

ADAPT OR DISAPPEAR

LIAN OSBOURNE

CLIMATE CHANGE AND ITS NEGATIVE IMPACT ON many of the world's numerous ecosystems is an unfortunate reality facing our planet today. Indigenous peoples in particular are the most vulnerable to the harsh developments of climate change due to the fact that they are already marginalized in their societies, lacking the resources needed to effectively cope with the many obstacles to their continued survival. Recognizing this fact the United Nations Permanent Forum on Indigenous Issues (UNPFII) seventh session's² final report highlighted the necessity for the need to combine the current and historical knowledge of indigenous peoples with the scientific analysis of climate change in order to create effective adaptation strategies³.

What however is meant by adaptation? According to the UN Framework Convention on Climate Change (UNFCCC) adaptation options are those that "allow or encourage human and ecological systems to adjust or adapt to new global climatic conditions or events, to offset negative impacts and to take advantage of positive impacts that could result from global climate change⁴." In simpler terms adaptation is a coping mechanism, a way for populations to come to terms with an ever-changing planet so that they can continue to live. Tied to the notion of adaptation is the concept of resilience, which "refers to the capacity to recover after disturbance, absorb stress, internalize it, and transcend it⁵." There is no escape from it, the world's indigenous people's must remain resilient to climate change and adapt to its many changes.

Australia's Aboriginals are one such group of indigenous peoples that has a great deal to overcome. One needs only to take a brief overview of Australia's environmental problems to see that what the Aboriginal community faces is quite severe. Firstly, although Australia is already an arid continent it is expected to get even hotter with the average temperatures likely to increase by 1.3°C by 2010 and by a swelter-

ing 6.7°C by 2080 according to the UN Intergovernmental Panel on Climate Change (IPCC)⁶. In recent years the entire country has experienced reduced rainfall leading to severe drops in reservoir levels and the shrinking of the Murray and Darling rivers⁷. Understandably this development has

had a negative impact on agriculture with farmers experiencing reduced crop yields and rising irrigation expenses⁸. The reduced rainfall has also led to a decrease in the overall animal and plant diversity on the continent⁹, a sad development considering the many unique species that call Australia home. Climate change also spells disaster for many of Australia's national treasures such as the Great Barrier Reef, the upland rain forests, and the alpine snow country¹⁰. The threat posed to these ecosystems is tremendous and the tourism dollars tied to such attractions, which is the welfare for many Australians, is in peril. Increases in the frequency and the intensity of storms and cyclones as well as rising sea levels serve to endanger the lives and well being of many of Northern Australia's island inhabitants¹¹. It is clear to see that there are many problems presently facing climate change in Australia, and more specifically its indigenous peoples, yet what can be done to combat these climate change problems?

Perhaps the secret weapon in the fight against climate change is the concept of effective adaptation. As Claude Lévi-Strauss said, "the physical world is [often] approached from opposite ends

[...] one is supremely concrete, the other supremely abstract¹²." The concrete approach that Lévi-Strauss is referring to would be the scientific and analytical method, which is the dominant approach in understanding climate change today. While grounded in empirical facts and figures, this singular approach will not effectively combat all of climate change's problems. In order to do this a more holistic approach needs to be undertaken, one that involves the abstract approaches that Lévi-Strauss alluded to. Traditional ecological knowledge, "a cumulative body of knowledge,

→ | ALTERNATIVES

"I am convinced that climate change, and what we do about it, will define us, our era, and ultimately the global legacy we leave for future generations. Today, the time for doubt has passed".

