings**

By and large official worry about giving disaster warnings as they fear that it will cause panic amongst the people. However extensive evidence now suggests that there is no need to fear about such reactions of panic. In fact, an effective message must be clear and specific. Warning messages must be transmitted accurately through channels that will reach entire public.
Research shows that people are reluctant to heed to the warning messages for several reasons - Lack of past experience with disasters the delusion of personal invulnerability (the feeling that it won't get me), dependency upon protecting authorities, reluctance to abandon property and personal possessions was also a common factor weighing against acting on early warning. This does not mean that effective warning is impossible. It means that it is important to look into the human factors in planning of the early warning system.

2) **Survival Behaviour**

When danger is imminent, people take to flight or taking shelter by combating the hazard rather than freezing up or not acting at all. Flight or Fight is the normal behaviour in and during when hazard strikes. However, flight does not mean panic or uncontrolled flight. It is most often orderly with people continuing to think about others

and making rational judgements. Further during the actual impact, people may try to stay alive and also protect their immediate loved ones – for eg Mothers protecting their children…

3)Behaviour during post disaster phase : Social disorganization as an impact

Most people may be stunned, confused, and somewhat disoriented after the impact, they gain sufficient self control to help their kin, family, neighbours and friends. The first one and one –half hours of the disaster iss practically in the hands of the immediate neighbours ….. the problem of moving bodies and saving lives was in their hands. This does not however mean that outside relief support is not needed. Much of the relief activity of the community is sporadic and along the lines of kins and intimacy and therefore general community needs remain unattended.

To an outsider, the initial behaviour of the persons may sound to be too chaotic as behaviours are very heterogenous – some are standing around, others digging debris, helping the injured etc. Because the behaviour is too hetrogenous, it cannot be described in few categories. It is this lack of uniformity of actions that leads an outsider to erroneously conclude that people have panicked.

Fritz suggests:

"What the outsider observer is witnessing is not panic but social organization – uncoordinated activity on a general, community level. It is important to recognize that this social disorganization does not necessarily indicate individual irrationality or personal disorganization. Many individuals and small groups are working within the disaster area with purpose and some degree of organization. However they are likely to be focused on discrete, limited tasks and to appear oblivious to the more general needs for assistance. The central problem of disaster management is to broaden the focus of attention and reestablish genera, coordinated action for this mass of individual and small group actions" (pg 45-46)

4) Convergence :

One of the problems of disaster coordination and control is not from the victims but from the influx of outside – informal and spontaneous actions of persons residing outside the disaster area. This mass assault sometimes seriously hampers the work of administration and organized rescue, medical , relief and rehab programmes.

Effective convergence and coordination requires recognition of the different motives of the convergers. The problem is narrowly conceived as that of restraining "sightseers", looters, and other unauthorized personnel. This is erroneous notion of people coming from exploitative motivations. The actual difference in incidence of looting and other forms of exploitation during peace time and disasters is relatively insignificant. Rather the actions are also motivated by wanting to assist, sympathy, anxiety. Satisfaction of these needs require guidance than indiscriminate restraint.

5) Coordination and Control : how to achieve this?

There are several factors which make coordination difficult amongst which are:

-Effects of Convergence behaviours
- Lack of workable pre-existing plans on a community wide basis. Sometimes, community wider disaster plans exists only on paper – if they are to be made effective then they must be understood and accepted by all those who have a part in them, including general public.
- Inadequate communication or an ambiguity concerning agencies or officials who have the authority to take decisions.
-Disputes between authorities on responsibilities
-Lack of central coordinating mechanism

6) Psychosomatic help

People suffer psychosomatic trauma after disasters. However, they do not drain the psychiatric medical units. Anxieties concerning future are common and effective treatment lies in alleviation of the situations which produced them. Rapid reuniting of families, restoration of familial and occupational routines, rapid and efficient efforts of reconstruction and rehab, can alter these effects. A small proportion may require psychiatric help.

7) Social Solidarity : Integration and disintegration of social solidarity, reemergence of social differentiation process.

There is a dynamic increase in the social solidarity after disaster amongst the affected populace immediately after the emergency. This is due to survival threat as well as common suffering produced by disasters tending to breakdown of pre-existing social distinctions, and altruism.

During first few days, affected people act on common human needs rather than in terms of predisaster differences in social and economic status. This solidarity facilitates recuperation.

If there is no recurrent or persistent survival threat, then after the various emergency tasks are done, the newly engendered social solidarity gradually disintegrates. The process of social differentiation returns and standards of reference change from values of survival to values associated with continuity and stability, in terms of effect on themselves and their intimates rather than the whole community as a whole. Property values and concern with material symbols of status reassert themselves.

Social Conflicts and resentments may also reappear and pre-exisitng conflicts may be intensified by disaster experience.

Thus what is observed is a rapid shift of values from normal to emergency, from social differentiation to social homogeneity and the uneven, selective return to normal standards. This requires developing greater sensitivity to prevailing climate for aid agencies. Further while While conflicts may develop, newer forms of cooperation also are seen to arise.

8) Coordination and preparedness

Most of the human problems lie in lack of coordination amongst people, small groups, officials disaster response agencies each of whom is viewing and attempting to fulfill the needs in their own perspective and capabilities.

When communities or groups do not have practiced plans of actions which are a part of overall disaster response plan the action is too dominated by immediate present. The challenge lies in development of realistic plans for organizing, training, integrating, and coordinating the actions of both general populace and formal disaster agencies.

Complexity and Diversity : Unlocking Social Domains of Disaster response

By Dorothea Hilhorst

In Mapping Vulnerability : Disasters, Development and People

Key themes : Disaster Response; structure and human agency

Abstract:

Outlining the key debates and use and limitations of Structuralist or behavioural paradigm – with first one emphasising structure for action, while the other agency; this paper suggests that the complexity or mutuality paradigm could offer more insight into understanding disaster and responses. However, whilst doing so, it also brings in a new concept of 'social domains' within the complexity theory to enable and account for diversity and human agency in responding to risks and disasters.

Summary:

Complexity theory and disaster studies: Complexity theories are concerned with stability and change in any systems that are complex – that is consisting of independent agents that interact with eachother. While this makes the system inherently unstable, leading to unpredictable and non linear change. This is expressed through principle of spontaneous self organisation – that is interactions within systems and between systems and their environment. Complexity theory is relevant for the disaster studies as they provide an entry point to describe disasters as interaction between two systems – nature and society or hazard and vulnerability. Disasters are caused by natural hazards which result from the complex interaction between nature and society.

Following from the complexity theory – three strands of theories have emerged in the disaster context based on chaos, dissipative structures and adaptive systems. In the chaos theory, change occurs as a result of interaction of different elements in an open system resulting in unpredictable patterns of change. The term dissipating structures emerges from imbalances in chemical and physical systems – which leads to spontaneous formation of new structures. Self organisation in this case, 'is a property of systems that is triggered by interaction with external factors'. The third strand of complexity theory centres on the notion of complex adaptive systems. The difference between this and the earlier two, is that the adaptive systems have the potential to learn by experience, especially to process information and adapt accordingly. Adaptive systems are not passive but try to turn whatever into their advantage.

It has been argued that paradoxically, much of the work of the complex theories is inspired by the commitment to discover principles of predictability and thus of control at the metal level. Instead, it is suggested that complexity could be treated as 'instead of capturing and controlling complexity, the challenge then becomes to acknowledge multiple realities'.

To enable a movement towards acknowledging the multiple realities, the author suggests that instead of systems a concept of 'social domains' be brought in to do justice to the dynamics of societies and disaster responses. She suggests that the very idea of system supposes that elements of a system relate in a functional and predictable ways. The notion of social domains refer to the central cluster of values, which are recognised as a locus of rules, norms and values implying a degree of social commitment. In social domains of response to disasters, ideas and practices of risk are shared, exchanged and organised due to physical or discursive proximity to the way in which they are referred to by the people. Domain also emphasises the idea of use of languages – but particularly also the contestation, conflict, and negotiation and differential interpretations inherent in this language.

The authors suggests that the three main domains of response to risk and disasters are the domains of science and disaster management; the domain of disaster governance; and the domain of local responses. Each is associated with particular discourses through which meanings are given and therefore are different ways of experiencing and producing nature. These domains are also differentiated and constitute multiple realities. At the same time, there are common aspects in different domains than that apparent at the first site. This property of domains would be the key to developing alliances between common positioning through alliances across domains around policies in disaster responses.

Dekens J. 2007. Local knowledge on disaster preparedness: A framework for data collection and analysis.

Sustainable Mountain Development. **Vol. 52**

Key Themes : Disaster Response and human agency

The article focuses on the research question like- how do we document local knowledge on disaster preparedness? It argues that not much has been done on this front but it needs serious consideration of the researchers.

Disaster risk management programme. **2002-07.**

National Disaster Management Division. Ministry of Home Affairs. Government of India. UNDP India.

Key Themes : Disaster Response and Human Agency

The thematic focus is on awareness generation and education, training and capacity development for mitigation and better preparedness in terms of disaster risk management and recovery at community, district and state levels and strengthening of state and district disaster management information centres for accurate and timely dissemination of warning. The overall goal of the programme is "Sustainable Reduction in Disaster Risk in some of the most hazard-prone district in the selected states of India."

Images of Withdrawal Behaviour in Disaster: Some Basic Misconceptions.

By Quarantelli E.L.

Key Themes : Disaster Response and Human Agency

In 1950s, the research efforts of social scientists have increasingly been directed to the reaction of people and communities in disaster situation. Much of the research has been stimulated by the threat posed for American society by nuclear warfare and the necessity of deriving civilian defence measures. However, disasters are not confined to wartime and research in the area has theoretical as well as practical implications. The present paper assumes this larger framework.

Sociological Enquiry and Disaster Research.

By Kreps G.A.

Key themes : Disaster Response; structures and Human Agency

This article reviews and critiques recent studies of hazards and disasters from a general sociological perspective. Historical attempts to define and interpret disasters in sociological terms are important and such efforts inevitably raise basic questions about social order. It also reviews the kinds of questions that sociologists have been asking about the social order, as evidenced by several recent large scale studies. Paper closes by presenting some comments about interdisciplinary and cross-cultural research on disasters.

Disaster and Governments.

By Davis M. and Seitz S.T.

Key Themes : Disaster Response; Structures and Human Agency

The article examines why disasters of similar types differentially affect countries throughout the world. Despite a plethora of studies in the disaster field, such a theme has hitherto not been systematically pursued. Concepts of government effectiveness, government instability, available resources and social context are incorporated into a structural model that seeks to explain differentials in impacts.

