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Psychosocial Aspects of Disaster Recovery:

Integrating Communities into
Disaster Planning and Policy Making

by

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This paper examines psychosocial programming in relation to natural hazards response and recovery processes. It discusses the need to integrate more fully the role of social and community psychology into hazards analyses and planning. Conventionally, psychosocial programming has focused on post-disaster impacts of disasters, giving emphasis to individual trauma and psychosocial distress. The present discussion emphasizes a more inter-disciplinary approach to recovery, one which is based on a socio-structural framework which stresses the role of collaborative social and community processes.

Mainstream psychology has traditionally considered extreme events like disasters as extraneous and abnormal events which overwhelm normal coping responses. Human responses to natural hazards are assumed to be rooted primarily in the way individuals think, behave and interact in the environment (Guttman, 2000). Disasters that are unexpected, occur suddenly, and cause widespread damage are understood to be traumatic and associated with a high degree of psychological disturbance (Bolin, 1989; Thoits, 1983). Survivors are most often seen as having significantly disrupted lives which require lengthy periods of recovery (Yates, 1992).

There is little question regarding the potentially traumatic impacts of disaster events. Studies have shown that posttraumatic stress symptoms and rates of PTSD increase with the nature and severity of disaster events (Staab et al., 1999). For example, persons who suffer personal injuries or significant financial loss in natural disasters are likely to have more symptoms (Green, 1993). Depending on the severity of the event, rates of PTSD have been found to vary from about 5 percent to 22 percent (Green & Lindy, 1994).

In recent years, as awareness of the psychological impacts of disaster events has grown, post-trauma intervention has received considerable attention. The most widely used model of psychological intervention is Mitchell’s Critical Incident Stress Debriefing (CSID) (Mitchell, 1983; Mitchell & Everly, 1996). Debriefings are used as a preventative intervention, and based on the assumption that providing survivors with the opportunity to share their experiences in a structured and supportive environment will reduce feelings of abnormality, normalize distressing feelings and behaviors, and mitigate chronic morbidity by facilitating more adaptive coping responses (Raphael & Wilson, 2000).

Despite the prevalent use of the CISD model among mental health practitioners, emerging research has questioned its effectiveness in preventing long-term psychological disturbance, and in some cases has shown it to have adverse impacts on participants (Bisson et al. 1997; Deahl et al., 1994; Hytten & Hasle, 1989; Kenardy & Carr, 2000; McFarlane, 1988; Wessley et al., 1998). Gist et al. (1999) and Stephens (1998) found that whatever palliative effect debriefings may have, it is no greater than afforded by more natural venues such as talking with family and friends. Watts (2000) has shown that debriefings do not make any quantifiable difference in either mitigating initial distress or promoting recovery after extreme events, even when perceived to be helpful by participants. Vernberg (1999: 212) has concluded that “the more rigorous the study [of CISD], the more objective its measurements, the more independent the researchers from the ‘movement’ itself, and the more discerning the venue of publications, the more likely has been a neutral to negative assessment”.

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There are a number of additional considerations which bring into question the relative effectiveness of the CISD model and other forms of traditional mental health. Research has shown that only a small percentage of people are likely to be in need of individual mental health services (Flynn, 1999). The vast majority of disaster survivors recover from the initial shock and trauma of a disaster usually within weeks or months of the event (Cook & Bickman, 1990; Salzer & Bickman, 1999), with the magnitude of distress tending to be statistically insignificant over the long-term (Bravo, et al., 1990). Where elevated levels of distress persist, it is likely to most often take the form of more mild and ephemeral difficulties, rather than trauma-related syndromes (Rubonis & Bickman, 1991; Shephard, 1977). Smith et al. (1986: 75) have in fact concluded that disasters “contribute to the persistence or recurrence of previously existing disorders, but are not responsible for the genesis of new psychiatric symptoms or disorders. After the Mount St. Helen eruption, Smith et al. (1990) found that pre-disaster psychiatric disorders predicted post-disaster psychopathology with a sensitivity of 72% and specificity of 90%.

