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Attachment 2:

The Impact of Climate Change on Mental health and Psychological Well-being.
A Report prepared by the ClimateCaucus Project.

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"It is with great pleasure that I inform you that on January 23, your
report was formally presented to His Excellency, Kiyotaka Akasaka,
Under Secretary General of the United Nations for Communications and
Public information. He agreed to present a copy to the Secretary
General, who was unable to attend, due to the crisis in Gaza. Copies
have also been sent to Achim Steiner, UNEP Executive Director, Dr.
Rajendra K. Pachauri, Chairman of the IPCC, as well as former
Secretary-General Kofi Annan, former Vice President, Al Gore and
President Barack Obama."

TITLE: NGO Working Group on the Impact of Climate Change on Mental Health and Psychosocial Well-Being: Guidelines for Action

Description of the Issue

Purpose. The purpose of this working group is to review current scientific and empirical evidence on the possible impact of climate change on mental health and psychosocial well-being, and to recommend specific actions to be implemented by UN agencies, governments, donors, NGOs, and civil society at large.

Background. Climate change is increasing the severity of disasters and adverse weather conditions worldwide, with particularly devastating effects on developing countries. Growing scientific evidence shows that events such as natural disasters can have severe and long-lasting effects on physical health as well as on mental health and psychosocial well-being. The global burden of mental and substance use disorders is also likely to rise via multiple inter-related social and economic stressors, including poverty, food insecurity, population displacement, conflict, and fragmented social structures. As a consequence, social and economic development as well as community functioning are likely to be disrupted or even reversed for years to come. Individuals with lower resources as well as women, children, the elderly, the disabled, and those with pre-existing mental health or substance use problems are especially vulnerable. They are more likely to show severe and persistent stress reactions and are less likely to recover socioeconomically. On the other hand, individuals and communities can often show resilience in the face of crises. It is crucial to build on such existing strengths in order to improve psychosocial well-being and thereby empower communities. Addressing the projected impact of climate change on mental health and psychosocial well-being requires the collaboration and effort of multiple stakeholders including UN agencies, governments, donors, NGOs, universities, and civil society at large. This chapter outlines several recommendations and action priorities aimed at reducing the global burden of mental health, substance use, and psychosocial problems that may directly or indirectly result from climate change.

Draft Chapter Text

1) Introduction

There is scientific consensus, that climate change will lead to wide ranging changes in weather patterns, higher temperatures, rising ocean levels, shifts in climatic zones and ecosystems, increased pollution and more weather fluctuations (Parry, Canziani, Palutikof, van der Linden, & Hanson, 2007). It is projected that the severity of climate-related events such as natural disasters (e.g., storms, droughts, floods, and wild fires) will continue to increase globally, with the most devastating effects in developing countries (Parry et al., 2007). Climate scientists predict that the impact of climate change on human health will be mostly negative (Confalonieri et al., 2007), posing "substantial risks to human health, particularly among the poorest populations" (World Health Organization, 2003). Environmental changes and disasters can have severe and long-lasting effects not only on physical health, but also on mental health and psychosocial well-being (World Health Organization, 2008c). The World Health Organization (WHO) defines mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". WHO asserts that mental health is the "foundation for well-being and effective functioning" and that there is "no health without mental health" (World Health Organization, 2008a). The high prevalence of mental health problems, however, is already a global concern. Depression was the fourth leading contributor to the global burden of disease (DALYs) in 2000 and is projected to reach second place in 2020 (World Health Organization,

