

Summary of Recommendations from Each Chapter

Many of the chapters have a lengthy list of recommendations. In the interest of space, we are providing executive summaries here; but we strongly recommend that the complete text of recommendations for each chapter be read. They can be found at the hypertext links provided beneath each chapter heading. Each chapter has in actuality its own homepage where a great deal of information is listed: working group participants, supportive data, photographs, bibliographies and other material, all of which will be expanded upon in 2009.

Risk Reduction:

http://www.climatecaucus.net/risk_draft.htm



Edited By: Dr. David Stone, Director of ProAct Network, Geneva.

Email: david.stone@proactnetwork.org, **Marcus Oxley**, Chair - Global Network of Civil Society Organizations for Disaster Reduction.

Email: Marcus.Oxley@tearfund.org, **Larry W. Roeder, Jr., MS**. UN Affairs Director, World Society for the Protection of Animals.

Email: undirector@wspausa.org, lroeder@climatecaucus.net

To overcome the key challenges of climate change, the progress made toward disaster risk reduction must be expanded to address underlying causes and community-based initiatives, and then replicated across disaster-affected regions requiring a substantial investment in building capacities at the local level. For this to occur, a fundamental shift is necessary in the degree of significance placed upon the experience of at-risk communities and the root causes of their vulnerability to risks that are often generated far away from the community itself. Developing the necessary incentives to support these processes will be a critical issue facing both policy makers and practitioners, and one in which climate change can be considered both a major opportunity for international reform as well a major threat to global human security.

Attitude Change:

http://www.climatecaucus.net/attitude_change.htm



Edited By: Mary O'Neill Berry, Ph.D., UN representative of the International Association of Applied Psychology (IAAP) and Executive Vice President of Sirota Survey Intelligence,

Walter Reichman, Ed.D., Vice President of Sirota Survey Intelligence.

Email: mberry@sirota.com

- Focus particularly on people who have a high probability of championing the cause, thus reaching the most people with minimal effort. One such broad group may be that of religious leaders, who by virtue of their sheer numbers and positions of respected authority held within their organizations, may be especially well placed to exert positive influence on many of their followers.
- Know the values/attributes of the people who need to change (the change agents).
- Appeals for attitude change should have cognitive, emotional and behavioral components; depending on the audience, one appeal can be emphasized more than another.
- Create a message that is aligned with the values/attributes of the change agents.
- Respond to the need to change behavior in terms of shared values of family, religion, ethics and life sustainability.

- Over time, develop and promulgate a carefully-crafted repertoire of social marketing around the climate change issue and its mitigation.
- Emphasize that the issue of climate change is unique and different from other previous world problems.
- It constitutes a superordinate goal, requiring cooperation among many diverse peoples in order to reach resolution.
- Networks, formal and informal, with a wide geographical reach, will need to be built in order to ensure the involvement of a broad spectrum of people and ideas.
- Recognize types of and reasons for resistance, and address these as needed.
- Recognize that underlying the defensive behavior is anxiety about one's own role and what one will need to change about oneself in order to resolve the issue.
- Be supportive and respectful of people as individuals while emphasizing the continuing need for them to become active participants in the mitigation effort.

Biodiversity, Forestry and Conservation:



http://www.climatecaucus.net/bio_forest_conserve_rec.htm

Edited By: Dominique Bachelet, Ph.D., formerly Director of Climate Change Science
- The Nature Conservancy

Effective mitigation is predicated on the conviction that: immediate synergistic work is a necessity and not a choice; collaborative effort by all parties will be the most useful method of devising strategies that are conceptually relevant, technically possible, and effective. The importance of networking and collaboration beyond the traditional efforts cannot be stressed enough. Strategies that explore opportunities from all stakeholders will be stronger than can be devised by working in isolation.