This is not to suggest that disasters do not have significant psychosocial impacts. These events almost always result in additive and interactive stressors which may contribute to symptoms of psychological distress weeks or months after the disaster. However, it is important here to recognize that psychological distress is often more reflective of the difficulties and hardships encountered during recovery and rebuilding, rather than the impact characteristics of the event. “Dealing with relief agencies (particularly governmental agencies), loss of job, loss of community status, or a changed sociocultural mix in the community are all experiences that may occur following a disaster and may actually be more significant, over time, than exposure to the disaster agent itself” (Flynn, 1999: 111). Debriefing is rarely cognizant of such issues, and tends to be too basic to address the multitude of changing needs which characterize the post-disaster environment (Raphael & Wilson, 2000).

This does not mean that appropriate trauma-related interventions are not helpful to persons exposed to highly traumatic events. However, as the principal form of psychosocial intervention in the aftermath of a disaster, this approach is likely to lack relevance to the needs of the vast majority of disaster survivors. The period of recovery can be broadly defined as time of returning to ‘normality’ and characterized by such processes as rebuilding, allocating resources, finding housing, and repairing or re-establishing social and economic networks in the community (Fathergill et al., 1999). In many cases, people may benefit most from very concrete, explicit, and directive assistance which enables them to attain the tangible goods and services required to overcome the material losses of a disaster (Flynn, 1999; Salzer & Bickman, 1999).

Research has shown that the strains associated with restoring housing and patterns of life can have as much impact upon psychological well-being as acute and potentially traumatizing events (Cronkite & Moos, 1984). Parker’s (1977) research of the 1974 Darwin cyclone showed that while initial levels of dysfunction among survivors were linked to ‘mortality stress’ (fear of injury or death), maladjustment after 10 weeks was associated with such ‘relocation stressors’ as loss of residence and possessions and disruptions to communal support networks. Similarly, Lima et al. (1987) found that distress levels seven months after the 1985 Armero volcano in Colombia were related less to impact characteristics than to concerns pertaining to lost
possessions, interrupted employment, dissatisfaction with living conditions, and feelings of not having been adequately cared for by the government.

From a societal perspective, it is important to acknowledge that the impacts of natural disasters are rarely random or evenly distributed throughout communities. The impact of a natural event almost always reflects pre-existing resource relationships and socioeconomic resources which underlie human vulnerability and recovery capacity (Hewit, 1983). This is most apparent in the relationship between poverty and vulnerability, keeping in mind “certain physical and social attributes (such as age, race, ethnicity and gender) and living arrangements (such a single-parent households) are most likely to be associated with limited resources and power … The effect [of a disaster] on any particular household, therefore, results from a complex set of interacting conditions, some having to do with geography and location, some with the dwelling, and still others with the social and economic characteristics of people living there” (Morrow, 1999: 2).

Within this context, the psychological impacts of disasters can not be sufficiently analyzed within the CISD paradigm. Rather, psychological distress is better examined within a socio-structural perspective which takes into account not only the individual’s capacity to overcome material and physical losses, but the underlying social, economic and political relationships which determine recovery capacities. van den Eynede and Veno (1999) have observed that change per se does not necessarily lead to distress, unless people lack resources and other forms of support. As Freedy et al. (1994: 259) explain, “the norm of psychological recovery across time probably occurs in proportion to an individual’s capacity to reverse losses created by a natural disaster”. Similarly, Gleser et al. (1981) found that the best predictor of adverse psychosocial responses after the Buffalo Creek flood was whether or not victims were able to take direct action to reduce the flood’s immediate impact (e.g., clean and repair homes, provide assistance to others).

Among the most vulnerable to natural hazards are poor and marginalized segments of society. According to the US experience, neighborhoods which have been economically poor or declining prior to a disaster tend to lose out further during recovery and reconstruction (Dash et al., 1997; Phillips, 1993). Low income households are generally located in less desirable but higher risk areas. In the event of a disaster, these households not only incur proportionately higher losses, including housing damage, but recover more slowly (Bolin, 1993; Cochrane, 1975). This tends to reflect lower incomes, fewer savings, greater unemployment, and less insurance (Bolin & Bolton, 1986; Perry & Mushkatel, 1984). Unlike upper and upper-middle class households which may be capable of relocating or refinancing home construction, lower income individuals have fewer housing alternatives and experience longer periods of residential instability (Rossi et al., 1983; Comerio, 1998).