2008a). Research and projections of the effects of climate change on human health have primarily focused on physical health conditions such as effects of heat waves or the geographic distribution of infectious diseases (Confalonieri et al., 2007; Hansen et al., 2008). However, mental health and psychosocial well-being are likely to be impacted both directly and indirectly via multiple pathways (see Figure 1), thereby increasing the global burden of mental illness and psychosocial problems, which in turn can threaten social and economic development.
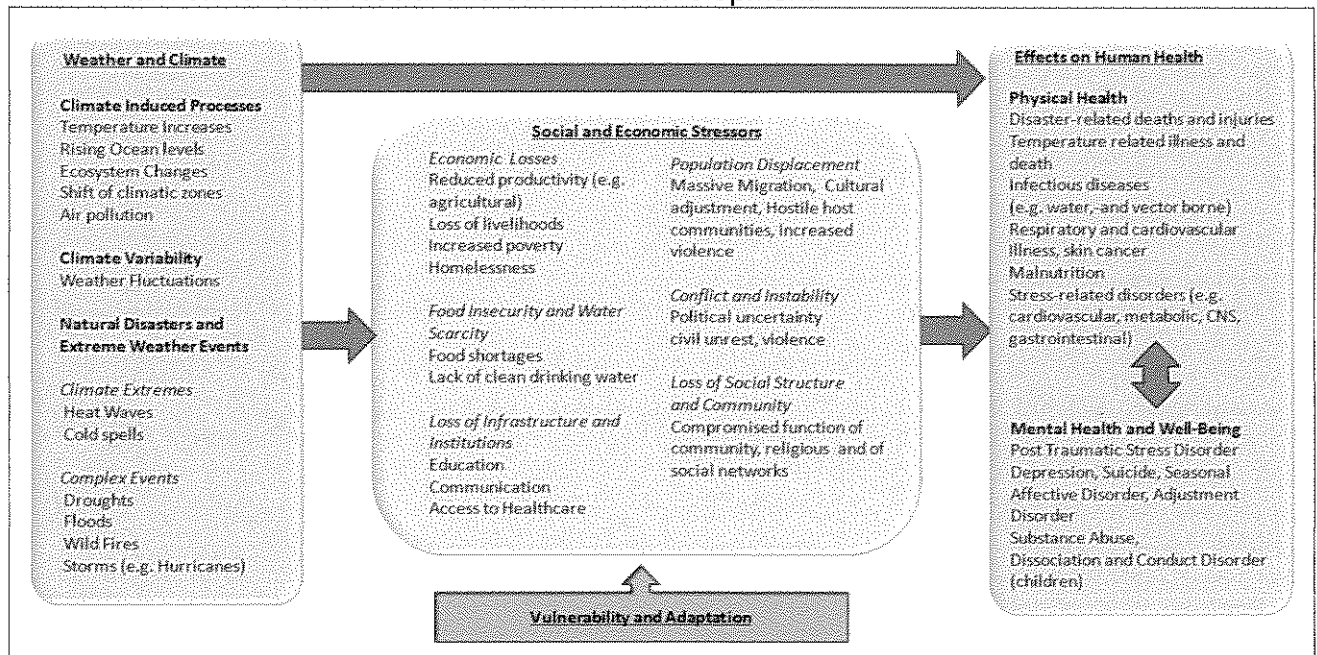

Figure 1. The impact of climate change on mental health and psychosocial well-being

2) Effects of Weather and Climate Change on Human Health

Physical Health. A WHO quantitative assessment, taking into account a only subset of possible physical health impacts (e.g. malnutrition, diarrheal disease, malaria), concluded that the effects of climate change that have occurred since the mid-1970s have likely caused over 150,000 excess deaths in the year 2000 (World Health Organization, 2003). Climate change can impact human health via multiple pathways (Frumkin, Hess, Luber, Malilay, & McGeehin, 2008). Climate extremes such as heat waves and cold spells have been linked to excess mortality and morbidity, especially affecting those with pre-existing cardiovascular and respiratory conditions, the very young and the elderly (World Health Organization, 2003). During the heat wave of 2003 in Europe, 70,000 excess deaths were recorded (Confalonieri et al., 2007). Transmission seasons of vector borne diseases such as malaria, are projected to become longer and expand in geographic range (Confalonieri et al., 2007). Both floods and droughts can lead to contaminated water supplies and poor sanitation, which in turn increases the prevalence water borne diseases, resulting in diarrhea and other illnesses (World Health Organization, 2003). Changes in seasonal patterns of air-borne particles, such as plant pollen, can trigger asthma, which is projected to increase by 20% over the next 10 years (World Health Organization, 2003). Wild fires often worsen respiratory and cardiovascular problems including asthma and chronic obstructive pulmonary disease (Patz, 2005). Furthermore, interactions between ozone depletion and warming temperatures may result in higher rates of skin cancer (World Health Organization, 2003). Climate change is also increasing the severity of natural disasters, which can be defined as sudden environmental events that overwhelm local or national capacities and cause great damage, destruction, or human suffering (Executive Office of the President of the United States National Science and Technology Council, 2003). Such events have both acute and chronic effects on health, leading to excess deaths, injuries, and infectious diseases (Confalonieri et al., 2007). Disasters have also been associated with higher incidences of various medical conditions, increased somatic complaints (Maltais et al., 2000) and high medical service utilization, which are not directly attributable to the event (Dorn, Yzermans, Kerssens, Spreeuwenberg, & van der Zee, 2006). Research suggests that mental