While there will be a natural tendency to fight Climate Change and preserve existing niches, species, and systems, flexibility and realistic appreciation and acceptance of Climate Change in some form can produce greater benefits, and counterbalance the changes that will happen whether we judge them as negative or not, using our own species value system. The following are recommendations to this end:

- Encourage and facilitate collaborations to help translate new scientific insights into explicit conservation planning decisions.
- Develop direct feedbacks between researchers and site-specific conservation efforts.
- Identify gaps in knowledge that can be addressed by expert research teams. Promote science issues and research identified via place-based learning.
- Develop realistic goals for adaptation to evaluate ecological and socioeconomic tradeoffs among management alternatives, and to critically evaluate project outcomes.

War and Conflict:



http://www.climatecaucus.net/war_culture_draft.htm

Edited By: Judy Lerner, UN Representative for Peace Action,
Email: judyct12@aol.com

- Activate and raise awareness. Lobby and provide information to government, re: conflict over water, fossil fuel, fertile lands deforestation and its impacts on global warming.

- Make connections and point the way toward a Culture of Peace.
- Activate peace and environmental groups as well as other NGOs to coordinate their efforts on behalf of these changes.
- Emphasize change in lifestyle -- Conserve! Reverse disproportionate consumption of Earth's resources, particularly of energy by industrialized and emerging countries.
- Educate the community at large about the causes and dangers of climate change. Provide information to the community through meetings, seminars and other outreach techniques.
- Make expert use of the media.
- Most importantly, form collaborative efforts with other groups to strengthen the message.

Reducing the Negative Impacts of Vegetation Fires on the Environment and Humanity:



http://www.climatecaucus.net/fire_rec.htm

Edited by: Prof. Johann G. Goldammer, Ph.D., Coordinator at Global Fire Monitoring Center (GFMC) / Fire Ecology Research Group, Max Planck Institute for Chemistry

The current situation and expected trends are challenging the international community to collectively and collaboratively address the problems of climate change. The Global Fire Monitoring Center (GFMC), a non-governmental institution, founded in 1998, as a contribution to United Nations International Strategy for Disaster Reduction (UNISDR), serves civil society, governments, regional entities and international organizations - notably the UN, by developing policies and strategies to reduce the negative impacts of fire on the environment and humanity. The GFMC works through the UNISDR Global Wildland Fire Network (GWFN) and the UNISDR Wildland Fire Advisory Group (WFAG).

In 2006-2007, the GWFN responded to the demands of a number of countries to intensify national and international cooperation in fire management. International organizations (IEWP, GEOSS, FAO) were supported to develop a concept for a Global Wildland Fire Early Warning System, an assessment of the global fire situation and management capabilities, voluntary fire management guidelines, and a review of international cooperation in fire management. Within the Regional Wildland Fire Network, consultations were held to develop and implement procedures for bilateral and multilateral cooperation in fire management. The GWFN is challenging countries and the international community to support capacity-building programs and projects in wildland fire management at national and regional levels.

Gender:



http://www.climatecaucus.net/gender_equality_rec.htm

Edited By: Tara DePorte, Lower East Side Ecology Center, Phone: 1 (212) 477-4022, Email: tara@leseecologycenter.org Web: www.leseecologycenter.org and **Ulrike Röhr**, Director of Genanet, Berlin, Germany, Email: roehr@life-online.de. Web: www.genanet.de Berlin, Germany. Fax: +49-69-740842.

The current lack of attention to gender issues in climate policy is partly a reflection of the relative absence of social, behavioral and justice issues in general in the climate dialogue. Without a gender-sensitive method of analysis, it is impossible to determine the full set of causes and potential effects of climate change and variability, making it difficult to design effective measures for mitigation and adaptation. There is a need to act *now*, to put actions behind commitments, to hold the scientific community and governments accountable for the deployment of gender mainstreaming as a crucial key to unlocking the talents and capacity of men and women to fully exploit opportunities for adaptation, mitigation and sustainable development.

Recommendations on Policy Development and Governing Institutions

To bring the full benefits of gender mainstreaming to fruition, there is a need to refocus the discourse on climate change and variability so that it includes a human rights perspective. Integrating a rights-based approach to adaptation recognizes and takes into account women's and men's specific needs in addition to gendered components of human rights. Gender must be mainstreamed as a "cross-cutting" issue and a key consideration in climate change and variability policy. Otherwise "the quality of adaptive measures will be limited and successful implementation will remain doubtful."