BAN KI-MOON

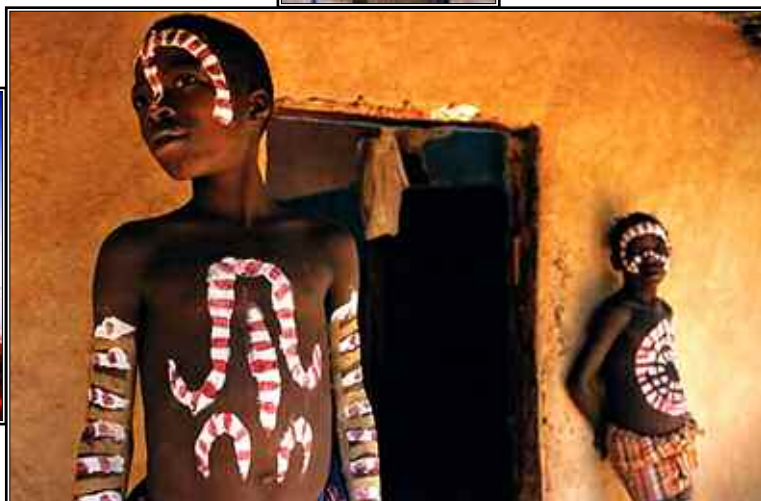
practice and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment¹³,” is one of these abstract approaches. It is only by combining traditional indigenous knowledge with modern scientific technology, as the 2008 report of the UNPFII stated, the problems that indigenous people face because of climate change can be solved. As expressed by anthropologist Alexander Alland Jr. organic systems have two forms of adaptation¹⁴. The first, internal adaptation, stresses the entire system as a singular unit, with all of the component parts of the system working together as one striving for homogeneity. The second form is external adaptation. This last form focuses on the fit of the system in to the greater global context and stresses variation. It recognizes that many different tactics need to be employed in order to combat climate change. This lends further support to the two-pronged approach to addressing climate change, the so-called effective adaptation apparatus that involves indigenous and scientific knowledge bases.

Examples of effective

subscribe to certain policies that will preserve their environment. Any behavior that is potentially destructive to the group has to be approved by the group’s decision makers before it is undertaken. Due to the special knowledge that is ascribed to those that hold positions of power in the group their decisions are seen as final. Another step is to increase the importance placed on symbols and group identity because it is hoped that by doing this a stronger group consciousness will emerge that will be able to surmount any obstacles that are put in its way. For indigenous people in particular there is a close linkage to their environs since many of their cultural practices and religious practices are rooted to aspects of their immediate surroundings. Thus stressing certain rituals has a twofold purpose, attempting to rectify environmental changes and brining the group together.

The Torres Strait Islands, in Northern Australia, present a wonderful opportunity to showcase how effective adaptation methods can work in practice. As a region, Northern Australia’s 100,000 aborigines face a great deal of climate change related problems¹⁸. Many of them are

health issues such as the rise in cases of



adaptive policies would be when concerned parties construct policies that are locally crafted and continuously socially reinforced by those who will use and implement the policies; or when locals use policies that come out of a traditional ecological knowledge base helping them to respond positively to any environmental feedback¹⁵. It is when the marriage is made between the indigenous and the scientific that lasting, positive and beneficial policies will be created.

Linked to the process of effective adaptation is the need for psychological balance. The field of environmental sociology recognizes the fact that “physical environments can influence (and in turn be influenced by) human societies and behavior¹⁶.” The relationship between the land and the people is a symbiotic one, with each impacting the other mutually shaping the development of both. When indigenous societies feel threatened by environmental changes they can at times adopt defensive structuring in order to protect themselves and their beliefs¹⁷. One step of defensive structuring is the subordination of the individual to the group. In times of hardship it is far easier to have authoritarian control over members to make sure that all group members

malaria, dengue and heat stress. Popula-

tions also face severe loss of food sources due to flash floods, spells of drought, as well as more intense incidents of brush fires. The Torres Strait Islands, a grouping of over 270 islands dotted across 22,000 square kilometers between Australia and Papua New Guinea are home to some 8,000 inhabitants¹⁹. The majority of the Torres Strait islanders live only metres away from the beach, sometimes less than one metre above sea level. This means that the expected rise in sea levels of between 1-2 metres would be disastrous, wiping out dozens of populated homelands and islands²⁰. As a York Island, one of the Torres Strait Islands, Chairman Mr. Donald Mosby said in response to climate change skeptics, “You don’t have to be a scientist, not when you see metres of beach disappearing every week²¹.” Over the next fifty-year period the rising sea levels would also flood over four million hectares of costal freshwater wetlands ruining the livelihoods of the barramundi fishers and the communities they support²².