health problems and psychological distress may play a role in such chronic health effects. Post-Traumatic Stress Disorder (PTSD) for example, is a risk factor for medical illness (Friedman & McEwen, 2004) and related to higher medical services utilization (Kartha et al., 2005). Health problems associated with psychological stress include cardiovascular, metabolic, central nervous system, gastrointestinal, reproductive, and immunological problems that may lead to increased disease susceptibility (McEwen, 1997).

Mental Health. Natural disasters have well-documented effects on mental health. A review of relevant research suggests that more than one third of adult (Norris, Friedman, & Watson, 2002, Lange, 2004) and child (Berman, Kurtines, Silverman, & Serafini, 1996; Vernberg, Silverman, La Greca, & Prinstein, 1996) disaster victims suffer from PTSD. In the aftermath of such events, the risk increases for substance abuse, anxiety, depression, adjustment disorders, interpersonal problems, suicide, vocational difficulties, long-term physiological changes, and subsequent physical health problems (Norris et al., 2002). While the more gradual effects of climate change on mental health and psychosocial well-being have received less research attention, it is likely, that such changes will pose new challenges in the mental health field. Recently, the term "solastalgia" was coined to describe the psychological distress caused by environmental change and degradation (Albrecht et al., 2007). This type of distress, characterized by negative feelings, a sense of powerlessness and a lack of control, has been studied among people affected by persistent drought and coal mining in rural Australia (Albrecht et al., 2007). Climate change, which compromises the healthy link between people and their home territory, may increase the prevalence of such 'psycho-terratic illnesses' (Albrecht et al., 2007; Lundberg, 1998). Furthermore, both laboratory and field research has found associations between higher temperatures and increased violence and aggression (Lundberg, 1998) as well as higher rates of hospital admissions for mental health problems (Hansen, et al., 2008). It is also projected that interactions between ozone depletion and global warming may result in altered general well-being, and a higher incidence of disrupted sleep wake cycles, mood problems and seasonal affective disorders (World Health Organization, 2003).

3) Social and Economic Stressors

While the direct consequences of climate change are relatively open to measurement, the indirect social and economic impact is more difficult to foresee or quantify (Confalonieri et al., 2007). However, effects of climate change including weather-related events create a sequence of inter-related social and economic stressors (Oliver-Smith, 1998) (see Figure 1), which can have a profound impact on physical and mental health (Prince et al., 2007, Committee on Economic Social and Cultural Rights, 2000).

Economic Losses. Rising temperatures, coastal flooding, and variable precipitation patterns can significantly reduce agricultural land and water resources and may result in major economic losses and threats to livelihoods, mostly in developing countries (Parry et al., 2007). Other sectors such as manufacturing, and retail may also be affected. One alarming example of how rising agricultural losses can impact mental health is the high rate of farmer suicides in some Indian towns (Rajivlochan, 2006). Repeated crop failures, rising costs of cultivation, lower profits, increasing debt, and the absence of social support infrastructure have contributed to the suicide of nearly 150,000 Indian farmers from 1997 to 2005 (ZNET India, 2005).