Gender-sensitive methods of problem analysis, situation description and impact assessment need to be developed for climate change and variability contexts. Instruments such as gender impact assessment can already be applied and further developed in the process of application. For all instruments and measures, in local areas and regions as well as at the national and international level, impact analysis should be conducted regarding the situation of women and men and how gender justice and adaptation or mitigation measures can be mutually reinforcing.

Recommendations for Funding Mechanisms & Technology Transfer

Since women, both in developing and developed countries, are disproportionately affected by poverty, have less income and possess less wealth, they are more heavily impacted by higher energy prices. Most of the mechanisms to mitigate climate change and variability (e.g. CDM, REDD, Emissions Trading, voluntary carbon offsetting schemes, etc) are market-based. Women and men don't have equal access to property, money, funds and markets, and women are less likely to benefit from CDM and JI projects. Creation of markets geared towards greenhouse gas reduction tends to neglect other factors that constitute sustainable development, such as social justice, gender equity, or poverty reduction. The benefits of current market-based financing mechanisms exclude the majority of the world's poor, including women, as well as non-commercial sectors and applications. When analyzing REDD, CIFOR concludes that the most effective payments are not targeting sectors like women and Indigenous Peoples who traditionally conserve forests, but instead benefit those who are responsible for significant deforestation and who could be convinced through relatively minor compensation to refrain from further deforestation. In terms of technology transfer: the needs of women and men often differ; priorities are closely related to gender roles in society. Since women often lack access to technologies and information or the training to use them, their voices regarding those technological needs are often overlooked.

Recommendations on Biofuels:

A gendered perspective in the analysis of biofuels is necessary to understand men's and women's energy use and needs, and to ensure that biofuel initiatives fulfill the community's energy needs in an equitable manner. Energy services should respond not only to *which* type of energy is better for men vs women users, but should also enable women to *choose* which option better suits their needs, context and options.

Indigenous Peoples:



http://www.climatecaucus.net/indigenous_people.htm

Edited By: Moki Kokoris, MN, UN Department of Public Information
Representative for the World Federation of Ukrainian Women's Organizations,
Email: Moki@cloud9.net.

1. Develop seasonal and regular summits (webcast and archived) during which all participating indigenous peoples will:

- Consolidate, exchange, share and draw lessons from the views and experiences of other indigenous peoples around the world of the impacts and effects of climate change on their lifestyles and natural environments, including responses and adaptation tactics;
- Raise the visibility, participation and role of indigenous peoples in local, national, regional and international processes in the development of strategies and partnerships that engage local communities and other stakeholders in responding to the impacts of climate change;
- Analyze, discuss and promote public awareness of the impacts and benefits of programs and proposals for climate change mitigation and adaptation, and assess proposed solutions;
- Advocate effective response strategies taking into account the perspectives and traditional knowledge of the various cultures in conjunction with local, national, regional and international rights-based approaches;
- Engage these groups to assist in the collaborative development of both a science-based and traditional knowledge-based implementation infrastructure.

2. Seek a Post Kyoto-2012 process that addresses the following:

- International cooperation to support urgent action on adaptation;
- Specific means to address loss and damage associated with the impacts of climate change in the more vulnerable indigenous communities;
- Enhanced action in technology transfer and development of adaptation measures;
- Risk sharing and transfer mechanisms such as insurance;
- Innovative funding approaches to assist particularly vulnerable developing countries in meeting the costs of adaptation;
- Investment in research and monitoring programs through various local initiatives and observational networks.

3. Facilitate indigenous participation and input in key international processes and work programs related to the Convention on Biological Diversity, the UN Framework Convention on Climate Change, the Kyoto Protocol and others by:

- Developing specific case studies on local coping strategies and mechanisms for inclusion in the UNFCCC database created under the Nairobi Work Program on Vulnerability and Adaptation to Climate Change;
- Calling upon the IPCC to develop a future assessment of the impacts of climate change on indigenous peoples, and to urge the inclusion of traditional knowledge as well as the voices of these marginalized peoples in the decision and policy making process;
- Working with the research community, local indigenous communities, governments, relevant organizations, United Nations Environment Programme, the World Bank and international NGOs to encourage appropriate climate change decision-making;
- Establishing domestic and international indigenous community dialogue that would assist in the development of communication and education strategies that exchange and share information on the impacts, adaptive capacity and mitigation methods appropriate for specific unique regions.