The Impact of Natural Disaster on Third World Agriculture: An Exploratory survey of the neo for some new dimensions in development planning.

By Long F

Key Themes: Disaster Response; Structures and Human Agency

This is essentially an exploration of the available information on the efforts of natural disasters on Third World agriculture. The effects are a powerful partial explanation of the lack of agricultural self-sufficiency in a large number of low income countries. The paper argues for systematic collection of economic data on disasters and its analysis and for the establishment of agricultural planning mechanism in natural disaster prone developing countries to mitigate the adverse effects of such disasters. The paper also sets out the need for international action on a continuing basis in this field.

Disaster and Deritualization: A re-interpretation of findings from early disaster research.

By Thornburg P.A., Knothnerus J.D. and Webb G.R

Paper focuses on how ritual practices are disrupted in disasters and the ways people deal with those situations. Structural ritualization theory is employed to conduct the investigation on deritualization which refers to the breakdown or loss of ritualized activities that occur in daily life.

Cyclone mitigation, resource allocation and post-disaster reconstruction in South India: Lessons from two decades of research.

By Winchester P.

Published in *Disasters*. Vol. 24. No. 1. pp 18-37; 2000

Key Themes : Disaster Response and Human Agency
This paper opens with a history of development and disaster prevention strategies in a cyclone prone area of the east coast of India and traces the evolution in the area of British and Indian governments programme and policy over a century. It presents evidence that suggest that NGOs supported co-operatives are best ways to achieve reconstructions.

Local Level Risk Management

By Perwaiz A., Dey B., Terbucq D., Padmanabhan G., Stephen I., Mohapatra K., Sengupta R., and Chaudhary S.

Government of India. Ministry of Home Affairs; 2001

Key Themes : Disaster Response phases and Human Agency

The report deals with community based disaster preparedness, its components and the preparation of the CBDP plan-process. It also focuses on the linkages with development programme and strengthening a decentralized approach.

'Community based disaster management during the 1997 Red river flood in Canada'

By Buckland J. and Rahman M.

Published in *Disasters*. Vol. 23. No. 2. pp 174-191; 1999

Key Themes: Disaster Response phases and Human Agency

This paper examines the relationship between community preparedness and response to natural disaster and their level and pattern of community development. It investigates the extent to which the level and pattern of development affects a community disaster preparedness and response.

Links between relief, rehabilitation and development in the tsunami response: Sri Lanka case study

By Björn Ternström and Ellen Girard-Barclay; Darini Rajasingham; Yashwant Deshmukh;Susanne B. Pedersen

Published by Tsunami Evaluation Coalition; 2006 Can be downloaded from http://www.tsunami-evaluation.org

Key Themes : Disaster Response phases and Human Agency

Abstract:

The Sri Lanka Case Study identified some of the successes and challenges faced by those in need, and examined the degree to which the initiatives for relief, rehabilitation and development taken by the population were enhanced or hindered by actions taken by outsiders. The study reported little evidence of a systematic planning to address the needs of special needs groups, such as older adults, and people with disabilities, etc.

At Risk : Natural Hazards, People's Vulnerability and Disasters

By Ben Wisner, Piers Blackie, Terry Cannon and Ian Davis

Published by Routledge, London and New York; 2004

Key Themes : Vulnerability and Disasters

Abstract:

This book – a revised version of the book first published in 1994 challenges the widespread acceptance of the 'natural disasters' being natural and instead emphasise on the social character of the disasters. The authors look into what makes people vulnerable unmasking and the mainstream development model which makes people vulnerable. It suggests two analytical models for understanding of vulnerability. One links the 'root causes' to 'unsafe conditions' in a 'progression of vulnerability' – the Pressure and Release model. The other uses the concept of 'access' and 'livelihood' to unravel why some households are more vulnerable than the others; and finally reflects on how can the world be made more safe.

Vulnerability is seen as ' the characterstics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of the natural hazard (an extreme natural event or process). Key variables explaining the impact are class, occupation, caste, ethnicity, gender, disability, health status, age, and immigrations status – both legal and illegal and the social networks of the affected people.

Vulnerable groups also find it difficult to reconstruct their livelihoods which is determined by the entitlements they enjoy – namely the command they have over a particular bundle of goods – information, cultural knowledge, social networks and legal rights, resources such as land and physical resources. This is developed through livelihood access model in the book.

In the analysis of the book, the natural events are only secondary determinants of disasters – and suggest that poor suffer more from hazards than the rich.

The book also argues that phenomenon of disasters need to be placed in the mainstream policy and practice – and show how 'normal' historical processes contribute to the causation of the disaster – they show how 'normal' pressures in global, regional and national systems of economic, social and political power contribute to creating more vulnerability to disasters. The access model shows how material conditions of daily life impacts people's abilities to recover and protect themselves from the disasters.

By applying the PAR and Access model to different empirical situations, the authors draw out lessons for recovery and preventive action. They suggest paying special attention to whether and how 'dynamic pressures' and 'root causes' of disaster vulnerability can be addressed through the 'opportunity' that disasters create for a more safer world. They link human development and Vulnerability reduction emphasising an improvement in governance and livelihood resilience and local capacity through development and disaster response intervention.

The Notion of Disaster Risk : Conceptual Framework for Integrated Management

Study coordinated by Instituto de Estudios Ambientales (IDEA), Manizales – Columbia Aug 2003, Inter-American Development Bank, prepared by Omar Cardona et al.

Key themes : Vulnerability, Social constructions of Risks and integrated frameworks

Research Question : What are the various nuances of risk management and how are they defined by the various disciplines? How would an integrated risk management perspective look like? What are the conceptual frames needed to undertake such integrated approach?

Research Method : A critical review of existing conceptual frames in relation to risks, vulnerability and disasters.

Summary:

The term disaster risk suggest that there is a possibility that a dangerous phenomenon or event will occur and that exposed elements predisposed or susceptible to being affected. The reduction of risk therefore means the reduction of possibility of future disaster.

Risk Management therefore implies different policy or strategy components:
Risk Identification – involves both objective estimations as well as social representations or individual perceptions of risk
Risk Reduction – involves mitigation/ prevention
Disaster Management – involves response and recovery
and
Risk Transference – Insurance and Financial protection – found in developed countries only.

Each of the different policy options imply different disciplinary approaches, values, strategies and involve different social actors. Effectiveness can only be achieved through interdisciplinary and integrated approaches. Therefore Risk Management – has two elements – how they are perceived and represented by the society and how they are measured.

Psychologists, Sociologists and historians generally consider risk as a social phenomenon. This approach can be considered as constructivist. From this perspective, understanding risk involves an understanding of social representations and individual perceptions and interactions between different social actors. On the other hand, Economists, Engineers epidemiologists suggest that risk can be quantified and objectively assessed. This may be described as a realist or an objective perspective.

This antagonism must be transcended and confidence must be placed on both quantitative as well as qualitative methods. There is a need to understand the subjective risk perception as well as scientific need for objective measurement – leading to a holistic theory of risk.

The estimation of future losses or effects in determined material and social contexts allows for design of measures that avoid or accentuate the consequences of future disasters. The development of techniques need to permit a permanent monitoring of territorial and social accumulation of vulnerability or the evolution of the physical trigger processes. These should be flexible enough to adjust to continuous changes in natural, economic and social environment. Further this calls for less rigid planning models that allow incorporation of instability, uncertainty and surprise. In other words we need a preventive vision of disasters.

II) Conceptual Frameworks to understand and interpret risk, and vulnerability

A) Framework used to analyse the different dimensions and types of vulnerability is the Global vulnerability framework developed by Wiches-Chaux 1989

a) Physical dimension : depicts locations in susceptible areas who when exposed to a hazard cannot resist
b) Economic dimension : Poverty increases vulnerability – expressed at indiv level in terms of unemployment, lack of income and gaining access to services. At national level, economic dependency and associated issues.
c) Social dimension : higher the levels of integration of community, easier it is to absorb the consequences of disaster and react more rapidly. Societies are less vulnerable when they are organized as a group.
d) Educational dimension : Lack of knowledge of causal factors and effects of disaster – lack of preparation and understanding of indiv and groups responses to disaster.
e)Political dimension : Expressed in the level of autonomy the community has in the use of resources and decisionmaking. Participation in decisionmaking that affects the community will help reduce the vulnerability.
f)Institutional dimension : relates to difficulty in undertaking risk management. Expresses lack of institutional preparedness or mitigation actions when risk is known to exist. Also institutional vulnerability also denotes to excessive bureaucracy, and lack of flexibility.

g)Cultural dimension : Relates to a way, individuals and groups perceive themselves which leads to particular behaviour.

h)Environmental dimension : Increase in vulnerability when developmental models are destructive of nature and natural resources. It leads to deterioration of ecosystem and its capability to self adjust.

i) Ideological dimension : Relates to the ideas and beliefs about the world, its emergence – expressed in fatalistic attitudes.

The notion of global vulnerability by Wilches – Chaux enables us to visualize vulnerability from different angles and perspective.

B) A Summary of different dominant approaches to Risk, Vulnerability and Disaster

- **Risk as a social construction** – The notion of Risk is based on the individual and collective perceptions, representations and interpretations by social actors. This approach includes the political economy school or those taking a neo-marxist approach - which emphasise social construction of vulnerability and therefore suggests that risk is socially constructed. The Post modern turn in social science by Ulrich Beck, Niklas Luhmann and Anthony Giddens also influenced this approach. For these authors, Risk is linked with societal development and influenced by decision making and communication processes which in turn are influenced by power relations. A theoretical integration is attempted by Kasperson (1988) in his theory of social amplification which attempts to outlay a causal process integrating technical, social, cultural and psychological dimensions of risk.

- **Natural science approach or Realists** : Approaches by Engineers etc that risk can be quantified or objectively assessed. This has led to knowledge of at least one component of risk – the hazard. However newer understandings emphasise that Risk cannot be understood only as possible occurance of natural hazard.

- **Socio-technical approach** : focuses on effects of the event and not on event itself and on resistence capacity of the structures which signifies a change in paradigm of risk. But while more complete definition is provided, the approach remains based on too many physical effects. Here the term "social impact" refers to number of victims dead, injured. Also territorial planning is done as the assumption is that elements are located in hazard exposed zones and are vulnerable – eg Earthquake resistant level zones in India. Thus this approach continues to give hazards an over-riding importance. Use of GIS, has also reinforced this view. Vulnerability is used to explain physical damages – and risk is a potential loss. It does not make real reference to resilience or capacity to recover. It also includes contributions from toxicology, epidemiology, natural and engineering sciences based on probabilistic estimation of risk.