Food Insecurity and Water Scarcity. Reduced agricultural production including crop yields and livestock is projected to have an enormous impact on many developing regions, where food security is already an issue (World Health Organization, 2003). More variable rainfall patterns leading to both flooding and droughts can compromise the supply of drinking water (Confalonieri et al., 2007) and result in poor sanitation and hygiene (Patz, 2001). Globally, water scarcity currently affects four out of every ten people. The risk of malnutrition, diarrhea, and other illnesses is likely to increase, contributing to suffering and distress as well as possible violence, conflict and displacement in affected populations (Patz & Kovats, 2002).

Loss of Infrastructure and Institutions. After extreme events (e.g., hurricanes, tsunamis, or earthquakes), infrastructure and institutions are often damaged or non-functional for extended periods of time. Two years after hurricane Katrina for example, only a third of child care centers

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and public schools were open in some areas and a major mental health hospital had not been replaced (Gyan, 2008). Access to healthcare, including mental health, is often compromised. Major shortages of psychiatrists, psychiatric nurses, psychologists, and social workers already exist in many communities. Low-income countries have 0.05 psychiatrists and 0.16 psychiatric nurses per 100,000 people, compared to 200 times more in high-income countries (World Health Organization, 2008a). With damaged infrastructure and insufficient access to schools, medical centers, and other institutions, individuals may be reluctant to return to their homes, prolonging problems of displacement, community fragmentation, and uncertainty.

Population Displacement. Rising sea levels and coastal flooding as well as other adverse environmental conditions such as droughts or disasters may cause further large scale population displacement or "environmental refugees". Today, about half of the world's population lives within 200 kilometers of a coastline (Creel, 2003). After the Tsunami of 2005, more than 400,000 people were displaced in Indonesia alone (United Nations Office for the Coordination of Humanitarian Affairs, 2006). As of 1995, at least 25 million have fled their homes for environmental and climate reasons and this number is projected to double by 2010 (The Human Security Network (HSN), 2007). The Red Cross estimates that more people are now displaced by environmental disasters than by war (International Federation of Red Cross Red Crescent Societies, 2002). Internally and externally displaced individuals lose ties with extended families, social networks, communities, and cultures (Lundberg, 1998). Population displacement and rapid urbanization can also increase tensions and the risk of conflict in host communities (The Human Security Network (HSN), 2007), resulting in psychological distress, social isolation, and depression (World Health Organization, 2008c). Indeed, various studies have reported an increased prevalence of domestic violence, suicide, substance abuse, and depression among people living in refugee camps (Lundberg, 1998; World Health Organization, 2008b).

Conflict and Instability. An increase in conflict and instability has now been recognized as another potential outcome of climate change (Busby, 2007), caused by scarcity of resources, crop failures, economic losses, and population displacement. In April of 2007, the United Nations Security council held its first debate on the impact of climate change on human security and peace (United Nations Department of Public Information, 2007). Regions that are already struggling with pre-existing unrest, poverty, unequal access to resources, weak institutions, food insecurity and poor health are at the greatest risk (Stott, 2007). In Africa, a year-long drought increases the risk of civil war the next year by 50 percent (Stott, 2007). In Uganda for example, the 20-year civil war with over 2 million internally displaced persons, has contributed to widespread PTSD and depression (Roberts, 2008). Violence and conflict are known to have devastating and profound mental health consequences that can impact communities for generations (Lundberg, 1998).

Loss of Social Structure and Community. Multiple social and economic stressors are likely to cause and reinforce one another, leading to cumulative effects on mental health and well-being. Extreme weather events, for example, result in numerous and enduring stressors. Disasters involve trauma from the initial event, subsequent uncertainty and anxiety, separation from loved ones, loss of income and property, disruption of routines, displacement, relocation, and rebuilding (Norris et al., 2002). Such events can fragment local institutions and structures including community, religious and social networks.