From Ego to Eco: A New World View:

http://www.climatecaucus.net/spirit_rec.htm



Edited By: Prof. Scott Carlin, Ph.D., Long Island University.

Email: scott.carlin@liu.edu

Our task is to shift the focus of our awareness from ego, “I” as the center of the world, to Gaia, Earth as a living planet. With this shift, we begin to focus on harmonizing and balancing our own individuality with the requirements of Life. The world’s spiritual traditions are filled with valuable insights into how to effect this transformation.

- Buddhists emphasize the importance of meditation and compassion.
- Christians concentrate on the power of love in our life.
- Islam prioritizes responsibility to community.
- The Iroquois counsel that we consider the impacts of our actions on the seventh generation.
- The deep relational quality of life is referred to by the Lakota as ‘all my relations’; everything in the universe is a cherished relative.

The climate crisis requires many social responses. One set of responses is to see this process as a path of spiritual and emotional development. Be attuned to how your hope inspires others and how your love brings out the love in others. Help them to inspire and love. This is done through Education, Applications, and Best Practices Campaigns.

Livestock and Animal Welfare:



http://www.climatecaucus.net/livestock_rec.htm

Edited By: Jennifer Lanier, Ph.D., Animal Scientist with the World Society for the Protection of Animals (WSPA),

Larry W. Roeder, Jr., MS. UN Affairs Director, World Society for the Protection of Animals.

The Spread and Emergence of Animal Diseases

- Develop a comprehensive plan (e.g. health, disaster reduction) to deal with the migration of disease due to climate change;
- Develop positive animal welfare contingency plans to control zoonoses caused by climate change;
- Use vaccinations (e.g., rabies vaccines) as a control measure where appropriate in regions where disease is endemic;
- Improve biosecurity at animal production sites that also safeguard animal welfare; and –
- Limit transportation of live animals.

Farm Animals and Their Caregivers

- Require consultation and guidance from welfare scientists and experts when drafting climate change policy, such as how to reduce greenhouse gas emissions, agriculture management, mitigation strategies, and disaster response; -
- Include animal welfare policies in development programs, compare these programs to different climate change scenarios and include strategies for minimising the risk to animals from the negative effects of climate change; and-
- Conduct a thorough review of the impact of climate change on farm animals and their welfare, including increased risk of animal disease and starvation due to drought.

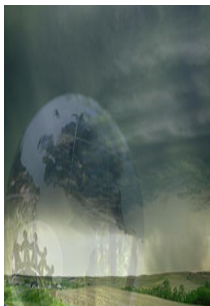
Effects of Farm Animal Agriculture on Climate Change

- Conduct a thorough review of the impact of the entire farm animal production sector on climate change and its wider societal impacts, including the various types of production systems (e.g. extensive, industrial, indigenous, intensive);
- Investigate the potential outcomes of shifting to more sustainable animal agriculture systems, such as organic or semi-intensive, and of their related effects on GHG emissions;
- Include strategies for husbandry (feed, genetic makeup, lifespan), management systems (organic, water-intensive, extensive, housed), waste output (manure), and reduction of the number of farm animals reared and slaughtered for food with the goal of cutting emissions on global, national, and regional scales;
- Implement policies to reduce development and expansion of all animal agriculture systems;
- Incorporate education about sustainable land use as a central part of poverty alleviation plans;
- Encourage low-intensity/density farming system policies and strategies; and –
- Develop sustainable adaptation techniques and farming strategies in collaboration with farmers, agriculture extension agents, women's groups, farm animal welfare experts and advocates, and political bodies.