At the same time, marginalized households often have less access to information and communication channels relating to assistance programs. Indeed, a pattern of neglect has often characterized post-disaster aid allocation (Kilijanek & Drabek, 1979). Aptekar (1994) has observed that disaster victims often complain of being victimized twice, initially by the disaster and then by relief and insurance agencies set up to help them. This tends to be most pronounced among minority populations which may be less proficient than upper-middle-class persons in maneuvering within the relief system (Aptekar, 1990). Relief agencies in the past have been
criticized as being sporadic and stochastic in coverage, failing to access whole classes of victimized populations (Cockburn, 1989). Research has shown that persons who have larger social networks, are of higher socioeconomic status, who are younger or female often receive more support (Eckenrode & Wethington, 1990). On the other hand, persons of lower socioeconomic status, the elderly, less educated, and some ethnic minorities receive less assistance (Bolin & Bolton, 1986; Oliver-Smith, 1996).

Similar observations have been made for other vulnerable groups. For example, older persons not only have proportionately more to lose than younger persons, but may have fewer social and economic resources and are more reluctant to access formal assistance (Butcher & Dunn, 1989). Women also experience higher levels of distress, but this is associated with lower education, limited income resources, and pre-existing health problems (Shore et al. 1986). Brown and Harris (1973: 73) found working class women to be especially vulnerable to psychological distress after a crisis event. “This, in turn, was found to be related to the quality of their emotional relationships, the number of young children in the home and whether the woman was in paid employment outside the home ... Life events [breakdowns] are often the end result or focus of long-term difficulties or problems rather than discrete occurrences”.

The point of this discussion is not to identify at-risk groups per se, but to emphasize the need to apply a broad socio-structural approach to the psychological dimensions of disasters. The ability of people to cope and adjust to disaster events is often not as much a function of disaster trauma as it is the capacity of people to access tangible assistance and support. Timely financial and material resources can not only mitigate the impacts of loss and disruption, but allows people to regain a sense of routine and normalcy in their daily lives. This process, however, tends to reflect micro-level characteristics such as age and gender, as well as prevailing economic and social relations which perpetuate vulnerability to natural hazards when not incorporated into policy and management decisions. This would suggest that the psychological dimension of disasters must be examined at a broader level than the individual, and take into account the social, economic, and political structures which determine what people can and can not do in response to extreme environments.

Towards An Integrated Perspective to Planning and Decision-Making

One of the problems associated with conventional psychology has been its neglect of natural hazards and disaster research. Conventional psychology has tended to view human coping as the relative ability of people to resolve symptoms of distress associated with change and loss, rather than in terms of how people regain their physical and social livelihoods during adverse circumstances. At the same time, emergency preparedness and planning has often paid insufficient attention to the psychological dimensions of disasters. As discussed in this section, there is need to adopt a more interdisciplinary approach which recognizes human responses to natural hazards as extending across disciplines of study and practice within the field of natural hazards, research and planning has increasingly emphasized a socio-structural approach to disaster management. Disasters are seen not merely as extreme geophysical events detrimental to human activity, but as a complex mix of geophysical processes, on one hand, and social, economic, and political processes, on the other (Cannon, 1994; Varley,
Blaikie et al. (1994: 13) assert that natural and human dimensions of disasters are so inextricably bound together that these events can not be understood to be natural in any straightforward way. Rather, disasters are a complex product of the interface between natural and social affairs in which “activities of daily life comprise a set a points in space and time where physical hazards, social relations, and individual choice converge”.

This approach “puts the main emphasis [of natural hazards] on the various ways in which social systems operate to generate disasters by making people vulnerable” (Blaikie et al., 1994: 11). Coping and adjustment in this context includes not only the manner in which people resolve distress, but their ability to access the financial and material resources needed to recover. As such, the capacity to cope with extreme events is best considered within a larger societal or communal context. Although psychological coping may be an internal process, mediated by such factors as perception, cognition and coping habits, it is also intricately linked to the social, economic, and political relations which determine what people can achieve in their environments.

This does not disregard the psychological impacts of acutely traumatic events, of which there is considerable supporting data. Stress-related disorders such as PTSD have long been recognized as common sequelae following severe psychological stress (Ramsey, 1990). However, it is important to recognize that trauma is a small part of the disaster response process, and frequently not characteristic of the more prevalent non-life threatening disasters in Canada. By way of reference, the most frequent natural disaster in Canada in the past century has been flooding (145), followed by storms (98) and droughts (55). In comparison, there have been a total of 23 tornadoes 22 earthquakes, and 12 avalanches (Tudor, 1997).