4) High-Risk Populations

Developing and Low-Resource Countries. It has been noted that developing countries, which contribute relatively little to greenhouse gases, are likely to bear the greatest burden of climate change (Parry et al., 2007). Environmental events in developing countries result in higher death rates and destruction than similar disasters in developed nations (EM-Dat Emergency Database, 2007). Out of about 600,000 deaths that occurred worldwide as a result of weather-related natural disasters in the 1990s, about 95% occurred in developing countries (World Health Organization, 2003). Contributing to this inequality are the lack of adequate resources, high structural vulnerability (e.g., less stable building structures and poor infrastructure), socio-economic and political conditions, differences in risk perception, inadequate disaster preparedness and response, agrarian practices (e.g. deforestation) as well as population density

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in 'at-risk' areas (Inter-Agency Standing Committee, 2007). The adverse effects of climate change may limit or even reverse improvements that have or are being made in developing countries (World Health Organization, 2003). The prevalence of acute and chronic psychological impairment following disasters is likely to be higher among communities with higher losses and low resources (Norris et al., 2002). Adequate mechanisms for evaluation, culturally informed treatment, and follow-up regarding mental health problems in such countries, however, are often lacking (Inter-Agency Standing Committee, 2007; Saraceno, 2007).

Women. Women are especially affected by climate change and environmental events (Fothergill, 1998; Aguilar & Quesada-Aguilar, 2008). Culturally demanded dress codes can compromise their ability to flee from a disaster area or increase their likelihood of being caught by debris (e.g., women wearing sari's in the South East Asian tsunami) (Kaul, 2007). Social prejudice can keep girls and women from learning to swim and riding bicycles, which severely reduces the chance of survival in floods (Oxfam, 2005). Natural disasters as well as conflict have also shown to result in increased domestic violence against women, and women are at higher risk for suffering from PTSD (Galea, Nandi, & Vlahov, 2005; Nowrojee, 2005). On the other hand, women can make a unique contribution to disaster preparedness and recovery due to their social networks and local community awareness (Enarson & Morrow, 1998; Aguilar, 2004). After the 1999 Orissa cyclone, many relief efforts relied upon women by giving them control over local resources as well as house-building grants and loans. This resulted in women's improved self-esteem and social status, as well as in the increased overall effectiveness of the relief effort (World Health Organization, 2003).

Children. Children are uniquely vulnerable to the impact of climate change since environmental stressors and disaster can disrupt critical stages of their mental, social, and physical development (Markenson, Reynolds, American Academy of Pediatrics Committee on Pediatric Emergency, & Task Force on, 2006). About 90% of the disease burden of malaria, diarrhea and under-nutrition, which can permanently impact development and growth (Parry et al., 2007) are borne by children under 5, mostly in developing countries (World Health Organization, 2008b). Children are also more severely affected by under-nutrition. During disaster or conflict, children may become orphaned or separated, which puts them are at increased risk for living on the streets, human trafficking, exploitation or being abducted into armed groups (Inter-Agency Standing Committee, 2007). Children as young as age five are cognitively capable of understanding the effects of disaster (Pynoos, Steinberg, & Wraith, 1995). Research suggests that children are more severely impacted by adverse environmental events than adults (Norris et al., 2002), thereby suffering from greater mental health and developmental problems (Vernberg et al., 1996), impaired functioning in family, school, and social environments, as well as stress-related illnesses (Weissbecker, Sephton, Martin, & Simpson, 2008; Williams, 2007). Chronic PTSD in children has been associated with increased risk for suicide, substance abuse, aggressive and violent behaviors, interpersonal problems, vocational difficulties, long-term changes in brain structure and function, and health problems later in life (Brown, 2005). Approximately 20% of the world's children and adolescents are estimated to have mental disorders or problems (World Health Organization, 2008a) and the effects of climate change are likely to increase this number.

The Elderly and People with Pre-existing Health Problems or Disabilities. The elderly and those with physical disabilities have special needs regarding their possible health problems or illness during disaster (IFRC, 2007). They often have to cope with sensory impairments (visual and hearing), cognitive problems, blood pressure variations, fluid and electrolyte imbalance, lower capacity for thermoregulation and limited mobility (National Child Traumatic Stress Network and National Center for PTSD, 2006). Being more dependent on caregivers or healthcare personnel puts this population at a higher risk during and after extreme weather-related events.