- **Socio-cultural approach** – Initiated through studies of behaviour of the affected population. In a few cases – led to perceptions of individual or collective social units – but not much analysis in how it leads to social gestation of disaster. Some studies have emphasized the capacity of the communities to absorb and recover from the event. It also includes psychometric analysis and unlike socio-technical approaches do not offer common denominator for measuring social and cultural acceptability of risk.

- **Risk as socio-economic and political process :** This is more towards the end of 20th century – where social aspects of vulnerability are over emphasized – sometimes ignoring the environmental and potential physical damage in conceiving and estimating risk. Vulnerability is tended and interpreted as a characterstic and not as a condition or predisposition to damage – due to lack of resilience or capacity to recover.

- **Vulnerability as a factor of risk :** Some authors analyse vulnerability as risk and not as a factor of risk – forgetting that without a hazard there would be no risk. The greatest defect here is the argument that risk is something subjective and no attempt is made to estimate it.

C) Concepts of Risk in these different kinds of theorizations:

All concepts of risk have a common element – that is distinction between reality and possibility. Thus risk can be defined as " the possibility that an undesirable state of reality (adverse effects) will occur as a result of natural events or human activity" (Luhman 1990). Risk is thus a descriptive concept which takes a normative dimension.

The different conceptualizations approach three questions inherent in this understanding of risk in different ways:
- How may we specifiy and measure uncertainty?
- What are undesirable results?

- What is the concept of reality we hold to? (Renn 1992).

Thus risk reduction can the be understood as having two ends of a continuum – namely as a) objectively associated activity in terms of measurable in probabilistic terms damage, resources given according to the greatest risks, and b) as social or cultural construction where interventions are based on social values, priorities and lifestyles.

D) Overcoming limitations of the objective and constructivist paradigm by an integrated risk management paradigm:

- Need to take into account qualitative as well as quantitative methods
- Subjective risk perception and Objective risk measurement.

This means that an integrated approach to risk management would require a series of measures, tools for intervention in hazards and vulnerabilities to reduce or control future possible risks – in other words we require a preventive view of disasters. It also needs to be participatory and involve social, institutional, public and private forces on a broad and an inclusive basis.

Introduction : Mapping vulnerability

By Dorothea Hilhorst and Greg Bankoff

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004

Key Themes : Vulnerability and Disasters

Summary:

The context of vulnerability:

Early formulations in 1970s have characterised the relation between environments and human societies in too – technocratic terms – associated with western norms. However, more and more disasters are being viewed as a result of the human actions – as lewis (1999) says – the 'actualisation of social vulnerability'. Blackie, Cannon et all have argued that while hazards are natural, disasters are social. This needs to be understood in terms of individual, housholds, a community or a society's vulnerability. Further, the characterstics of class, gender and ethnicity determine vulnerability (Cannon 1994). This links risks with people's abilities – social, economic, and cultural abilities to cope with the damages incurred.

Vulnerability rather than poverty is useful concept than poverty in disaster policy making although there are useful overlaps. All the three – disaster, poverty and vulnerability are a part of the framework – through which humans and individuals cope with the risks in their lives.

However, vulnerability is sometimes looked upon as a property and not as a result of social relations. Lewis suggests that vulnerability could be looked upon as a changing social, and economic condition in relation to hazard and is dynamic in nature (lewis 1999). Development processes also create vulnerability. Further, understanding vulnerability means understanding peoples experiences and perceptions of vulnerability – local knowledge. Vulnerability does provide a conceptual link between disasters, development and people.

History of vulnerability

Vulnerability is not just about present but about the history of a place –which has shaped the 'present'. For eg, Susman et al 1983) suggests that 1975 earthquake in Guatemala was more of a 'classquake'. That is the present conditions is the outcome of the past factors that transform the hazard into a disaster. A more holistic appreciation between environment and societies is needed.

Vulnerability and people

People's perception leads them to act in particular ways. Peoples perception's can be categorised in three different domains of knowledge – science, governance and local custom. Further knowledge is related with power, - both in local and global sense.

Dynamics of vulnerability

Vulnerability is not a property of social groups or individuals but is embedded in social relations and processes. Thus we can then understand what makes people vulnerable – just as what processes - at different levels make people resilient . What is then needed is a transdisciplinary approach to understand vulnerability. However class, age mobility etc can be seen as markers of vulnerability. Further, vulnerability also has temporal links – (Holling 2002). People's vulnerability builds up over time – and varies through rapid variations in economic, social and environmental conditions – are sometimes compounded by cyclical or seasonal changes.

Management and governance:

Disaster management has been a subject of hierarchical forms of governance – for eg armed forces delegation etc (Hewitt 1983). However this top down style has been criticised with an advocacy for the participatory forms of management. What ultimately emerges is a plea for adaptive forms of management – which include several stakeholders and are based on negotiated value system – combining different domains of knowledge and action (Warner et al 2002).

Local resistance and social movements:
This book suggests that resistances are a form of coping practice – that is real change is not possible without pressure of local resistances.

Theorizing Vulnerability in a globalized world : A political Ecological Perspective

By Anthony Oliver-Smith

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004 (pg 10-24)

Key themes : Vulnerability and Disasters

Concepts used:

The concept of vulnerability:

By combining environment, society and culture – in different ways, in a hazard-Disaster context vulnerability is a theoretical framework that encompasses the various dimensions of disasters. Vulnerability in fact expresses the multidimensionality of the disasters. Blackie et al 1994 situate the ideologies of the different social and political systems – leading to distribution of resources and creating unsafe conditions for the disasters to unfold. However illuminating these relationships in globalisation contexts is becoming more complex. The author poses questions that are relevant to the formulation of the theoretical framework for causes of disaster namely as : 1) What are the contributions of the cultural construction of nature to the social production of disaster? 2) How cultural, economic and political conditions characterizing vulnerability are inscribed in the environment 3) What is the relation between cultural interpretation and the material world of risk and disaster? 4) How do we theorise this linkage in the context of globalisation?

Constructions of nature and society:

Dominant western constructions construct human and nature relations in oppositional ways – as done in classical greek or roman as well as in medieval times. However, many cultures do not construct a clear dichotomy between nature and culture as western societies do. In West, the enlightenment ideal of human emancipation and self realisation was closely linked with the idea of use and control of nature

Cultural construction of calamity:

For cultural theorists, nature and even a disaster is a social construction – however the author argues that even when one considers nature in this way, its materiality cannot be ignored. The authors suggests that natural hazards do not exist primarily as social constructions, or are a product of social discourse, but that hazards and disasters demonstrate the 'exo-semiotic agency' of nature.

Globalisation, Vulnerability and Disasters

The globalisation processes – a global system resulting from global capitalist expansion impact vulnerability. The global forces have also set in motion ecological flows – that have reduced the diversity of ecosystems. While societies and nature has always co-evolved, this co-evolution is now taking place at the global level – each influencing the other in unpredictable ways challenging our traditional understandings of structure and societies with serious implications for adaptive capacities.

Summary of the paper:
The author suggests that along with the detachment of society and nature – market exchanges came to dominate human relations. Thus with market relations, 'exchange value' rather than any other value were ascribed to nature – which in turn has led to environmental destruction and socially constructed vulnerability. Even in socialist states domination of nature was pursued on the grounds of human reason. Disasters are today linked with environmental damages – and the green movement points to the environmental limits as well as the instances of vulnerability that are created when these limits are transgressed. However new theorisations are beginning to discard the duality of nature/culture and creating a synthetic approach that can address mutuality of nature and culture. Disaster research suggests that while hazard or natural forces are present in the environment, it is the society that actualizes the potential of a hazard. Disasters as well as the material needs evoked in these contexts are socio-historical products. In the context of globalisation, the challenge now is to specify these linkages happening at regional and global scales.

The Historical Geography of Disaster: 'Vulnerability' and 'Local Knowledge' in Western Discourse

By Greg Bankoff

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004; pg 25-36

Key Themes : Vulnerability, local knowledge and disasters

Summary:

Discourse of 'unsafe world'

The modernisation discourse suggests that societies will take a linear path to development – from traditional or backward to modern and politically speaking from authoritarianism to democracy. Thus here non western world became a discursive creation in western imagination which were synonymous or were signifiers of overpopulation, famine, hunger, illiteracy – that is a dangerous zone a – threat to western well being.

Natural disasters and vulnerability

Hewitt has argued that technocratic approach led to hazard being treated as special problem to be appropriated by the discourse of expertise that quarantines disaster in thought and practice. Even today, far from being discredited, world bank, and UN etc continue to treat it as such. However critics of this approach construe disasters as societies exposure to hazards in terms of their vulnerability. They suggest that while hazards are nature, disasters are not. As a concept vulnerability offers a radical critique of the technocratic approach – the conditions inscribed in the societal order and the relative advantage or disadvantage that social groups occupy within it. It is the marginality of some people that makes their life a 'permanent emergency'. Ben Wisner suggests that this marginality is determined by a combination of variables such as class, gender, age, ethnicity and disability (Wisner 1993) that affects peoples entitlements and empowerment or their command over basic necessities or rights. Populations are rendered powerless so that they become even more vulnerable in the future. However the discourse of vulnerability still classifies certain parts of the world as more dangerous than the other – one where disasters happen more frequently and in other much less The cure is also suggested as a transfer of

technology or expertise in terms of meteorological and seismic prediction, preventive and preparedness systems and building of the safety codes.

Coping with disasters:

Within this western discourse of certain parts of the world as unsafe places, there is also a counter discourse, which casts traditional cultures as repositories of knowledge.

The current emphasis on the local knowledge is a belated acknowledgement of the non western people who have developed sophisticated systems to reduce vulnerability of their daily life. The respect now given to the coping practices are a wider attempt to broaden local participation through bottom up planning and participation. What is suggested is that what is required is a proper balance between need for external assistance and capacity of the local people to deal with the situation.

However, the concept of local knowledge is applicable only in specific geographical locale unlike western knowledge which is scientific and universal in its application. However, despite these shortcomings, vulnerability and local knowledge – have been useful concepts in assessing disasters and undoubtedly were a conceptual advance on the previous thinking.

The Lower Lempa River Valley, El Salvador : Risk Reduction and Development Project

By Allan Lavell

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004; (pg 67-82)

Key Themes : Vulnerability, Participation and Risk reduction

Summary :

Research strategy:
This paper is based on the participatory risk and vulnerability reduction project undertaken by local organisations, govt and inter American Development Bank (IADB) in Lower Lempa River area of El Salvador. This area was affected by Hurricane Mitch in October 1998. The exercise finally led to the development of planned intervention strategy agreed by different stakeholders.