If things are as bad as they appear what is being done? As one Australian climate expert said, “Indigenous people don’t see the land as distinct from themselves in the same way as

maybe society in the south-east (of Australia) would. If they feel that the ecosystem has changed it's a mental anxiety to them. They feel they've lost control of their "country" – they're responsible for looking after it²³." Thus the North Australian Indigenous Land and Sea Management Alliance (NAILSMA) was created out of a need "to integrate indigenous considerations into actions about the management of Aboriginal owned lands and waters within the institutional and political framework of the Australian nation state²⁴." NAILSMA accesses resources that match the practical needs of the region to ensure that the management of land and seascapes by Aboriginal people in the north are carried out in partnership with relevant businesses, institutions, and supporters. This reliance on a variety of parties complicates Alland's external adaptation model's multi-tactic approach to climate change. And like the UNPFII's findings, NAILSMA's philosophy is to "sustain the capacity of indigenous people in the north to live on and remain in their traditional estates using the intellectual knowledge of tradition and that of the modern and innovative research and technology²⁵." NAILSMA seeks to create a balance between old

and new knowledge to ensure the survival of the Torres islanders and other Northern Australian Aboriginal groups.

One of their most successful programmes is the Dugong and Marine Turtle Management Project (DMTP), which focuses on the cultural management of turtles and dugongs by recording catch sizes, monitoring nesting sites, as well as providing training and education to the local population on the management of these and other ocean resources²⁶. The DMTP is revolutionary for the county since the basis of the project's goals and aspirations come directly from the traditional owners of the resources, the aboriginal people. So far it has been extremely successful in raising awareness for the plight of the animals by having outreach groups, including community elders, visiting local schools to educate the next generation on better resource management. Another program that falls under the NAILSMA umbrella would be the Indigenous Water Policy Group (IWPG), which was created to represent indigenous rights, responsibilities and interests

in water across Northern Australia²⁷. By having this group liaise with the Australian government it is hoped that any water polices that are made for the region would be successful since all concerned stakeholders would have a direct interest in policy formation. Yet another program is found in the Arnhem region of Northern Australia, the Arnhem Land Fire Abatement Program (AFLA)²⁸, that seeks to understand

the indigenous knowledge of land management such as the lighting of small or patchy "cool" fires, which lead to far less damage to unburnt vegetation when the seasonal wild-fires come around. It is hoped that by mastering this technique new strategies will be developed that could reign in the trouble wreaked by destructive bushfires that blaze across the rest of the country. Showing just how much modern science has to learn from traditional environmental management strategies.

The psychological impact of climate change on the Torres islands peoples cannot be underestimated as well. The threat posed to numerous graveyards, monuments, and sacred sites by storm surges is real, and if destroyed would severely crush the spirit of the islanders. As pointed out before, the link that the aboriginals

feel by living 'on country' makes them have a heightened sensitivity to environmental change due to the impacts they experience on their mental and physical wellbeing because of the disturbance of their cultural practices²⁹. Once such practice that faces change is *Ailan Kastom*, a unique Torres Strait culture that combines traditional island beliefs with Christianity. *Ailan Kastom* dictates how the islanders manage the land and sea by governing how and who harvests natural resources, as well as placing seasonal and age restrictions on the hunting of certain species³⁰. Of particular concern to *Ailan Kastom* is the continued care of the dugong and turtle populations since the two animals appear frequently as totemic animals, in folk stories, and in numerous songs. The creation of a Torres Strait Ranger Force³¹ linked with the DMTP has ensured the continued safety of the precarious turtle and dugong populations; not only safeguarding the species but also protecting the belief system of the island's aboriginal peoples.

QUICK FACTS
INDIGENOUS PEOPLES AND CLIMATE CHANGE

Indigenous Peoples have a critical role in the global efforts for climate change, they

- ✓ Are custodians of natural resources critical for carbon sequestration
- ✓ Are repositories of traditional knowledge on climate change adaptation
- ✓ Have a proven capacity to adapt to local climate changes
- ✓ Number approximately 300 million people (5% of the World's population)
- ✓ Customarily own, occupy or use 22% of the World's land surface (WRI)
- ✓ Presently manage 11% of the World's forest lands (FPW)
- ✓ Maintain within their lands and territories 80% of the Planet's Biodiversity (WRI)
- ✓ Are located in or adjacent to 85% of the World's Protected Areas (IUCN).

