Peace – DKG International Conference 2014

Unity Harvey

Believing that peace is an ideal to be enjoyed or pursued, I believe that prevention of conflict is preferable to the second best option of management by consultation, mitigation and adaptation to troubles that may inevitably arise.

I believe that Climate Change is the most serious threat to world peace and would refer those who doubt global warming to the magazine, "Geographical, - Climate Change, Here… and Now…"[1] I believe that water and wetlands are the key to our understanding. Water is essential to life and wetlands are our water store. They are found at any place where water meets land i.e. rivers, lakes and shorelines. They are at the centre of the world's water, air, weather, geological, soil, ecological and biological cycles. About 50-60% of the world's wetlands have been drained already.[2]

Scientists are good at predicting temperature change in the air and the causes of such rises, principally man-made greenhouse gases such as carbon dioxide and methane that are expensive to recapture. Water cools the atmosphere through contact absorption and evaporation. Carbon capture from the atmosphere happens naturally by absorption in the sea, through oxidation of rocks and sediments and through various terrestrial ecosystems such as forests and grasslands. Wetlands absorb large amounts of carbon through high primary production of living things and the deposition of rotting material in the anaerobic areas of their waterlogged soil. This makes them carbon sinks, one of the most effective eco-systems for storing carbon. The process is complex but overall it is thought that the long-term negative effect of methane emissions is lower than the positive effects of carbon dioxide sequestration. Peat lands are the most space effective carbon stores containing 30% of global soil carbon on only 3% of the earth's land area.[3]
At the 2010 Copenhagen Accord, it was hoped to restrict world temperature rises to 2° above pre-industrial levels by the end of the century, but indications are that it will already be higher, increasing the risk of catastrophic results. Global mean surface temperature is predicted to rise between 1.4°C and 6.4°C between 2000 and 2100.[4]

Rainfall, replenishing our rivers, lakes and aquifers giving us our fresh water, is harder to predict scientifically. Only 2.5 % of the world's water is fresh and 1.5 % of that is locked up in ice or underground. Only 1% is accessible.[5] 1.2 billion people lack safe drinking water and 2.6 billion have no adequate sanitation.[6] 70% of fresh water is used for agriculture and of that at 15-35% is already unsustainable. [7]

"There are two types of aquifers: replenishable, a permeable layer of rock above the water table and an impermeable one beneath it, and non-replenishable aquifers with the impermeable layer on top of the permeable one, also known as fossil aquifers. When these are depleted, the maximum rate of pumping is automatically reduced to the rate of recharge or refill. For fossil aquifers - such as the vast U.S. Ogallala aquifer, the deep aquifer under the North China Plain, or the Saudi aquifer - depletion brings pumping to an end." [8]

There are warnings that water will become scarcer in the sub tropics and will increase at high altitudes and the tropics. Other regions will experience various increasing impacts of climate change.[9] There are likely to be more extreme weather conditions, more periods of drought and flood. Water causes erosion and deposits of rock and silt, changing the landscape often for the worse although there may be benefits such as nutrient re-cycling. Water extraction may cause land contraction too, and even subsidence. Projections of sea level rise vary between 0.5-2.0 metres. Even a 1-metre rise will be catastrophic without adaptation.[10]

With climate change, there are threats to water availability and food security. There are threats of ecosystem change with loss of biodiversity on a genetic, species and landscape level. Inland water, tropical and marine areas are at extreme risk of habitat change, over exploitation and pollution. We enjoy biodiversity aesthetically, spiritually, educationally and for recreation but it essentially it

provides our livelihoods, in different ways but essentially around the world. Biodiversity provides for ecosystem services, goods and the economy. Variety can provide more possibilities for any changes necessary for a sustainable future.

Overall there will likely be lack of security, more disease, mass migrations of people and increasing potential conflict. Even in temperate latitudes if the increase in temperature is over 3°, any earlier advantages to agriculture will be reversed.[11]

World population is increasing and it is expected that there will be about 2 billion more people by 2050. Countries like Africa and those in South Asia with emerging economies will see a "youth bulge", a big rise in the numbers of young people all with aspirations for an improved standard of living. Those in Europe, China, Japan and India will have a larger population of older people who will need care in a time of slowing growth. Projections for the total population vary. Overall it may continue to increase but could start leveling off in 2050 and may even start decreasing.[12] "Young" countries may face pressures to provide for education and find employment for the young as well as water scarcity. Migration could actually help but "the brain drain could sap productive potential from source countries. In host countries a sudden influx of people could erode social cohesion and fuel nationalism. Yes, migration can help but it must be managed well." [13]

Prevention, mitigation or adaptation? All three.

We need both technological and behavioral changes.

1. We could use less energy; minimize the production of greenhouse gases. Power that is essential can be produced in an environmentally friendly way. Most of the CO_2 is produced when we burn coal and fossil fuels to make energy but this energy could be found another way. People could pay for the harm they cause. This would help cut down damage and provide an incentive to develop low carbon technologies. "Reducing subsidies and properly taxing energy use can be a win-win prospect for people and the planet."[14] Solar power, I believe, does least harm.
2. In our consumer society, we could try to consume less; make things to last, reuse and recycle. On a smaller scale but not insignificantly, cattle make much methane and we could eat less meat.
3. We could use water wisely and not waste it. The ecological, institutional and instrumental Dublin Principals support: -
   a. whole river basin management across states or countries; shared management by those involved with agriculture, industry and households.
   b. shared management by stakeholders at all levels of society; state, private, civil and especially by women.
   c. improved water quality and allocation using incentives and economic principles.[15] Some people think that it is immoral to charge for water but fair pricing may be crucial to success.
4. We need to hold water back. We can, for example, maintain and plant trees on uplands to prevent water runoff, collect rainwater for use in our buildings and gardens, and use porous hard surfaces for roads. We need sustainable urban drainage systems, not letting it run off directly to the sea through our drains.
5. We should drain no more land especially peat bogs. We should enlarge lakes and build new ones; prevent environmental degradation, eliminate pollution and control alien species. More research into carbon capture in wetlands could make for successful intervention policies.
6. We could make water-holding bays for times of flood, plant appropriately in river estuaries and build salt marshes to prevent erosion of the coasts.
7. We should conserve all wildlife; both plant and animal, for who can predict what will be needed for a sustainable way of life in the future.

For the School Curriculum I believe that there should be increased cross curricula focus on water, wetlands and climate change, so that there is greater understanding of the problems. Consensus

for essential changes will be difficult to achieve in a peaceful manner but people of all ages everywhere are more likely to agree to these changes if they understand the reasons why; less likely to quarrel and fight. I believe that wetlands should be promoted in literature as beautiful places rather than cold lugubrious ones as they have so often been in the past.

Most importantly I believe that Geography should be given higher priority in schools and universities. Geography ties together all the many strands of knowledge from both arts and sciences that are involved in climate change. Risks and repercussions of climate change including prevention, mitigation and adaptation need to be thoroughly researched and understood to achieve a sustainable, good standard of living. I believe that we need people with top academic knowledge and skills; geographers with a broad multilateral outlook as politicians, negotiators and lawyers to enable world peace.

Water and food shortages already occur and are likely to become more severe with climate change. I believe that we need to understand the local, regional and world problems. We need to find new technologies to alleviate difficulties where possible but primarily we need to work together not exacerbating the problems; we need to take care of our water wherever it is and share resources to enable peaceful living.

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See also Janine Felson, CTAUN 31.01.2014 Conference, DKG News Page 7