This suggests that a broader-based approach aimed at facilitating communal life and social support processes may have greater relevance than CISD type models. Research has shown that mental health services are not widely used in the aftermath of disasters, and are often perceived to be unhelpful to people who are in need of more concrete goods and services (Hartsough, 1982; Summers & Cowan, 1991). Moreover, coping and adjustment during distressing times is closely linked to a person’s available social supports, which serve as a buffer against stress (Cohen & Wills, 1985). Any disruption to a person’s social support, regardless of the presence of a stressor, tends to be associated with reductions in psychological health (Salzer & Bickman, 1999).

It is important as well to recognize that while disasters impact upon individual victims, they do not happen to individuals per se. Disasters more accurately represent collective stress situations occurring at a community level as result of major unwanted consequences. A community can be defined with varied meaning and scales, but in general refers to the collectives in reference to a local entity. In the present discussion, both the disaster event as well the recovery and rebuilding process may be considered a social and communal phenomena. As Gist and Lubin (1999; 352) explain, a disaster is “inherently defined by its relationship to community – a cataclysm qualifies as a disaster only to the extent that it overwhelms the capacity of a community to contain and control its consequences. It is not at all, then, a collection of individual experiences, though these certainly merit address”.

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Gist et al. (1999) have proposed that psychosocial services be oriented toward mobilizing, enhancing and maintaining natural communal and social supports that typically sustain people through life crises. The authors observe that mental health professionals need to “step back from interventionists mindsets and roles, and reach into their basic knowledge of human behavior and social response to help communities reclaim their autonomy and self-efficacy in the face of social disruption” (3-4). This is similarly emphasized by Salzer and Bickman (1999: 77), who explain that “the destruction and disruptions caused by disasters suggest that tangible support and efforts to rebuild social networks and sense of community should be the primary focus of efforts to enhance the psychological health of disaster victims … Mental health interventions aimed at re-establishing social support networks include bringing families, neighborhoods, and the larger community back together as soon as possible after a disaster”.

To be most effective, these efforts need to be applied at a grass roots or neighborhood level, in a manner which is relevant to the diverse needs and priorities of differing stakeholders. As discussed, recovery is substantially influenced by such factors as ethnicity, race, and socioeconomic status, in addition to micro-level variables such as gender and age. In the aftermath of disasters, competing needs and interests often collide as groups battle contend limited resources. Issues related to post-disaster funding for housing, business repair or relocation compensation may differ to varying degrees among community groups. Generally speaking, community-level decisions are influenced by more powerful stakeholders who are familiar with lobbying strategies, and can often come at the expense of alternative priorities which might serve more vulnerable or marginalized segments of society (Guttman, 2000; Kaniasty & Norris, 1999; Mileti et al., 1975). Attention therefore needs to be given to ensure that the recovery process is facilitated in manner which promotes the inclusion of all segments of society.

The aim here is not to necessarily to address social and economic vulnerability per se, although returning to a disadvantaged position should not be accepted as a viable option for disenfranchised groups (kaniasty & Norris, 1999). Rather, the objective is to facilitate the capacity of all segments of a community to democratically participate in recovery, according to their own diverse interests and values. As observed by Gist et al. (1999), this is more a process of community mobilization and empowerment than a remedial psychological intervention, enabling communities (and particularly vulnerable groups) to come together to effect positive and permanent change. Rather than seeing people primarily as beneficiaries, this approach seeks to involve people as planning and implementation partners and “to stimulate independence from the status quo by focusing on problems and needs of people rather than on the existing network of human service programs” (Kettner et al., 1999: 25).

This process has particular psychological benefit in that the distress experienced in the aftermath of disasters is often as much a function of the difficulties encountered during rebuilding as it is loss itself. Here, it is important to note that psychological well-being is significantly influenced by the extent to which people are self-determining in both their daily lives and living circumstances (Israel et al., 1994). During recovery, this often reflects the degree of control which people retain vis-à-vis disaster relief and recovery agencies, and especially in their ability to access financial and material assistance in a timely manner (Aptekar, 1994).
Psychological stress in this context is analyzed primarily within a socio-structural perspective, rather than as an individual phenomena determined by internal attributes (Guttman, 2000). This approach asserts that many post-disaster difficulties can be linked to community and organizational arrangements and practices which do not adequately address survivors’ needs and issues. This especially occurs when the interests and priorities of communities, or segments of communities, are not actively integrated into recovery planning and policy decisions. Assistance in such cases often becomes a form of beneficent paternalism (Beauchamp, 1988) which places limits on individual and community initiative, power and decision-making (O’Neill, 1999).