Ethnic Minority and Indigenous Groups. Scientific evidence suggests that both adults and children from ethnic minority groups are more likely to experience increased stress due to frequent relocation, slower recovery and more severe PTSD symptoms following disasters (Adams & Boscarino, 2005). Hurricane Katrina, for example, disproportionately affected people with lower SES and African Americans. Such disparities are often exacerbated by pre-existing inequities, cultural insensitivities of relief workers and organizations and by inadequate provision of aid or

other resources (Adams & Boscarino, 2005). Indigenous people who tend to depend on their physical environment for their livelihoods may lose their traditional ways of life (World Health Organization, 2008b). Forced displacement and urbanization may result in loss of community cohesion and culture as well as in increased mental health problems (World Health Organization, 2008b).

5) Vulnerability and Adaptation

There are several factors that increase vulnerability to mental health problems related to environmental changes and events. On the other hand, resilience, recovery, and adaptability can mitigate adverse effects.

Pre-Existing Factors. Individuals with pre-existing mental health or substance abuse problems, prior trauma or poor social resources are more likely to show severe and persistent stress reactions after an environmental event and are less likely to recover socioeconomically (Norris et al., 2002). High temperatures alone have been shown to exacerbate chronic mental illness (Kaiser, et al., 2001; Kovats & Ebi, 2006). In Australia, a recent study discovered a 7% increase in psychiatric hospital admissions during heat waves (Hansen, et al., 2008). Children with prior psychological problems such as anxiety (La Greca, Silverman, & Wasserstein, 1998; Madrid, Grant, Reilly, & Redlener, 2006), or academic difficulties (Vogel & Vernberg, 1993), are also at greater risk for mental health problems after disaster.

Exposure. Exposure to an adverse environmental event, such as the proximity, presence and perception of life threat, and the experience of personal loss or disruption of everyday events are considered to be the most critical factors predicting the severity and persistence of mental health problems (Norris et al., 2002). Exposure can also occur if individuals view negative media images surrounding an event. Research has shown that children exposed to such images can suffer more severe psychological stress reactions (Saylor, Cowart, Lipovsky, Jackson, & Finch, 2003).

Concurrent Stressors. In many countries, environmental changes and disasters are accompanied by concurrent or pre-existing conditions from poverty, rapid urbanization, civil unrest, or conflict (Inter-Agency Standing Committee, 2007; World Health Organization, 2008c). Individuals who encounter major stressful life events following a disaster are at higher risk for severe and persistent post-traumatic reactions and poor adjustment (Norris et al., 2002).

Characteristics of the Social Environment. Strong social support networks can buffer the effects of stress (Cohen & Willis, 1985) and can serve as an important resource during stressful events (Hobfoll, Freedy, Lane, & Geller, 1990). Among children and youth, the family environment is one of the most important factor in predicting recovery from disaster (Norris et al., 2002). Social support from family, friends, classmates, and teachers can mitigate the impact of disasters on mental health (La Greca, Silverman, Vernberg, & Prinstein, 1996). In turn, high levels of negative behavior toward children as well as parental distress can exacerbate post disaster distress (La Greca, Silverman, Vernberg, & Roberts, 2002; Proctor et al., 2007).

Resilience and Coping Efforts. Most recently, the emphasis has shifted from identifying vulnerabilities and what is missing in crisis, to considering people's own strategies for coping and adapting (Walter, 2004; Betancourt, 2008). Concepts such as resilience, post-traumatic growth, and spirituality have increasingly been recognized as important to individual and community recovery (Bonanno, 2004; Kalayjian, 2002; Tedeschi, Park, & Calhoun, 1998). Resilience, which is common among both adults and children, describes the capacity to survive and adapt within the context of significant adversity or crisis (Bonanno, 2004). Community resilience, an important component of disaster readiness, is comprised of economic development, social capital, information and communication, community competence, and adaptive capacity (Norris, 2008). Furthermore, spiritual well-being and post traumatic growth, which involves growing from stressful life events and addressing existential questions, may serve as protective factors during times of adversity (Janoff-Bulman, 2006; Tacey, 2004).