Conceptual frames used:

Risk, development and sustainability:

In the project, Disaster risk – was conceptualised as probability of future loss and damage due to adverse physical events. Hazard (probability of physical event occurring) and vulnerability (propensity to suffer loss and recover) were dependent concepts in understanding of risk. Along with disaster risk was considered 'everyday risk'. The everyday risk were the permanent living conditions of the poor populations that was a permanent threat to their physical and mental wellbeing – malnutrition, health, unemployment, social and domestic violence, etc.

Blackie et al model of pressure and release reveal the complex social processes that leads to the creation of risks. And while ultimately the local actors face the problems due to risk, they are not in control of the other processes that lead to the creation of the risks in the first place.

The above conceptual frame led the project to adopt following methodological criteria:

1. Disaster risk must be analysed and dealt with in the light of the everyday risk and lifestyle insecurity experienced by over 70 % of the population.
2. The diagnosis of risk conditions need to take into account local perceptions and variations in groups, populations and organisational representations.
3. Local risk conditions and notions of intervention need to be analysed – taking into account external causal factors and social actors.

4. Strategic intervention need to work on both – everyday as well as disaster risks.
5. The project would actively involve local populations in strategy formulation and other processes.
6. Project personnel will act in impartial ways while dealing with competing interpretations.

The project then through interviews with local organisations, NGOs, govt and local population – went from the preliminary diagnosis to complete the integral diagnosis through participatory discussions and workshop procedures. When the final draft diagnostic document was prepared – the findings were shared through consultation meetings with local representatives

The main ideas which came out of entire processes of consultations for the intervention strategy were:

1)Disasters and everyday risk: In the context where large proportions of people were in abject poverty, local groups supported the idea of linking disaster and everyday risk.

2)Diverse components of vulnerability: Through workshops local population was sensitized and therefore appreciated vuluerability risk reduction as related to not only technological but also other interventions – such as land use planning, adaptation, agricultural diversification, ecosystem management etc.

3)Organisational development and harmony were considered a key to social capital

4) Understanding local environment and reducing risk were considered as integral to risk reduction.

Conclusions of the project:

This paper illustrates the importance of concept and method in order to achieve the disaster risk reduction. In particular, every day and disaster risk reduction were connected through development approach to solving of the problems. Further, different levels of vulnerability were identified such as initial well being, strength and resilience, livelihood resilience, self protection, societal protection and social capital and project interventions were designed to address these different levels of vulnerability.

Assessment of Capability and Vulnerability

By Ben Wisner

In 'Mapping vulnerability: Disasters, Development and People' edited by Greg Bankoff, Georg Frerks and Dorothea Hilhorst, Earthscan publication, UK & USA 2004; pg 183-193

Key Themes : Social Vulnerability, Capability and disaster

Summary:

Vulnerability implies various dimensions such as :

Structural engineering vulnerability
Lifeline infrastructure vulnerability
Communication system vulnerability
Macro-economic vulnerability
Regional economic vulnerability
Commercial Vulnerability – including insurance exposure
Social Vulnerability

What the above have in common is the 'potential for harm'. Use of Maps for vulnerability assessment can be any of the above in respect to a particular type of hazard. And risk is typically expressed as Risk= Hazard*Vulnerability.

Social vulnerability is one of the domains for investigation – however 'social' is a very large domain. The author revisits some of the approaches to social vulnerability in this paper – discussing their potential strengths and weaknesses. Finally he calls for a more situated approach based on local knowledge and capacity building which could help us move beyond social vulnerability approach.

Demographic approach to vulnerability:

This approaches are inspired by an engineering approach 'the potential for damage or loss (Alexander 2000). In this approach human beings are one of the 'elements at risk' to varying degree due to certain characterstics for a potential for a loss – thus structural vulnerability of the buildings, health care systems and people.

The taxonomic approach to vulnerability

The second approach focuses on vulnerability of 'social groups' and the causes of their vulnerability. This approach is based on empirical observation about different groups suffering from differential losses and the differential nature of their recovery   This approach breaks vulnerability into different elements – social, economic, environmental, informational vulnerability and on empirically developed taxonomies. – such as vulnerability of women, children, differently abled, minorities etc. This approach is an advance in the conventional approach which used term vulnerable in an undifferentiated way. This approach has a practical application – in the sense it is useful for the busy administrators and planners for planning as well as responding in disasters.

Cannon (2000) identifies four components of vulnerability:
-initial well being
-livelihood resilience
-Self protection
-Societal protection
-Social capital (social cohesion, conflicting and cooperative groups)

The situational approach

The third approach suggests that we go beyond the taxonomies – although they yield practical benefit; towards a more situational approach – the key question addressed here would be not what kind of group, but the nature of their daily life and their situation. This would be in line with analysis of household economy (Sanderson 2000) or the access model by Blackie et al 1994 or Wisner et al 2003). Here disasters are not seen as exceptional scenarios but an extension of daily life (Wisner 1993; Cannon 2000).

The Situational approach recognises three kinds of contingencies – social vulnerability is not a permanent property of persons or groups; second deals with the constantly changing daily, seasonal and yearly circumstances of people's situation in terms of their access to resources and power; and third contingency arising due to complex overlappings of identities and marginality. Situational analysis separates humans from all their complexities and is a more sensitive tool of analysis.

Towards a contextual and pro-active approach:

This approach suggests that while taxonomies are generated by outsiders, it is in the subjective lived experience in a particular locate – that their meanings are generated – and thus the need to identify not only vulnerability but also capabilities existing in the local context.

Strengths and weaknesses of the four approaches

The first three approaches are structuralist – this kind of disaster discourse has much in common with other forms of development discourse – in the sense that the discourse speaks for the other – the marginalised groups. Despite this difficulty, Wisner suggests that this kind of discourse – provides a space for an alternative subaltern stories and voices. However he suggests that it is the fourth approach to social vulnerability – based on self knowledge and empowerment – that is an expression to break out. What is thus needed is how can the local knowledge be reclaimed by the local people for their empowerment. The author suggests that a richer approach would be to see everyone with some capabilities for self protection and collective action.

Self Assessment of Coping Capacity : Participatory, Proactive and Qualitative engagement of communities in their own risk management

By Ben Wisner

In Measuring Vulnerability to Natural Hazards : Towards disaster resilient societies, Edited by Jorn Birkmann, United Nations university press, Tokyo 2006 (pg316-327)

Key Themes : Vulnerability, Participation and Disasters

Summary:

This paper draws from the participatory approaches developed by Robert Chambers and Paulo Friere which encouraged local communities to reflect on their own realities, analyse them and develop an action plan to change their situations. Here the participatory approaches and techniques have been applied to communities in risk prone areas and/or have been impacted by some disaster. Termed as Community based disaster management (CBDM), this approach leads to local self assessment, planning and action based on people's knowledge about their own environment. CBDM also emphasises an understanding of vulnerability of people to hazards; and their capacity to cope with them. Hazard mapping and planning are integrated in this approach.

The author suggests that the social vulnerability perspective which drew on taxonomic approach of listing vulnerable social groups have a utilitarian value – however before disasters, whilst working proactively with the govt and other stakeholders to assess vulnerability in advance, the taxonomic approach would be inadequate. Instead he discusses the situational and proactive approach - whose goal is enable people through reflection and action improve their self protection and demand or fight for social protection.

Methodology used in the approach:

This approach aims to build trust, common purpose, and motivation among the people through simple participatory tools such as historical time line, problem tree analysis, wealth ranking etc. The key questions asked are around threats as well as capacities and opportunities. Through the self assessment along these lines, the community then develops a community based disaster management plan. Given the contextual approach implicit in this methodology, the author calls this approach as a special case of what is formally known as 'adaptive planning' .

Following the methodology from Chambers and Freire, this approach suggests that there is no teacher or a expert – the facilitator seeks to understand the reality on the ground and together with the participants finds a way forward. Local knowledge is reflected upon – outside knowledge brought into – to be added and not as a replacement of the local understanding.

The author discusses examples from Africa, where several of these methods have been used for self assessment of vulnerability.

The author finally suggests that while this approach has many benefits, it may have to engage with its political limitations. The 'Limit situations' may be reached where participants agree that they cannot take further risk reduction without a change in policy or practices over which they have no control. While in a democratic, open and accountable systems of governance – this may be turned into a strength to influence policy making. However in authoritarian or non democratic systems, organisers and facilitators may be in danger and would need protection.

This approach is now popularised and used by Pro Vention Consortium which has initiated the process of collection, dissemination of the methods for participatory capacity and vulnerability assessment through Pro Vention tool kit.

Measuring Vulnerability to Promote disaster-resilient societies : Conceptual Frameworks and definitions

By Jorn Birkmann

In Measuring Vulnerability to Natural Hazards : Towards disaster resilient societies, Edited by Jorn Birkmann, United Nations university press, Tokyo 2006

Key Themes : Vulnerability, Disasters and sustainable development

Summary :

This paper discusses different conceptual frameworks used to define vulnerability. It discusses six main schools of thoughts :
-the school of the double structure of vulnerability (Bohle 2001)
-conceptual frameworks of the disaster risk community (Davidson, 1997; Bollin et al 2003)
-the school of political economy which addresses the root causes, dynamic pressures and unsafe conditions that determine vulnerability (Wisner et al 2004)
-the holistic approach to risk and vulnerability assessment (Cardona 1999 and 2001; Cardona and Barbat 2000; Carreno et al 2004, 2005)
-The BBC (Bogardi, Birkmann and Cardona) framework which places vulnerability within a feedback loop system and links it to sustainable development discourse (based on Birkmann and Bogardi, 2004 and Cardona 1999 and 2001).

The author suggests that it is the sixth school of BBC which links the concept of disaster vulnerability with the sustainable development frameworks. It does this linking by stressing on the need to focus on exposed or susceptible elements and their coping capacities at the same time. It also includes an understanding of vulnerability which goes beyond the estimation of damage or loss and suggests vulnerability as a process – thus this means intervening in disaster contexts as well as addressing the coping capacity with regard to social, economic and environmental spheres – which are the three dimensions of sustainable development.

The authors also raise following questions that still need further reflections in relation to vulnerability:

- Is coping capacity a part of vulnerability or should it be viewed as a different feature?
- Does vulnerability encompass exposure or should exposure be seen as a characterstic of the hazard or as a separate parameter?
- Which part and characterstics of vulnerability are hazard dependent and which are hazard independent?
- What dimensions and themes should vulnerability assessment cover?
- How can root causes of vulnerability be defined and measured?
- How far can one measure the interlinkages of the root causes at national and global levels and the major driving forces and root cause at local level that determine local vulnerability?
- Is resilience the opposite of vulnerability or a concept that covers coping and adaptation capacity as these relate to vulnerability?
- Should vulnerability focus primarily on human vulnerability alone or is it more appropriate to view vulnerability within a coupled human environment system?
- How far is environment degradation a hazard or a revealed vulnerability of the environment?