Indigenous peoples

- ✓ Have contributed the least to global warming by traditionally leading a "low carbon" way of life
- ✓ Historically and currently, play a fundamental role in the protection of forests and conservation of biological diversity
- ✓ Have a customary set of institutions, rules and practices for the use of land and natural resources in a sustainable manner
- ✓ Have cultural as well as political mechanisms to restore sustainable use of land and natural resources when practices are unsustainable
- ✓ Are among the poorest people globally
- ✓ Are heavily dependent on lands and resources for basic needs and livelihoods: food, fuel, shelter, clothing, medicine, etc.
- ✓ Live in ecosystems particularly prone to the affects of climate change: polar regions, humid tropics, high mountains, small islands, costal regions, and semi-arid deserts
- ✓ Are becoming the first wave of "climate change" or "environmental" refugees.

In order to prepare the world's indigenous people's to adapt to climate change a great deal needs to be done. Yet, what should be kept in mind is that any programmes or projects created must be a partnership between priceless traditional knowledge and modern scientific advances. It is only with a balance of these two parts that adaptation policies will be effective. As Stephanie Long, a spokesperson for Friends of the Earth International said, "Adaptation should be pro-poor, and protect ecosystems, livelihoods, and human security. Community-based adaptation provides the best opportunity to ensure that adaptation projects are culturally, technically and socially appropriate³²." NAILSMA and its many initiatives highlights this statement beautifully, by seeking to harmonize the indigenous with the scientific to create truly beneficial and equal partnerships that aim to ease the transition of Australia's Northern aboriginal people's into the reality of a climate changed world. Hopefully other indigenous communities around the world can replicate the lessons learned in Australia so that they too can properly adapt to climate change while maintaining as much of their traditional ways of life as possible.

SELECTIONS FROM THE
*Declaration of Indigenous Peoples
 on Climate Change*
 THE HAGUE, NOVEMBER 11-12, 2000

1 - Earth is our Mother. Our special relationship with Earth as stewards, as holders of indigenous knowledge cannot be set aside. Our special relation with her has allowed us to develop for millennia a particular knowledge of the environment that is the foundation of our lifestyles, institutions, spirituality and worldview. Therefore, in our philosophies, the Earth is not a commodity, but a sacred space that the Creator has entrusted to us to care for her, this home where all beings live.

2 - Our traditional knowledge on sustainable use, conservation and protection of our territories has allowed us to maintain our ecosystems in equilibrium. This role has been recognized at the Earth Summit and is and has been our contribution to the planet's economy and sustainability for the benefit of future generations.

3 - Our cultures, and the territories under our stewardship, are now the last ecological mechanism remaining in the struggle against climate devastation. All Peoples of the Earth truly owe a debt to Indigenous Peoples for the beneficial role our tradition subsistence economies play in the maintenance of the planet's ecology.

4 - Climate change is a reality and is affecting hundreds of millions of our peoples and our territories, resulting in famine, extreme poverty, disease, loss of basic resources in our traditional habitats and provoking involuntary displacement of our people as environmental refugees.- Concepts, practices, and measures such a plantations, carbon sinks and tradable emissions, will result in projects which adversely impact upon our natural, sensitive, and fragile ecosystems, contaminating out soils, forests and waters. In the past, even well intentioned development policies and projects have resulted in disastrous social and ecological consequences. We cannot accept any concepts, projects or programmes that ravage our territories or deny, limit, or restrict our fundamental rights and freedoms.

Change 2007: *Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* p. 515. Accessible at: <http://www.ipcc-wg2.org>.

⁷ Friends of the Earth International. November, 2007. "Climate Change: Voices From Communities Affected by Climate Change," p. 5. Accessible at: <http://www.foeorg.au/resources/publications/climatjustice/climat-testimonies.pdf>.

⁸ *Ibid.* p. 6.