Recommendations

Climate change is likely to impact mental health and psychosocial well-being via multiple pathways, leading to new challenges and greater mental illness burden and suffering among affected communities. UN agencies, NGOs, governments, donors, academic institutions and civil society at large need to work together to reduce this increasing threat to global health. The projected impact on mental health and psychosocial well-being underlines the urgency of addressing climate change at all levels. Several implications for prevention, preparedness, mitigation, adaptation, response, and recovery related to climate change and adverse weather events are outlined as follows:

1) **Mitigating Climate Change.** Individuals and communities, especially those in countries with the highest carbon emissions, must have access to ways in which they can actively contribute to reducing climate change. Viable options for protecting biodiversity and ecosystems, access to public transportation or safe ways to bike or walk, can entail buying local produce, incentives to make use of renewable energy, and various other opportunities that help individuals reduce greenhouse gases. Living healthy and environmentally friendly lifestyles including physical exercise, a diet rich in plant-based foods and low in animal products and sustainable living practices can benefit both mental and physical health from the individual to global level.

2) **Promoting and Protecting the Right to Mental Health.** The "International Covenant on Economic, Social, and Cultural Rights" (ICESCR), ratified by over 150 UN member states, contains the "right of everyone to the enjoyment of the highest attainable standard of physical and mental health" (OHCHR, 2008). General Comment 14 specifies the provision of "appropriate mental health treatment and care" and outlines that "health facilities, goods and services" should be available, accessible, acceptable and of good quality (Committee on Economic Social and Cultural Rights, 2000). UN member states are obligated to respect, promote, and fulfill the right to mental health, which includes the implementation of domestic mental health law and policy as well as the provision of technical, administrative, and budgetary resources (Committee on Economic Social and Cultural Rights, 2000). Multi-lateral agencies and donors should provide technical and financial support to aid governments in fulfilling this right.

3) **Empirical Research and Projections.** Current projections have mostly focused on direct weather-related effects on physical disease such as malaria. Research must now examine more complex relationships that include social, economic and gender-sensitive variables (Aguilar & Aguilar & Quesada-Aguilar, 2008; McMichael, Woodruff, & Hales, 2006) and that estimate effects on mental health and psychosocial well-being. (World Health Organization, 2003). Such research should drive pre-emptive policies aimed at protecting the well-being of communities.

4) **Coordinating Efforts and Partnership Building.** Coordinated efforts must take place among NGOs, UN agencies, governments, civil society, health care workers, and academia to address psychosocial and mental health factors in the context of climate change.

5) **Building Capacity for Addressing Mental Health Issues.** Both specialized and non-specialized staff must receive training in mental health and psychosocial care (Lancet Global Mental Health Group, 2007). Local paraprofessionals (e.g. school teachers, nurses, first responders) must be trained in the basic principles of psychological first aid and in providing referrals to specialized staff if necessary. Staff that may be deployed during environmental events and is not familiar with local customs, must also be trained in evidence-based interventions and best practices that are culturally informed and gender-sensitive. Intervention packages consisting of management and prevention of mental disorders (World Health Organization, 2008c) should be prepared for countries who do not currently provide mental health services. Vicarious traumatization in humanitarian staff and other volunteers and health workers should be addressed via appropriate confidential referral mechanisms and by promoting self-care.

6) **Attending to Populations at Risk.** Special attention must be paid to populations at risk for the psychological effects of climate change. These include children, women, the elderly, the disabled, those with less access to resources, and those with pre-existing mental health or substance use problems (Lancet Global Mental Health Group, 2007). Providing aid to at-risk populations through parent and teacher training, advocacy, and community mobilization is essential (Brown, Cohen, Goodman, & Mannarino, 2004; World Health Organization, 2008c). In particular, it is necessary to strengthen women's participation in decision making at all levels of climate and disaster mitigation and response (Aguilar, 2004; Aguilar & Quesada-Aguilar, 2008).