Disaster Relief Programs

- Incorporate humanitarian animal relief bodies to improve response effectiveness and efficiency;
- Incorporate risk reduction plans into poverty reduction policy;
- Include early warning systems (e.g., Hyogo framework-based) in the animal relief communities to alert owners of animal populations;
- Integrate veterinarians and animal protection experts in disaster assessment teams;
- Conduct joint disaster training and exercises with humanitarian and animal protection experts;
- Require animal shelters and veterinary clinics to be structurally wind and earthquake resistant, and located at appropriate distances from storm surge areas where possible.

Impact of Climate Change on Mental Health and Psychosocial Well-Being: Guidelines for Action:



http://www.climatecaucus.net/mental_rec.htm

Edited By: Inka Weissbecker, Ph.D., NGO Representative to the United Nations of the International Union of Psychological Science (IUPsyS, in consultative status with

DPI and ECOSOC), Associate Research Scientist, University of Louisville Center for Hazards Research and Policy Development, MPH candidate, Harvard School of Public Health, Boston.

E. Wallace, LMSW NGO Representative to the United Nations of the World Federation for Mental Health (WFMH), New York.

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 but who are 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 that 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.

Sustainable Agriculture:



<http://www.climatecaucus.net/agri.htm>

Edited by: Joyce D'Silva, Compassion in World Farming,

Email: Wendy@ciwf.org.uk

1. Provide a reasonable living for those working in agriculture and contribute to the viability of rural communities

We need to reverse the current trend of monocultures of cropland and large, industrial livestock farms. Many small farmers have had to abandon their land and move to urban slums in an effort to support their families.

Governments and international agencies should support sustainable agriculture by helping small farmers to maintain and improve their holdings, should invest in training programs to upgrade farming skills and should encourage co-operatives for sharing the costs of equipment, such as harvesting equipment, and for marketing of produce.

2. Reduce as far as possible its negative impact on the environment and particularly the climate

Methods to reduce the environmental impact of agricultural land use and which promote soil fertility should be adopted, such as: conservation or zero-tillage, mixed rotations with cover crops and green manures, applying composts and manures to the soil, using agro-forestry, cultivating perennial grasses, and use of soil conservation techniques to prevent erosion.

The use of inorganic nitrogen fertilizers should be reduced and replaced with targeted and slow-release fertilizers. Integrated pest management should be adopted rather than pesticides, as these are also energy-intensive to produce and should be restricted, as far as possible, to emergency use. Ideally farms should grow their own animal feed and absorb their own animal wastes.

Animal agriculture is responsible for 18% of global anthropogenic greenhouse gas emissions, particularly methane and nitrous oxide – which both have a much higher global warming potential (GWP) than carbon dioxide.

With 60 billion farm animals used globally every year, and global meat production predicted to double by 2050, international organizations and governments must urgently address the issue of production of animal protein.

Sustainable agriculture must reduce large concentrations of livestock as well as reducing overall numbers of animals.

3. Protect biodiversity in all its aspects

On-farm solutions to maintaining and promoting biodiversity include minimising or abandoning use of toxic pesticides, maintaining or planting hedgerows and wide borders around crop-land, preserving agricultural wetlands and planting trees, which can also be used to provide shelter for free range pigs, cattle and chickens, promote better air quality and are vital to bird life.

Governments should invest in research and support for organic farming which can have a beneficial effect in maintaining and promoting biodiversity and which promotes the health of the soil.

With a third of livestock species under threat, farmers should be encouraged to rear traditional or local breeds of animals, which are often hardier and well suited to local conditions. In the transition phase (towards sustainable farming), farmers should be assisted in finding premium markets for products from such animals.

4. Protect the welfare of farm and working animals

In industrial “factory farms” the animals are often unable to carry out normal behaviors and are kept in confined, often overcrowded conditions. Sustainable agriculture must be sustainable for the animals, too, as they are sentient beings, capable of suffering.

International development agencies and governments should promote higher welfare farming. Farm animals should be kept in conditions which promote their health and welfare, preferably with an outdoor range for grazing or foraging and for exercise. Indoor housing should provide material such as straw, wood shavings or rice husks as bedding material.