⁹ *Ibid.* p. 4.

¹⁰ *Ibid.* p. 7.

¹¹ *Ibid.* p. 6.

¹² BERKES et. al., *Rediscovery of Traditional Knowledge as Adaptive Management*, p. 1251.

¹³ *Ibid.*, p. 1252.

¹⁴ ALEXANDER ALLAND JR., 1975, "Adaptation," in *Annual Review of Anthropology*, 4(1), p. 69.

¹⁵ BERKES et. al., *op.cit.*, p. 1259.

¹⁶ DUNLAP, RILEY E. and WILLIAM R. CATTON, Jr., 1979, "Environmental Sociology" in *Annual Review of Sociology* 5(1), p. 244.

¹⁷ SIEGEL, BERNARD, 1970, "Defensive Structuring and Environmental Stress" in *The American Journal of Sociology*, 76(1), p. 11.

¹⁸ BEEBY, ROSSLYN, 26 November 2007, "Australia's northern Aboriginal communities will bear the brunt of climate change, with increases in water-borne diseases and loss of tradition food sources, and international report says" in *The Canberra Times*. p. 1.

¹⁹ Friends of the Earth International. *op. cit.* p. 6.

²⁰ BEEBY, ROSSLYN, *op. cit.* p. 2.

²¹ Friends of the Earth International, *op. cit.* p. 6.

²² BEEBY, ROSSLYN, *op. cit.* p. 2.

²³ Friends of the Earth International, *op. cit.* p. 6.

national, *op. cit.* p. 6.

²⁴ NAILSMA, 19 April 2008, "NAILSMA Discussion Paper 2020 Summit," p. 4. Accessible at: http://www.nailsma.org.au/nailsma/downloads/nailsma_2020_0408.pdf.

²⁵ *Ibid.*

²⁶ NAILSMA, 2007, "Dugong and Marine Turtle Management Project Overview and Update" in *Kantri-Latif*, p. 6. Accessible at: <http://www.nailsma.org.au/nailsma/downloads/Kantri-Latif-issue-3.pdf>.

²⁷ *Ibid.* p. 12.

²⁸ *Ibid.* p. 22.

²⁹ GREEN, DONNA, 2006, "Climate Change and Health: Impacts on Remote Indigenous Communities in Northern Australia" in *Climate Change Impacts and Risk*, CSIRO Marine and Atmospheric Research Paper 012 (Melbourne: Climate Impact Group, Division of Atmospheric Research, CSIRO).

³⁰ GREEN, DONNA, 2006, "How Might Climate Change Affect Island Culture in the in the Torres Strait?" in *Climate Change Impacts and Risk*, CSIRO Marine and Atmospheric Research Paper 011 (Melbourne: Climate Impact Group, Division of Atmospheric Research, CSIRO).

³¹ NAILSMA, 2007, *op. cit.* p. 30.

³² BEEBY, ROSSLYN, *op. cit.* p. 3.

¹ United Nations Secretary General Ban Ki-moon, 24 September 2007.

² The UNPFII was held between April 21st and May 2nd 2008, with the theme of "Climate Change, Bio-Cultural Diversity and Livelihoods: The Stewardship Role of Indigenous Peoples and New Challenges."

³ UNPFII, 2 May 2008, "UNPFII: Report on the Seventh Session," in *Economic and Social Council Supplement* no. 23. Accessible at: http://www.un.org/esa/socdev/unpfi/documents/unpfi_7session_report_advance.pdf.

⁴ BRAAF, R., HOWE, W., and R. TAPLIN, 1995, "Climate Change: Integrated Assessment Process," in *Climate Impacts Assessment: Development and Application of Climate Change* (Melbourne: Climate Impact Group, Division of Atmospheric Research, CSIRO).

⁵ BERKES, F. COLDING, J. and C. FOLKE, 2000, "Rediscovery of Traditional Knowledge as Adaptive Management," in *Ecological Applications*, 10(5), p. 1252.

⁶ Relative to 1990 temperatures; refers to areas 800 km from the coast; central Australian increases are expected to be greater. (IPCC. 2007. Climate