On the links between vulnerability and sustainable development, author suggests that as the concept of sustainable development suggests, both inter as well as intragenerational justice will have to be key principle for risk and vulnerability reduction. The author suggests that from a sustainable development perspective, an integrated perspective of the environmental sphere is thus more appropriate for holistic view of vulnerability to hazards of natural origin.

Social Vulnerability and the 2002 flood : Country Report Germany (Mulde River)

By Steinfuhrer A. 2007

Downloaded from www.floodsite.net

Key Themes: Vulnerability and Disasters

This report presents and summarises the findings of a questionnaire survey carried out in five research locations of the Mulde (River). It talks about social vulnerability as social inequality. Also focuses on methodology of research, issues of risk perception, preparedness and perceived responsibility of public.

The study of natural disaster 1977-1997: Some reflections on a changing field of knowledge

By Alexander D

Key Themes : Vulnerability and Disasters

This article is a good review of the works done on disaster and how there have been shifts in the field of study. Paper begins with review of major natural disasters and then a review of what has occurred in this period and its impacts.

Disaster risk management and vulnerability reduction: Protecting the poor.

By Yodmani S.

Paper presented at Social Protection workshop Manila; 2001.

Key Themes : Vulnerability and Disasters
The article deals with the vulnerability of the poor during the disaster situation. It very well brings out the relationship between vulnerability and poverty. It also deals with disaster risk management and community based disaster management approach.

Disaster Research: Exploring the Sociological Approach to Disaster in Bangladesh.

By Nasreen M.

In Bangladesh e-Journal of Sociology. Vol 1. No.2; 2004

Key themes : Vulnerability and Disasters

In this paper an attempt has been made to explore what research has been done to address disasters in Bangladesh and to what extent disasters have been examined from the social perspective. The paper, in the process also tries to define disasters and identify approaches to disaster research. The paper looks at the major works completed on disaster from various approaches. It has been argued that application of sociological approach to disaster research is very limited.

Societal Response to Hazard and major Hazard events: Comparing natural and technological hazards.

By Kasperson R.E. and Pijawaka K.D. 1985.

Published in Public Administration Review. Vol. 45. pp 7-18; 1985

Key Themes : Vulnerability and Disasters

This article enquires into the range of problems encountered by society as it attempts to avoid and respond to the hazardous events rooted in technology. Two tasks are recognized: first, to characterize the hazard management process and to highlight the particularly difficult problems encountered and second, to assess how the major hazardous events arising from technology affect people, their communities and their institutions.

Comparative behavioural response to future earthquakes: The case of Turkey and USA.

By Kasapoglu A. and Ecevit M.

Published in Social Behaviour and Personality. Vol. 32. No. 4. pp 373-382; 2004

Key Themes : Vulnerability and Disasters

The primary aim of this study is to demonstrate the impact of knowledge in terms of risk information on what people have thought and done to be prepared for the next probable earthquakes in both USA and Turkey. The study revealed that for risk, knowledge alone is not sufficient and societal factors along with the urgent need for cultural change in accordance with sustainable development should be taken into consideration.

Chains of damages and failures in a metropolitan environment: Some observations on the Kobe earthquake in 1995.

By Menoni S.

Published in Journal of Hazardous Materials. Vol. 86. pp 101-119; 2001

Key Themes : Vulnerability and Disasters

The paper highlights that how physical organizational and systemic vulnerabilities are intimately connected. The analysis suggests that not only parameters related to physical weakness or strength of the built environment should be considered but organizational, social and systemic factors are equally crucial to understand the magnified dimensions of disasters at increasing levels of exposed systems vulnerability

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Disasters, the media and social structures: A typology of credibility hierarchy persistence based on newspaper coverage of the love canal and six other disasters.

Ploughman P.

Published in Disaster. Vol. 21. No. 2. pp 118-137; 1997

Key Themes : Disasters and Media
The starting point of this paper is the assumption that credibility and the right to be heard are differentially distributed in any social system and therefore a 'hierarchy of credibility' exists. According to the hierarchy of credibility argument, distinct patterns in the differential distribution of social power and prestige are reflected in news selection and news-making power. Credibility is both- the right to be heard and the perceived importance of the communicator's view. There are super-ordinate (high) and sub-ordinate (low) levels of credibility.

Information and communication technology in disaster management.

By Davis I., De Costa K.P., Alam K., Ariyabandu M.M., Bhatt M.R., Schneider R. and Balsari S. (ed.)

Published by Southasia disasters.net 2007

Key Themes : Disaster and Media

The paper deals with questions like- how information and communication technology reduces disaster risk, information and communication technology (ICT) in disaster risk identification, ICT in disaster risk communication, ICT tools for disaster risk reduction, Institutional arrangements for disaster management in selected south asian countries, how different stakeholders contribute to disaster risk management, early warning strengthening project for the countries in the Indian Ocean region.

Disasters and the Information Technology Revolution'.

By Stephenson R. and Anderson P.S.

Published in Disasters. Vol. 2. No. 4. pp 305-334; 1997

Key Themes: Disaster and Media

This paper examines the evolution and possible medium term future of information technology in disaster management. There are presently major changes under way in emergency related global information access and networking the implication of which have yet to be played out. The last part of the paper highlights set of key technologies which may shape disaster planning.

Effect of family role on response to disaster

By Solomon S.D., Bravo M., Rubio-Stipec M. and Canino G.

Published in Journal of Traumatic Stress'. Vol.6 No. 2 pp 255-269.; 1993

Key Themes : Disasters and Mental Health

This study hypothesized that family role (marital and parental status) would moderate the effect of disaster exposure on the mental health of victims. Perceived emotional support was found to be an important moderator of disaster's effect on psychiatric distress, generally overriding the effect of family role. This study suggests that both single and married parents constitute important high risk victim group. The findings also suggest that those perceiving they lack adequate emotional support, regardless of family role, may be in special need of service

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Research on psychiatric outcomes and interventions subsequent to disasters: A review of the literature.

By Katz C.L., Pellegrino L., Pandya A., Ng A., and De Lisi L.E.

In Psychiatric Research. Vol. 110. pp 201-217; 2002

Key Themes : Disaster and Mental Health

This review was undertaken to identify whether there exists a scientific basis for the practice of psychiatry in the aftermath of disasters. Most of the extensive literature over the past 30 years suggest that disasters have psychopathological consequences as well as medical and social ones.

Impacts of an environmental disaster on psychosocial health and well being in Karakalpakstan.

By Crighton E.J., Elliot S.J., Meer J., Small I., and Upshur R.

Published in Social Science and Medicine. Vol.56. pp 551-567 ; 2003

Key Themes : Disasters and Mental Health

Paper highlights that environmental exposures may impact not only the physiological but also the psychosocial health of individuals. Paper also talk about the psychosocial impact research before focusing on Karakalpakstan.

The psychosocial impact of Hurricane Katrina: Contextual differences in psychological symptoms, social support, and discrimination.

By Weems, Carl F.; Watts, Sarah E.; Marsee, Monica A.;

Behaviour Research and Therapy, Vol 45(10), Oct 2007. pp. 2295-2306.

Key Themes : Disaster and Mental Health

Abstract
This study tested a contextual model of disaster reaction by examining regional differences in the psychosocial impact of Hurricane Katrina. A total of 386 individuals participated in this study. All were recruited in the primary areas affected by Hurricane Katrina and included residents of metropolitan New Orleans (Orleans Parish, Louisiana), Greater New Orleans (i.e., Metairie, Kenner, Gretna), and the Mississippi Gulf Coast (i.e., cities along the coast from Waveland to Ocean Springs, Mississippi). Participants were assessed for posttraumatic stress disorder (PTSD) symptoms, other psychological symptoms, perceptions of discrimination, perceptions of social support, evacuation distance, and the extent to which they experienced hurricane-related

stressful events. Results were consistent with previous research on the impact of disasters on mental health symptoms. Findings extended research on individual differences in the response to trauma and indicated that regional context predicted unique variance in the experience of discrimination, social support, and emotional symptoms consistent with the theoretical model presented.

The psychosocial consequences for children of mass violence, terrorism and disasters.

By Williams, Richard

Key Themes : Disaster, Mental Health and Age

Abstract :

Children and families are now in the front line of war, conflict and terrorism as a consequence of the paradigm shift in the nature of warfare and the growth of terror as a weapon. They are as vulnerable as are adults to the traumatizing effects of violence and mass violence. Furthermore, employing children as soldiers is not new, but it is continuing and young people are also perpetrators of other forms of violence. This paper summarizes a selection of the literature showing the direct and indirect psychosocial impacts on minors of their exposure to single incident (event) and recurrent or repetitive (process) violence. Additionally, children's psychosocial and physical development may be affected by their engagement with violence as victims or perpetrators. Several studies point to positive learning from certain experiences in particular communities while many others show the potential for lasting negative effects that may result in children being more vulnerable as adults. The spectrum of response is very wide. This paper focuses on resilience but also provides access to several frameworks for planning, delivering and assuring the quality of community and family-orientated and culture-sensitive responses to people's psychosocia*l* needs in the aftermath of disasters of all kinds including those in which children and young people have been involved in mass violence.

Psychosocial support in disaster-affected communities.

By Rao, Kiran

Key Themes : Disaster, Mental Health and vulnerable groups

Abstract :

The paper outlines psychosocial interventions in providing care and support to disaster-affected communities. Any impact of disaster can be looked at in two ways: firstly by ascertaining the characteristics of the event itself, and secondly, how that event is appraised by those affected. Depending on different phases of the impact of the disaster, individuals will respond in different styles. Psychosocial interventions must be tailored to address the needs of the target population, with special attention paid to vulnerable groups such as children, women and the elderly. These should also be modulated according to the phase of recovery following the event occurrence because each phase will highlight different needs. The four phases of intervention, although determined separately, may show an overlap. In the initial phases, the emphasis is on social intervention that can be delivered by community-level workers. In the later phases, the psychological issues that emerge necessitate the services of trained professionals. Initial social care will need to give way to psychological care, and on occasion both will need to be combined for a considerable period. Since psychosocial care is a long-term, continuous process, disaster management and preparedness programmes must invest in training for capacity building by training community workers and primary care health professionals.

The Aftermath of Disaster: Children in Crisis.

By Gaffney, Donna A.