The peripheral positioning of a community not only risks a neglect of more vulnerable persons who lack effective lobbying strategies, but often fuels confusion, antagonism, suspicion, and frustration (Kaniasty & Norris, 1999). Differences in interests, needs and priorities are more likely to collide when lacking a formal channel of expression and debate, and augment the experience of distress across the community (Kaniasty & Norris, 1999). Over time, the line of authority may be perceived to be self-serving and lacking credibility, adding to peoples’ uncertainties and fears (Dynes & Tierney, 1994). Rumors are likely to thrive when recovery processes and outcomes are unclear, and “reverberate on the reactions of those hearing them and be perpetuated with fear and excitement” (Hobfoll et al., 1995: 149).

Even in cases where policies have a clear aim of promoting the good of the public, there may arise unintended conflict and antagonism when differences in priorities and interests are not identified (Guttman, 2000). This is aptly illustrated in Haque’s (2000: 241) description of 1997 Red River evacuation in Manitoba. “The Manitoba Emergency Measures Organization (MEMO) reasoned that lives were in danger, while the people’s priority was to save their property. The authorities even threatened coercive measures if residents did not evacuate voluntarily (Heinrichs, 1997). This forced evacuation was blamed for property damages during the flood”.

This clearly suggests policy and management decisions, from both a disaster-reduction and psychological perspective, need to be co-determined in way that ensures the identification of cross-sectorial community priorities and values. One means to achieve this is through a collaborative and participatory approach which puts “people back a centre-stage” (Streeton, 1994). Critical to this process are “strategies to generate agreement on the process of participation among all stakeholders, public participation early in the planning process, public awareness of the power involved, and availability of information to all participants” (Guttman, 2000: 147). Social groups and communities in this context are viewed not as the beneficiaries of second-order choices (Childress, 1990), but as planning and implementation partners which are essential sources of knowledge and expertise, and capable of organizing and managing change (Bell & Franceys, 1995). The objective of intervention in this context is to enable people to see their situations as a reality they can and should transform, with assistance serving to facilitate but not direct the course of recovery (Freire, 1968).

Minkler (1989) has described such a normative intervention process. According to Minkler, because people live in social entities, the promotion of adaptive action entails a process of collaboration, cooperation, and mutuality across all levels of society. This process is
operationally defined to the extent to which an intervention meets the following: Does it (1) help to develop a critical understanding of the causes of hazards and reduce risk across different levels of problem definitions and solutions; (2) include mechanisms for meaningful participation across stakeholders in a manner which allows diverse opinions to be heard and explained; (3) help inform and educate policymakers, the mass media, and other influential bodies of both structural-level and individual-level factors which underlie vulnerability and risk; (4) foster appreciation of both nonprofessional expertise and the importance of cross-sectorial and multi-cultural views; and (5) promote a social environment that reinforces social support, mutual aid, and community development?

This approach has particular relevance given the legislative direction of responsibility in Canada’s emergency response is placed at the level of local authorities, beginning with the individual (Emergency Preparedness Canada, 1993). A mutual process of planning and decision-making would not only promote the integration of local interests and expertise into preparedness and recovery planning, but will help ensure communication and the understanding and acceptance of developed policies. This will not only give people a sense of partnership and ownership in managing emergencies and recovery, but can reduce the uncertainties and anxieties associated with natural hazards. Moreover, it can mitigate risk and promote recovery in that “local-level planning and preparedness, public perception of risk, and access to information and associated resources, all have profound implications for how individuals cope with and recover from a disaster … Societal experience often leads to better preparedness in anticipating [and recovering from] natural disasters. To better understand the level of coping ability and to determine the areas where improvement could be made one needs to look to past experiences, past coping strategies” (Haque, 2000: 226, 242). In reality, many local communities in Canada presently lack the resources and mechanisms to implement this type of planning.