7) **Increasing Resilience.** Building resilient communities must involve capacity-building, strengthening existing structures, creating new or reinforcing social networks and recognizing the value of local and indigenous community knowledge and perspectives, as well as increasing the availability of psychosocial resources and services (World Health Organization, 2008c). Strengths of specific social groups as well as talents and skills within the community must be identified and utilized. Individuals who are able to function, contribute to community recovery, and maintain their role during stress often cope better and experience less disability following a stressful event (Caplan, 1975).

8) **Continued Monitoring and Evaluation.** Mental health and psychosocial indicators and resources must be monitored and evaluated on a continuous basis. National governments have a responsibility, under the UN's Framework Convention on Climate Change (1992), to carry out formal assessments of the risk to their population's health posed by global climate change. This must include mental health issues. In addition, follow-up assessments and evaluations which incorporate mental health indicators and treatment outcomes must be conducted not only during the acute phase of environmental events but also in the following years (Inter-Agency Standing Committee, 2007).

9) **Disseminating Public Information.** Information on mental health and psychosocial issues, which is aimed at improving coping strategies and reducing the stigma associated with psychological problems or stress reactions must be disseminated to the general public. NGOs and others must actively challenge and educate community members regarding false beliefs or harmful practices. Media guidelines, advocating against the use of harmful images and for the broadcasting of accurate information, must be implemented. Stories of resilience must be included when reporting on disasters and/or events related to climate change.

10) **Providing Access to Mental Health Interventions.** Access to quality psychosocial and mental health services must be scaled up, especially to underserved and vulnerable populations (World Health Organization, 2008c). Mental health services must be integrated with primary care and other community health services (Prince et al., 2007). Since most groups suffering from distress respond better to people from within their own community, community support services should be given particular attention (Freedman, 2004; Hoffman, 2005). Interventions must be empirically based and culturally sensitive (e.g. Bolton et al., 2007) and follow recently developed IASC guidelines (Inter-Agency Standing Committee, 2007)..

11) **Creating Community-based response training.** Where possible, community-based training in the form of disaster response, first aid, urban search and rescue, and disaster mental health should be implemented in the community, using existing community training models used successfully in Japan, the United States, and elsewhere (Simpson, 2000; Simpson & Strang, 2004, World Cares Center, 2008).

12) **Community Building and Rebuilding.** NGOs and governmental organizations must encourage community building and rebuilding involving the preservation of local history and culture. Initiatives that inspire self-reliance and resiliency and promote psychological wellness should be promoted and supported (Inter-Agency Standing Committee, 2007). Special attention must be paid to rebuilding key community institutions and structures such as schools, places of worship and community centers. This may help individuals to

function in their roles and re-establish routines, which can reduce distress, especially in children. Furthermore, community interventions that may involve art, crafts, or performance and take local history, traditions, and customs into account may aid recovery in the affected population.

13) **Considering Different Cultural Perspectives.** All action priorities must be implemented from a multi-cultural and multi-ethnic perspective that is sensitive to specific developmental ages, cultures, and contexts and make the best use of local and traditional knowledge.

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Relevant Links

Global Mental Health Network
http://www.globalmentalhealth.org/

NGO Committee on Mental Health
http://www.mentalhealthngo.org

IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings
http://www.humanitarianinfo.org/iasc/mentalhealth_psychosocial_support

World Health Organization Information on Mental Health and Emergencies
http://www.who.int/mental_health/emergencies/en/

Statement submitted by the NGO Committee on Mental Health to the United Nations International Strategy for Disaster Reduction (ISDR) Conference, June 2007
http://www.preventionweb.net/globalplatform/first-session/docs/Others_submitted_Statements/NGO_Mental_model_Statement.pdf

Disaster Research Education and Mentoring Center (DREM)
http://www.disasterresearch.org/

Research Education Disaster Mental Health
http://www.redmh.org/index.html

SAHMSA
http://mentalhealth.samhsa.gov/dtac/

World Health Organization, Mental Health Gap Action Programme (mhGap)
http://www.who.int/mental_health/mhgap/en/index.html

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