Key themes : Disaster, Mental health and Age

Abstract:

This article uses examples from the terrorist attacks on the World Trade Center and the hurricane disasters of Katrina and Rita to illustrate the impact of crisis in the lives of children and adolescents. The author reviews children's responses to loss and crisis. Therapeutic approaches that facilitate integration of crisis and loss are provided, including illustrations of self-care, comfort strategies, and developmental, traditional, and nontraditional methods.

Early port-traumatic stress disorder in relation to acute stress reaction: An ICD-10 study among help seekers following an earthquake.

By Soldatos, Constantin R.; Paparrigopoulos, Thomas J.; Pappa, Dimitra A.

Key Themes : Disasters and Mental Health

Abstract

Disaster research related to earthquakes has almost exclusively dealt with their long-term psychosocial impact; besides, diagnoses were previously based only on DSM criteria. Therefore, it is pertinent to assess stress-related reactions of earthquake victims during the early post-disaster period through the application of ICD-10 criteria. For the first 3 weeks following an earthquake, 102 help-seekers were assessed based on a checklist of sociodemographic variables and a semi-structured interview for the detection of acute stress reaction (ASR) and posttraumatic stress disorder (PTSD) according to ICD-10. Forty-four subjects (43%) fulfilled the ICD-10 criteria for PTSD; all but one of them had suffered ASR. Moreover, among a series of potential predictors for PTSD, ASR was found to be the only significant one; this indicates a definite association between ASR and early development of PTSD. Logistic regression to predict group membership (PTSD/no PTSD) based on specific ASR symptoms showed that accelerated heart rate and feelings of derealization were the only significant predictors for early PTSD. Individuals who fulfill the ICD-10 diagnostic criteria for ASR following an earthquake are at high risk for subsequent occurrence of early PTSD. Increased heart rate and feelings of derealization within the first 48 h after the traumatic event appear to be the principal factors associated with the development of early PTSD. In addition to their potential value for timely prevention and treatment, these findings raise important nosological issues pertaining to the current diagnostic classification of stress-related disorders (ICD-10 versus DSM-IV).

Mental health, psychosocial support and the tsunami.

By Bhugra, Dinesh; Van Ommeren, Mark;

Key Themes : Disasters, Mental Health and Culture

Summary

Disasters can have major impact on social and psychological functioning when individuals are exposed to these either indirectly or directly. The responses and coping strategies used by individuals are strongly influenced by cultural factors as well as social support and other factors. In this paper the challenges in planning and delivery of mental health services are described and suggestions put forward for preparedness of future disasters. In cultures which are kinship-based, the help may be available within kinship, and statutory services may rely on such systems.

Impact of the tsunami on psychosocial health and well-being.

By Carballo, Manuel; Heal, Bryan; Horbaty, Gabriela;

Key Themes : Disasters and Mental Health

Abstract: Natural and man-made disasters affect everyone in their path. Some people are nevertheless more vulnerable than others and suffer in different ways and to different extents. The tsunami highlighted a number of pre-existing factors that made some people especially vulnerable and it also brought out the ways in which other people became vulnerable as a result of disaster. Major social and demographic shifts occurred, and the social fabric of communities was severely eroded. Gender, age, extent of personal loss, personal experience in terms of how direct or indirect exposure emerged as key factors together with loss of place, problems of temporary and permanent housing, poor income generation and uncertainty about if and when it would be possible to return to original home sites and communities. Host communities were also affected, albeit indirectly. How and to what extent people were psychologically 'damaged' in, and by, the tsunami nevertheless remains poorly defined because of the paucity of real-time monitoring and the fact that in some countries there was little agreement on the nature and classification of psychosocial problems and morbidity.

The changing impact of a severe disaster on the mental health and substance misuse of adolescents: Follow-up of a controlled study.

By Reijneveld, Sijmen A.; Crone, Mathilde R.; Schuller, Annemarie A.;

Key Themes : Disasters and Mental Health and Age

Abstract :

Disasters are believed to have large effects on the mental health of adolescents but the lack of prospective pre- and post-disaster data on affected and control populations have limited our knowledge on the validity of these claims. We examined the medium-term, 12 months' effects of a severe disaster on the mental health of adolescents, and compared them to effects after 5 months. Method: A cafe fire in The Netherlands injured 250 adolescents and killed 14. We obtained data 15 months before and 12 months after the disaster about behavioural and emotional problems (using the Youth Self-Report) and substance misuse, in 124 students of an affected school of whom 31 were present at the fire (response 77.5%) and 830 other students (56.4%); mean age at baseline, 13.8 years. Results: We found differences between students from the affected school and others for excessive use of alcohol (odds ratio 3.42, 95% confidence interval 2.00-5.85, $p < 0.0001$), but not for behavioural and emotional problems and use of other substances. Effects had decreased compared to those after 5 months. Conclusions: In the long run, the effects of disaster decrease regarding self-reported behavioural and emotional problems, but they remain regarding alcohol misuse among those present at the disaster, and their peers.

The Latin American and Caribbean experience.

By Almeida, José Miguel Caldas de; Rodriguez, Jorge;

Key Themes : Disasters and Mental Health

Natural disasters in Latin America and the Caribbean are not only occurring with increasing frequency, but also with greater destructive potential, making this a significant problem in terms of its social, economic, and health impact. After the major disasters of 1985 in Mexico and Colombia, the governments of the Americas met in Costa Rica in 1986 and laid the foundations for a common policy to make health care more efficient and more compatible with the needs of the population. Since then, great progress has clearly been made. In recent years, responses have begun also to pay attention to the psychosocial component that is always present in these human tragedies. In addition, the approach to emergency management has evolved toward a new perspective that goes beyond the response to damages to focus on risk management, seeking to eliminate or reduce the probability that damages will occur. This chapter examines psychosocial consequences of disasters and emergencies in Latin America, as well as elaborates on lessons learned regarding mental health protection from such disasters.

Disasters and Psychosocial Rehabilitation: The nature, frequency, and effects of disasters.

By Gittelman, Martin;

Key Themes : Disasters and Mental Health

Abstract:

A disaster is defined as the impact of a natural or technological catastrophe on a specific population, and its consequences are the product of that interaction (Lima & Gittelman, 1990). Disasters happen regularly, exact an enormous toll in lives, and have a profound psychosocial impact on millions each year. Natural disasters such as floods, drought, earthquakes, and storms, in their aggregate, now occur with greater frequency than civil strife (Hagman, 1984). Floods account for more than a third of all natural disasters, but earthquakes cause the most deaths and have the greatest economic impact. Between 1900 and 1986, one disaster occurred somewhere in the world approximately every two weeks--a total of 2,392 over that period. The U.S. Agency for International Development (USAID) (1986) has estimated that since the beginning of the century, more than half a million persons have died in disasters each year

Trauma and psychosocial aftermath among high- and low-exposure adults three months post the 921 Chi-Chi earthquake in Taiwan.

By Chen, Sue-Huei; Hung, Fu-Chien; Lin, Yaw-Sheng;

Key Themes: Disaster, Mental Health and Age

Abstract:

This study examined the peri- and post-traumatic psychological responses and changes of physical and psychological health, outlook on life, and interpersonal relationships 3 mo after the devastating September 21, 1999 Chi-Chi Earthquake among 2 groups of middle-aged adults in Taiwan. 197 adults from high-impact areas (mean age 46 yrs), and 117 adults (mean age 37 yrs) from Taipei, a low-impact area, were evaluated. Self-report measures included demographic and earthquake exposure information, the Peritraumatic Psychological Reaction Index (PPRI), the Posttraumatic Stress Reaction Index (PTSRI), and the Psychosocial Change Questionnaire (PCQ). Results show that: 1) high-exposure adults manifested significantly more immediate and persistent posttraumatic psychological responses, and endorsed more negative reports concerning physical/psychological health and intimate/general interpersonal relationships; and 2) while previous trauma studies often reported more

negative and pathology-toned behavioral manifestations, this study found both positive and negative changes among high-exposure adults after the disaster.

Demographic and psychosocial features and their effects on the survivors of the 1999 earthquake in Turkey.

By Ecevit, Mehmet; Kasapoglu, Aytül

Key Themes : Disasters, Mental health and Education

Abstract:

A survey was conducted of 500 male and female survivors (aged 19-80 yrs) of the 1999 earthquake in Turkey to investigate their levels of alienation and forms of preparedness for future disasters. It was found that the level of alienation in general is not very significant and that level of education is the most important influential independent variable. The only alienation component found to have a negative impact on the responsible behavior related to preparedness for earthquakes was the social isolation variable. As level of education increases and social isolation decreases, responsible behavior increases. The existence of little such research in developing societies like Turkey increases the importance of this work and it is expected that it will have a positive impact on similar future studies.

Psychological consequences of the 1998 landslide in Sarno, Italy: A community study.

By Catapano, F.; Malafronte, R.; Lepre, F.

Key Themes : Disasters and Mental Health

Abstract:

Presents results from a community study assessing the prevalence of post-traumatic stress disorder (PTSD) and the psychosocial consequences of the landslide which occurred in Sarno, Southern Italy, in May 1998. A random sample of 272 adults (aged 18-65 yrs) was recruited from the population living in the highest risk area of Sarno, and a control group was recruited in a small town situated near the disaster area, but not affected by the event. All subjects (Ss) were assessed 1 yr after the disaster by standardized instruments. Of Ss recruited in Sarno, 27.6% met DSM-IV criteria for PTSD; 59% subjects recruited in Sarno and 35% of the control group were identified as "probable cases" by the General Health Questionnaire (GHQ-30). Ss recruited in Sarno had significantly higher scores on the 4 GHQ-30 subscales identified by factor analysis. These data emphasize the negative impact of a natural catastrophic event on mental health, and the need for preventive interventions.

Natural disaster and depression: A prospective investigation of reactions to the 1993 Midwest floods.

By Ginexi, Elizabeth M.; Weihs, Karen; Simmens, Samuel J.

Key Themes: Disasters and Mental Health

Abstract:

A statewide sample of 1735 Iowa residents, approximately half of whom were victims of the 1993 Midwest Floods, participated in interviews 1 year prior to, and 30 to 90 days after, the disaster. Employing a rigorous methodology including both control-group comparisons and predisaster assessments, we performed a systematic evaluation of the disaster's impact. Overall, the disaster led to true but small rises in depressive symptoms and diagnoses 60–90 days postflood. The disaster–psychopathology effect was not moderated by predisaster depressive symptoms or diagnostically defined depression; rather, predisaster symptoms and diagnoses uniquely contributed to increases in postdisaster distress. However, increases in symptoms as a function of flood impact were slightly greater among respondents with the lowest incomes and among residents living in small rural communities, as opposed to on farms or in cities. Implications for individual- and community-level disaster response are discussed.