In this regard, recovery processes need to be linked to preparedness and mitigation initiatives, with emphasis on strengthening communal planning and decision-making mechanisms. The objective is not only to facilitate an awareness and understanding of natural hazards, but to provide people at a neighborhood level the means and control to develop adaptive responses.

Here, it is important to acknowledge that both preparedness and recovery can be substantially influenced by everyday living demands and priorities which determine what people can and can not do in response to extreme events. This may be discerned not only in terms of socioeconomic status, which may limit people’s ability to both prepare for and recover from disasters, but also the in varied needs of more vulnerable segments of society such as the elderly, disabled, or single parent households. Subsistence income, reduced physical strength and mobility, or heavy child care responsibilities can not only intensify the level of disruption experienced after a disaster, but limit personal resources, time, and energy available for recovery activities. Effective disaster management requires that policy and practice take into account the needs and priorities of vulnerable groups and, when possible, are implemented in a manner which fosters positive change in everyday life.

One option to facilitate equitable community development is through a cross-sectorial emphasis which encourages mutual aid networks through cooperative strategies of communication and
community development (Fawcett et al., 1996). The US experience has shown that social
disruptions which surface during disasters can serve to galvanize communities into action,
opening political dialogues on social inequalities and providing opportunity for change and
development (Bolin, 1993; Enarson & Morrow, 1997). This process can be advanced by ensuring 
“planners and managers look beyond geographical vulnerability to understand how unique social 
and political patterns in their communities result in accentuated risk to some categories of 
people” (Morrow, 1999: 10). The development of community vulnerability inventories (Blaikie 
et al, 1994; Geis, 1997) may not only facilitate anticipated community needs at all levels of crisis 
response (FEMA, 1997), but can help match appropriate social support services, educational 
initiatives, and relief and mitigation programs to local neighborhood needs. These tools can also 
provide a vehicle to identify and mobilize more marginalized, less visible segments of society 
into supportive neighborhood activities which can reduce daily strains and promote local social 
capacities (e.g., home help for the elderly, child care support groups for single parents).

In summary, it may be argued that psychosocial programming needs to take a more balanced 
perspective than presently afforded by mainstream psychology and CISD interventions (Gist & 
Woodall, 1999; Kenardy & Carr, 2000; Wessley et al., 1998). Mental health practitioners are 
trained primarily to diagnose and treat people with mental health difficulties, and thus come to 
disasters with this perspective. Although crisis intervention, supportive counseling and education 
has its place in disaster response, these practices are in many cases helpful to only a small 
percentage of the population, and lack relevance to a vast number of people who are better served 
through tangible assistance, advice and information (Salzer & Bickman, 1999). At the 
community level, practitioners can facilitate recovery by helping families and neighborhoods to 
come together as soon as possible. This can not only assist in the re-establishment of social 
networks and communal life, but provides an opportunity for members to identify and vocalize 
common needs and priorities.

This need not come at the expense of persons in need of individual psychosocial services. Indeed, 
it would be negligent not to ensure that continued attention be applied to the development of 
effective post-trauma interventions. In 1971, the Chicoutimi landslide in Quebec killed 31 
persons, while the 1987 Edmonton tornado claimed 27 lives (Tudor, 1997). Studies have clearly 
shown that events of such magnitude may result in adverse psychosocial impacts which require 
formal mental health interventions. The development of palatable outreach services, cognizant of 
wide array of needs and demands associated with recovery, can be critical in ensuring that 
persons experiencing difficulties are identified and linked to appropriate services and resources.

From a policy-making perspective, it is important to recognize disaster management as an inter-
disciplinary process. Disasters have substantial social and psychological impacts which reflect 
not only impact characteristics (e.g., magnitude and severity), but pre-existing social and 
economic vulnerabilities which intensify loss and disruption. Effective disaster management 
therefore needs to ensure that the diverse interests and priorities of communal life are integrated 
into planning and response, especially those of vulnerable persons and groups. At the same time, 
it is important to take into consideration the psychological effects of disasters, particularly in 
relation to response mechanisms and processes. The level of psychological distress generated by 
a disaster may be either diminished or intensified by planning and management decisions, which
in turn can enhance or impede recovery and reconstruction. Where planning and decision-making actively incorporates people as partners, and attempts to reduce vulnerability through cooperative strategies of communication and development, disaster management can become a community-based process that builds resiliency rather than merely fixing what disasters damage.
References