Working animals are frequently worked too hard and often suffer from hunger or thirst, parasitic diseases and sores.

Schemes to allow farmers on low incomes to access veterinary care for livestock and working animals should be a priority for governments and development agencies. They should also assist farmers with marketing produce from higher welfare, non-industrial farms.

5. Produce the kind of food which will contribute to healthy and affordable diets for both humans and farm animals.

Meat and dairy are expensive commodities to produce, can have adverse impacts on global food and water resources, can damage the environment, including the climate, and can end up contributing to high rates of certain non-communicable diseases in humans. In addition, large concentrations of animal numbers in intensive farms provide ideal conditions for transmission and mutation of zoonoses (diseases transmitted from animals to humans) and viruses.

Governments and international agencies must tackle the growing obesity crisis, as the “western” diet, with its high proportion of meats and dairy products, spreads globally. Related conditions such as type-2 diabetes, certain heart conditions and cancers are on the increase, causing much human suffering and a massive strain on medical and health resources.

There is sufficient research to show that a plant-based diet high in fruits and vegetables, with minimal red meats is best. Governments and intergovernmental agencies should promote such diets. One method would be to promote contraction and convergence policies, where those on western diets cut back their consumption of meat and dairy, whilst allowing those, e.g. in sub-Saharan Africa, to increase their consumption, with both converging at a level which is sustainable for human health and for the planet's resources and the environment.

Around a third of the world's cereal harvest and over 90% of soya is used for animal feed. This land could be used to grow crops for human food. In addition, feeding cereals to animals is an inefficient way to feed people. It takes 4.5 plant-derived calories to produce one calorie of egg or milk and 9 plant-derived calories to produce one calorie of beef or lamb meat.

With a further use of cereals for biofuel production, there is a growing global food crisis as the price of cereals is becoming unsustainable for the poor. Livestock production is also water-intensive, especially the indoor, intensive systems. Reducing livestock numbers would free up food crops to provide food for the swelling human population.

In the future, cereals and soya should be grown primarily for human consumption, with animal farming being undertaken in smaller farming units where farmers can take care of and pride in their livestock and where environmental and human health can be protected and promoted.

Tipping Points:



http://www.climatecaucus.net/tipping_draft.htm

Edited by: William Gellermann, Ph.D., Email: gmann@earthlink.net

The climate change crisis is overwhelming from our separate, individual points of view. It is our conviction that few if any of us have the ability to cope with it as individuals. But collectively, WE can cope. The question is: how can we develop our ability to act collectively? The Tipping Points Working Group recommends reading *Global Mind Change*, by Willis Harman (former head of the Institute of Noetic Sciences, founded by Edgar Mitchell, the astronaut), which describes an alternative that is at least conceivable (as evidenced by many of the people interviewed by Russell DiCarlo in *Towards A New World View: Conversations at the Leading Edge*). In brief, Harman suggests that each of us can choose how we will live our lives, based on the self-interested ego or the interest of our global community as experienced through intuition. The possibility of intuitive guidance is grounded in the idea that WE are all connected by spirit. We also recommend following your intuition's guidance about what you can do to contribute to a collaborative response to the crisis we all face.

Global Fresh Water Crisis:



http://www.climatecaucus.net/water_rec.htm

Edited By: Prof. Narendra Kumar, Secretary General, Global Forum for Disaster Management. Email: nkchoudharymumbai@yahoo.com, **Lalit P. Chaudhari, Ph.D.**, Vice President, ISDR, India. Email: clkp123@yahoo.com,

Larry W. Roeder, Jr., MS, Former Policy Advisor on Disaster Management, IO/SHA, US Department of State. Email: roederaway@yahoo.com

- Each nation should create a National Water Commission to provide guidance to sub-national authorities on water policy.
- The UN should create a Water Policy Commission to develop global guidelines and funding opportunities for new water protection and storage technologies to ameliorate the global water crisis.
- NGOs who build their own HQs should invest in water recycling technology and use sustainable construction materials such as bamboo in lieu of rainforest woods.