Socio-structural differentials in the mental health impact of the 1994 Northridge earthquake. (California).

By D'Souza, Melvin J. J.

Key Themes : Disasters, Mental health and Vulnerability

Abstract:

In the field of disaster research, the mental health consequences of disasters is a matter of controversy, with claims ranging from long-term psychological distress to positive effects on mental health. Using a model of psychosocial stress, this study analyzes post-disaster psychological distress as a function of social location, disaster stressors, and other life events. It is hypothesized that persons of disadvantaged social status would have higher levels of distress due to differential exposure to stressors and differential vulnerability to stressors. Multi-staged regression analysis indicates that in the 1994 Northridge Earthquake in Southern California, persons of disadvantaged social status (such as minorities and persons of low socioeconomic status) were in general less exposed than others to earthquake-related stressors. Five of the seven earthquake stressors (MMI, residential damage, injury to self, injury to household members, and neighborhood damage) were found to have a dose-response effect on psychological distress. Post-disaster psychological distress was higher for Hispanics, non-Black ethnic minorities, widowed persons, and persons with low family income. In addition, Hispanics, divorced/separated persons, and persons with low family income were more vulnerable than others to two or more earthquake stressors. Finally, as measured in this study, other life events were found to be stronger predictors than earthquake stressors of distress. By analyzing the relationship between disasters and psychological distress in a socio-structural context, this study highlights the importance of considering both differential exposure and differential vulnerability as complementary explanations of post-disaster psychological distress

Environmental hazards and home loss: The social construction of becoming homeless.

By Wiesenfeld, Esther; Panza, Rebeca;

Key Themes : Disasters, Mental Health and homelessness

Abstract :

Examined the psychological and social aspects of becoming homeless through in-depth interviews with 27 Venezuelans (aged 15-55 yrs) who lost their homes due to a landslide. The main topics brought up by the interviewees included: (1) the meaning of their homes; (2) the impact of having lost them; (3) the impact on their sense of family; (4) the meaning of having become homeless and remaining indefinitely as such; and (5) attribution of responsibilities for the disaster and for solutions to their homelessness. An analysis of some of the psychosocial processes related to these topics is presented, as well as some ideas derived from the interpretation of the information gathered regarding risk prevention and the conception of homelessness.

Impact of the 1997 flood on cognitive performance in the elderly.

By Ferraro, F. Richard; Morton, M.; Knutson, S.

Clinical Gerontologist, Vol 20(2), 1999. pp. 79-82.

Key Themes : Disasters, Mental Health and Age

Abstract:

The present study was partly exploratory. The opportunity arose to examine the impact of the Spring 1997 flood on older adults who had been providing similar psychometric and experimental data up to 5 yrs before the flood event. A total of 68 elderly adults (mean age 71 yrs) participated. Ss took psychometric tests and provided demographic information before the flood and within 12-18 mo following the flood, Ss were called back to the laboratory to take the same battery of tests. The authors examined the same demographic, psychometric, and experimental (i.e., cognitive) performance on only 57 of the 68 Ss who provided both pre-flood and post-flood data. Results indicated a main effect of gender for medication use, with females using more medications after the flood than males. Also, females spent more days away from home following the flood than did males

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Recovery from post-earthquake psychological morbidity: Who suffers and who recovers?

By Lewin, Terry J.; Carr, Vaughan J.; Webster, Rosemary A.

Australian and New Zealand Journal of Psychiatry, Vol 32(1), Feb 1998. pp. 15-20.

Key Themes: Disasters and Mental Health

Abstract

This study sought to identify the psychosocial characteristics of high earthquake exposure that were associated with the development of post-disaster morbidity and with recovery. Data reported are from 515 participants (mean age 43.4 yrs at the time of the earthquake) in a longitudinal study of the effects of the 1989 Newcastle (Australia) earthquake. Ss were allocated to 3 subgroups (low morbidity; recovered; and persistent morbidity) on the basis of their Impact of Event Scale (M. Horowitz et al, 1979) scores across the 4 phases of the study. Differences between these subgroups were examined on a broad range of variables. Results show several background, dispositional, coping style and exposure-related factors characterized those who developed psychological morbidity, only a small subset of which differentiated between those who recovered and those with persistent morbidity. It is concluded that post-earthquake morbidity persists longer in those who are older, have a history of emotional problems, have higher neuroticism, use more neurotic defenses, and report higher levels of post-disaster life events

A synthesis of the findings from the Quake Impact Study: A two-year investigation of the psychosocial sequelae of the 1989 Newcastle earthquake.

By Carr, V. J.; Lewin, T. J.; Webster, R. A.

Social Psychiatry and Psychiatric Epidemiology, Vol 32(3), Apr 1997. pp. 123-136.

Key Themes: Disasters and Mental Health

Abstract:

This paper summarises major findings from the Quake Impact Study (QIS), a 4-phase longitudinal project that was conducted following the 1989 Newcastle (Australia) earthquake. 3,484 Ss participated in at least 1 component of the QIS, comprising a stratified sample of 3,007 drawn from community electoral rolls and 464 from specially targeted supplementary samples (the injured, the displaced, the owners of damaged businesses, and the helpers). Ss' initial earthquake experiences were rated in terms of weighted indices of exposure to threat and disruption. Psychological morbidity was measured at each phase using the General Health Questionnaire and the Impact of Event Scale. Selected findings and key conclusions are presented for each of six areas of investigation: service utilisation during the first 6 months post-disaster; patterns of earthquake experience and short-term (6-month) psychosocial outcome; earthquake exposure and medium term (2-year) psychosocial outcome; vulnerability factors and medium-term psychosocial outcome; specific community groups at increased risk (e.g., the elderly and immigrants from non-English-speaking backgrounds); the effects of stress debriefing for helpers. Threshold morbidity (i.e., likely caseness) rates are also presented for a broad range of subgroups.

The psychosocial impact of an earthquake on the elderly

By Ticehurst, Stephen; Webster, Rosemary A.; Carr, Vaughan J

International Journal of Geriatric Psychiatry, Vol 11(11), Nov 1996. pp. 943-951

Key Themes: Disaster, Mental Health and Age

Abstract:

A 4-phase community survey examined psychosocial effects of an earthquake that occurred in Newcastle, Australia, in 1989. Comparisons were made between 2,371 adults aged less than 65 yrs and 636 adults aged 65 yrs and older; 845 Ss participated in the 2-yr follow-up. Older Ss reported fewer threat and disruption experiences and used fewer general and disaster-related support services. However, older Ss reported higher overall levels of posttraumatic stress symptoms (PTSSs) on the Impact of Event Scale (IES) than did younger Ss. On both the IES and a general measure of morbidity, the effects of earthquake exposure were more marked among the elderly. Within the older group, Ss who had high levels of PTSSs were more likely to be female, to report higher levels of exposure, and to use behavioral and avoidance coping styles. Although psychological distress declined with time, PTSSs remained higher for the high exposure group throughout the study.

Impact of a natural disaster on preschool children: Adjustment 14 months after a hurricane.

Swenson, Cynthia Cupit; Saylor, Conway F.; Powell, M. Paige

American Journal of Orthopsychiatry, Vol 66(1), Jan 1996. pp. 122-130

Key Themes: Disaster, Mental Health and Age

Abstract:

This paper examines the duration of emotional and behavioral problems among children (aged 2-6 yrs) 14 months after they had experienced hurricane Hugo and assessed factors that predicted longevity of these problems. Mothers of those who had experienced the storm provided information on their children's behavioral problems, trauma symptoms, effects of the hurricane, life stressors, and duration of symptoms; this information was compared with information provided by mothers of control children (aged 2-10 yrs) who had not experienced the storm. Those who had experienced the storm showed significantly higher anxiety and

withdrawal and more behavior problems than did children who had not. Behavioral problems decreased steadily over the 6 mo following the storm. Mothers' distress in the hurricane's aftermath was associated with longevity of their children's emotional and behavioral difficulties

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Natural disasters and post-traumatic stress disorder: Short-term versus long-term recovery in two disaster-affected communities.

By Steinglass, Peter; Gerrity, Ellen;

Abstract :

This study investigated posttraumatic stress disorder (PTSD) in 115 adults from 2 communities following disaster-precipitated family relocation in a longitudinal study of family and individual response to natural disasters. Psychosocial adjustment was measured at 4 mo and 16 mo after the disaster. Instruments used for assessing stress-related symptomatology included an impact of event scale and the Diagnostic Interview Schedule. Levels of short-term stress symptomatology and diagnosable PTSD were substantial in both communities, and significant decrements in these levels occurred by 16 mo postdisaster. Substantial gender differences (greater levels for women) were apparent in both short- and long-term PTSD response rates. Patterns and levels of PTSD symptoms were different in the 2 communities.

Predictors of PTSD and delayed PTSD after disaster: the impact of exposure and psychosocial resources.

By Adams RE, Boscarino JA.

Key Themes: Disasters and Mental health

Abstract:

In the present study we sought to identify factors associated with posttraumatic stress disorder (PTSD) following the World Trade Center Disaster (WTCD) and examine changes in PTSD status over time. Our data come from a two-wave, prospective cohort study of New York City adults who were living in the city on September 11, 2001. We conducted a baseline survey 1 year after the attacks (year 1), followed by a survey 1 year later (year 2). Overall, 2368 individuals completed the year 1 survey, and 1681 were interviewed at year 2. Analyses for year 1 indicated that being younger, being female, experiencing more WTCD events, reporting more traumatic events other than the WTCD, experiencing more negative life events, having low social support, and having low self-esteem increased the likelihood of PTSD. For year 2, being middle-aged, being Latino, experiencing more negative life events and traumas since the WTCD, and having low self-esteem increased the likelihood of PTSD. Exposure to WTCD events was not related to year 2 PTSD once other factors were controlled. Following previous research, we divided study respondents into four categories: resilient cases (no PTSD years 1 or 2), remitted cases (PTSD year 1 but not year 2), delayed cases (no PTSD year 1 but PTSD year 2), and acute cases (PTSD both years 1 and 2). Factors predicting changes in PTSD between year 1 and year 2 suggested that delayed PTSD cases were more likely to have been Latino, to have experienced more negative life events, and to have had a decline in self-esteem. In contrast, remitted cases experienced fewer negative life events and had an increase in self-esteem. We discuss these findings in light of the psychosocial context associated with community disasters and traumatic stress exposures.

Understanding community psychosocial needs after disasters: Implications for mental health services.

By Silove D, Steel Z, Psychol M.

Key Themes: Disaster and Mental health and recovery

Abstract:

The psychosocial impact of disasters has attracted increasing attention. There is little consensus, however, about what priorities should be pursued in relation to mental health interventions, with most controversy surrounding the relevance of traumatic stress to mental health. The present overview suggests that acute traumatic stress may be a normative response to life threat which tends to subside once conditions of safety are established. At the same time, there is a residual minority of survivors who will continue to experience chronic posttraumatic stress disorder (PTSD) and their needs can be easily overlooked. The ADAPT model offers an expanded perspective on the psychosocial systems undermined by disasters, encompassing threats to safety and security; interpersonal bonds; systems of justice; roles and identities; and institutions that promote meaning and coherence. Social reconstruction programs that are effective in repairing these systems maximize the capacity of communities and individuals to recover spontaneously from various forms of stress. Within that broad recovery context, clinical mental health services can focus specifically on those psychologically disturbed persons who are at greatest survival risk. Only a minority of persons with acute traumatic stress fall into that category, the remainder comprising those with severe behavioural disturbances arising from psychosis, organic brain disorders, severe mood disorders and epilepsy. Establishing mental health services that are community-based, family-focused and culturally sensitive in the post-emergency phase can create a model that helps shape future mental health policy for countries recovering from disaster.

The impact of disaster on culture, self, and identity: increased awareness by health care professionals is needed.

By Deeny P, Mc Fetridge B;

Key Themes : Disaster, Mental Health and Culture

Abstract:

Self, identity, and culture are important psychosocial concepts in the analysis of how individuals perceive self in social context, self across the lifespan, and self in relation to cultural context. Contemporary theories emphasize the importance of a holistic perspective and promote the idea of identity as opposed to self-concept. This article explores the application of these ideas to disasters to provide guidance for health care professionals on how disasters impact individuals, groups, and communities. Disasters have a major impact on social infrastructure and culture, and in turn result in a range of human responses. Placing identity and maintenance of cultural integrity at the heart of practice, health care professionals are encouraged to take a holistic perspective across all phases of the disaster. Individuals, groups, and communities exhibit a range of responses influenced by levels of vulnerability or resilience. Facilitating expression of feelings related to the disaster experience is an important focus for health care. Always working within the cultural context and being sensitive to the rituals related to remembering and mourning help preserve dignity and possibly facilitate creation of a new identity and a revised culture after a disaster.

Overview of the Psychosocial Impact of Disasters

By Gloria R. Leon

Key Themes: Disaster and Mental Health

Abstract

The psychosocial consequence can be intense and of long duration in the aftermath of natural and technological disasters, as well as terrorist attacks. Posttraumatic stress symptoms and full syndrome disorder, depression, anxiety, somatic complaints, and excessive alcohol use have been demonstrated consistently, particularly following large-scale disasters. This paper examines the psychological research conducted at various intervals after extensive natural disasters, the Three Mile Island and Chernobyl technological accidents, and recent terrorist events in the United States. Factors predictive of the emergence of emotional distress and psychological and physical problems following a disaster also are discussed.

Psychological Impact of Disasters and Terrorism on Children and Adolescents: Experiences from Australia

By Sally Wooding and Beverley Raphael

Abstract

Recent acts of terrorism have emphasised the need for research to further establish not only the nature of the impact of disaster and terrorism on the population, but also further define methods of effective intervention. Those affected, and often overlooked, include children and adolescents, yet, our knowledge of the impact upon the younger members of our community is limited. The literature is evolving, and there are a small number of valuable studies that can inform a response to the mental health needs of this younger population. This article reviews some of the psychological impacts of disaster and terrorism upon children and adolescents, and considers both risk and protective factors. The importance of a developmental approach to children's understanding of disaster, particularly death and the nature of grief and loss are discussed as is the distinction between the phenomenology of bereavement and trauma. Family and community support are highlighted as protective factors, and a number of recent, valuable recommendations for intervention including psychological first aid and cognitive-behavioral therapy are described. Finally, the complex role of the media and the degree that children should be exposed to images of violence and disaster is considered. Disasters, whether they are natural or human-made always will be with us. It is necessary that a public-health approach that not only prepares for such scenarios, but responds by maximising the use of existing systems and agency linkages, is taken.

The Traumatic Process: Conceptualization and Treatment

By Shabtai Noy,

Key Themes: Disasters and Mental Health

Abstract

Traumatic stress stems from a threat to an individual's or a group's very existence. The impact of the existential threat may be compounded by an inability to cope, which affects the perception of helplessness and loss of lawfulness. A model is proposed in which the traumatic process is conceptualized to develop through three stages: (1) Alert; (2) Impact; and (3) Post-trauma. In this model, treatment of traumatic stress emphasizes the need to control and expand life, and to achieve lawfulness and meaningfulness. In the proposed model of treatment, there are essential differences at each of the stages of the traumatic process: (1) primary prevention at the stage of alert focuses on planning strategies for coping; (2) secondary prevention at the stage of impact is

based on forward treatment and debriefing; and (3) tertiary treatment at the post-trauma stage attends to coping with internal chaos and arbitrariness.

Risk Factors for Adolescent Alcohol Use Following a Natural Disaster

By Janine M. Schroeder, Melissa A. Polusny

In Prehospital and Disaster Medicine; http://pdm.medicine.wisc.edu; Vol 19; No 1; 2004

Abstract

On 29 March 1998, a series of category F-3 and F-4 tornadoes caused wide-spread destruction in four rural southern Minnesota counties in the United States. Extensive research has examined the impact of disaster exposure on adults' psychological functioning, including alcohol use. However, there has been little research on potential risk factors for adolescents' alcohol use following disaster exposure.

Hypothesis: It was hypothesized that demographic variables such as age and gender, prior drinking involvement, extent of prior trauma history, level of disaster exposure, and current disaster-related post-traumatic stress disorder (PTSD) symptomatology would predict alcohol use among adolescents.

Methods: Six months following a natural disaster, survey data were collected from 256 adolescents assessing these factors. Risk factors for adolescents alcohol use were identified using hierarchical, multiple regression and logistic regression analyses.

Results: Greater age, prior drinking involvement, and the extent of prior trauma history were significantly associated with higher levels of binge drinking. Prior trauma history and current levels of disaster-related PTSD symptomatology were significant risk factors for adolescents' report of increases in their alcohol consumption since the tornado.

Conclusion: In general, the extent of trauma exposure was associated with greater binge drinking among adolescents. Similar to adults, post-traumatic stress symptoms experienced in the aftermath of a disaster can lead to increased alcohol consumption among adolescents.

Impacts of an environmental disaster on psychosocial health and well-being in Karakalpakstan.

By Crighton EJ; Elliott SJ; Meer J; Small I; Upshur R 2003

In Social Science and Medicine, Vol 56, No 3; 551-67.

Key Themes : Disasters, Mental Health and Age

Abstract

The people of Karakalpakstan, along with those of the entire Aral Sea region, are facing a multitude of health problems corresponding to the drying of the Aral Sea and accompanying ecological consequences. In case studies of other environmental disasters, research has shown that environmental exposures may impact not only the physiological but also the psychosocial health of individuals. This research aims to determine the contribution of the environmental disaster to the psychosocial health of people living in Karakalpakstan, a semi-autonomous Republic in Uzbekistan. An interview survey was carried out by Médecins Sans Frontières, with the assistance of the McMaster Institute of Environment and Health, local Universities and local health care workers, on a random sample of 1118 individuals aged 18 years and older in three communities in Karakalpakstan in May/June 1999. The communities were chosen according to distance from the former seashore, urban/rural characteristics and ethnic composition. The survey included questions about perceived general health, the General Health Questionnaire, the somatic symptom checklist of the Symptom Check List-90, questions about perceptions of the environmental disaster, social support as well as socio-demographic and socio-economic characteristics. Findings show that 41% of all respondents reported environmental concern while 48% reported levels of somatic symptoms (SCL-90) associated with emotional distress, above the normalized cut-point. Significant differences in levels of emotional distress were reported between men and women as well as between

ethnic groups. Environmental problems are commonly perceived to be the cause of somatic symptoms and are significantly related to self-rated health status.

Physical symptoms of chronic fatigue syndrome are exacerbated by the stress of Hurricane Andrew.

By Lutgendorf SK, Antoni MH, Ironson G, Fletcher MA, Penedo F, Baum A, Schneiderman N, Klimas N.

Psycho som Med. 1995 Jul-Aug;57(4):310-23.

Key Themes: Disaster and Mental Health

Abstract:

This study examined the effects of Hurricane Andrew on physical symptoms and functional impairments in a sample of chronic fatigue syndrome (CFS) patients residing in South Florida. In the months after Hurricane Andrew (September 15-December 31, 1992), 49 CFS patients were assessed for psychosocial and physical functioning with questionnaires, interviews, and physical examinations. This sample was made up of 25 CFS patients living in Dade county, a high impact area, and 24 patients in Broward and Palm Beach counties, areas less affected by the hurricane. Based on our model for stress-related effects on CFS, we tested the hypothesis that the patients who had the greatest exposure to this natural disaster would show the greatest exacerbation in CFS symptoms and related impairments in activities of daily living (illness burden). In support of this hypothesis, we found that the Dade county patients showed significant increases in physician-rated clinical relapses and exacerbations in frequency of several categories of self-reported CFS physical symptoms as compared to the Broward/Palm Beach county patients. Illness burden, as measured on the Sickness Impact Profile, also showed a significant increase in the Dade county patients. Although extent of disruption due to the storm was a significant factor in predicting relapse, the patient's post hurricane distress response was the single strongest predictor of the likelihood and severity of relapse and functional impairment. Additionally, optimism and social support were significantly associated with lower illness burden after the hurricane, above and beyond storm-related disruption and distress responses. These findings provide information on the impact of environmental stressors and psychosocial factors in the exacerbation of CFS symptoms.

Effects of a natural disaster on immigrants and host population.

By Webster RA, McDonald R, Lewin TJ, Carr VJ.

In J Nerv Ment Dis. 1995 Jun;183(6):390-7.

Key Themes : Disaster, Mental Health and Vulnerability

Abstract:

The psychosocial effects of the 1989 Newcastle earthquake on 250 immigrants from non-English-speaking backgrounds (NESB) were compared with a matched sample of 250 Australian-born subjects. The NESB subjects had higher levels of both general (General Health Questionnaire-12) and event-related (Impact of Event Scale) psychological morbidity. Furthermore, NESB females had the highest levels of distress, particularly those who were older on arrival in Australia and those who experienced high levels of disruption. The results suggest that NESB immigrants, particularly women, appear to be more at risk for developing psychological distress following a natural disaster. However, level of exposure and an avoidance coping style contributed more substantially to psychological distress than ethnicity.

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