



APCEL Climate Change Adaptation Platform

2015 Paris Agreement and the Climate Turn: How can we adapt to Climate Change?

by

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Despite America's 'withdrawal' under President Trump which has yet to be realized (Tollefson, 2017), the 2015 Paris Agreement on Climate Change by over 190 countries is a triumph of global proportions that demonstrates a willingness of most countries to place climate change on their global agenda. The 2015 Paris Agreement marks the climate change turn for the global community. Except for a few countries, the Paris Agreement underscores the global recognition of the anthropocentric nature of climate change (O'Leary & Dalby, 2016; Darwall, 2013) that defines the Age of the Anthropocene (*Scientific American*, 2016). Accepting that human beings are culprits of climate change (Wagner & Weitzman, 2015), the underlying global response is the belief *Homo sapiens* will deliver Gaia from the "tipping point" (Flannery, 2006) of perceived universal disaster. Despite the noble goal of keeping temperatures at 2⁰C below pre-industrial levels, the reality is that if the Paris Agreement is implemented, global warming will be at 2.6⁰C. The difficulty of reaching a common agreement meant finding the lowest common denominator amongst states and in the process provides an agreement which is inadequate in addressing the challenges at hand. At the operational level, the developed countries recognized the financial problems and hence at the Hamburg G20 meeting in July 2017, French President Macron acknowledged the need for another meeting in December 2017 to deal with the financial aid packages for countries (*The Straits Times*, 2017).

While countries have three intricate, interrelated options (coping, adaptation, and mitigation) for tackling climate change, most developing countries will benefit when the Paris Agreement and UNFCCC can separate these options so that developing countries can concentrate on coping and adaptation mechanisms. What adaptive measures do developing countries embrace? While debate continues about whether climate change is for real (Mann, 2016) and the nature of its environmental impacts (heat waves, droughts, floods) (Orr, 2016; Wagner & Weitzman, 2015), the most obvious climate change challenge facing states currently is sea-level rise.

As many cities, ports and settlements are currently located along coastal areas prone to sea-level rise, governments should begin major redevelopment schemes away from the current coastal areas. Given the legal implications of such major landscape changes, governments might have to take a more pro-active national policy in prioritizing the welfare of the common good. In some developing countries where the land tenure system is grounded on 'customary laws' based on 'usufruct' rights, the evacuation of people will require sensitive negotiations.

Since hundreds of millions of coastal residents may have to be evacuated to new sites away from the coasts, governments would need to embark on new development. There is no better time than now for developing countries to reinvent themselves to redevelop cities, industrial towns, transportation networks and settlement zones based on new 'green development' programs and

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underscore a steady state economy. According to Ulrich Beck (2016) the world is not just changing –it is undergoing metamorphosis; which in the case of climate change translates as a radical transformation and altering of the way people live, conceptualize and act upon the world they live in. Hence governments and communities cannot rebuild cities and embark on redevelopment according to outmoded human-centered planning principles, capitalistic production and consumer thinking.

New planned schemes can act as new growth poles for eco-development and eco-cities. Specifically, new industrial estates, communication hubs and agrarian based settlements can be developed with the latest green technologies, energy efficient systems, recycled water, and alternative forms of energy systems. William McDonough (2017) posits a three-point prescription for future green cities: i) move away from building “linear” to “circular” cities in terms of recycling waste; ii) create “positive cities” where everything is powered by the sun, and iii) and build cities based on ‘diversity’ where organisms fit into local ecologies that incorporate natural and cultural history.

Once settlement schemes are located away from coastal areas, the government planned and assisted migration to new development areas can take place as another form of adaptation. The mass migration of people needs to be orchestrated on a large scale especially in island communities. Archipelagic countries and regions like Indonesia, the Philippines, the Caribbean and Pacific Islands need to put in place development programs in areas not affected by sea-level rise. Where island communities cannot adapt to sea-level rise, plans must then be put in place for long range, transnational permanent migrations. Such massive migrations within and between countries will require the assistance of national signatories in the Paris Agreement.

Depending on varied locations and different ecosystems, climate change impacts can create both winners and losers within and between countries (Cooper, 1978). For example droughts and heavy precipitation (flooding) have been around throughout human history and influenced the expansion and collapse of civilizations (Linden, 2007; Ponting, 2007; Whyte, 2008). These cyclic weather changes create other collateral damage such as food insecurity, malnutrition and starvation, diseases and illnesses, economic costs and political instability. There is increasing evidence that abnormal environmental occurrences over history had more to do with the El Nino cycles (Medhaug, et. al., 2017) and mini climate permutations (Rosen, 2014) than the current conditions of climate change. Governments in developing states should take heed of the prevailing viewpoint to use development programs as a form of adopting radical reforms and adapting to changes in climate.

The current worry is whether climate change added to El Nino cycles will increase the frequency of intense floods or prolonged droughts. In many regions (Africa, China, India), prolonged drought conditions are enhancing desertification. There is a need to find ways of arresting desertification by tree planting, bringing irrigation to dry land areas, and promoting new forms of agriculture which are adapted to little precipitation and dry conditions. In China, lessons can be learnt of how the government is actively reclaiming the Gobi desert along the Silk route through tree planting, agricultural expansion, irrigation systems, expanding transport networks and industrial townships.

Due to the uneven landscape geomorphology, heavy precipitation creates floods in flood-prone places in many countries and cities. Even in fully forested areas, floods are taking place. The reason is that precipitation is now sometimes more intense and extended in time spans and forested areas cannot absorb the huge deluge of rainfall, thereby leading to floods. Floods are the boon and bane of varied communities in many countries. In Asian agricultural countries, annual floods resulting from river overflows are seen as a bonus to farmers because they fertilize the soils. Cambodia, Laos and Vietnam experience annual flooding (around October and November) from the Mekong which is a welcomed blessing for farmers.

In urban areas, serial flooding is unwelcomed because of its destruction to property, restrictions to transportation and impact on economic activities. Given the higher densities of urban population, the impact of urban floods is becoming more costly. In many urban areas in the world, floods can and should be prevented. Many current cities have outmoded drainage systems which were built for less precipitation. However with higher rainfall, the current drainage systems cannot absorb the increased rainfall and floods result. Cities thus need to redevelop their urban drainage systems to cope with new rainfall levels. Singapore floods in Orchard Road in 2011, is a case in point, when the Ministry of the Environment officials acknowledged “ponding” occurrences due to inadequate drainage.

Within many indigenous communities, human-nature relationships underscore human adaptations to environmental challenges. Anna Peterson (2001) reminds us of the lessons we can learn understanding the cultures of supposed ‘primitive’ indigenous communities and Asian religions (Buddhism, Hinduism, Shintoism, Zen Buddhism, Taoism). Societies collapse if they cannot adapt and other communities survive because of successful adaptation. Jarred Diamond’s (2006) study puts empirical testimony to what Charles Darwin stated over a century ago that the lessons of human evolution lie in the ability for communities to adapt to varying ecosystems. Scientists observe that climate change is moving so fast, the rest of biological nature has difficulty adapting to the changes. Hence as Elizabeth Kolbert (2014) argues we are experiencing before our eyes the sixth mass extinction of organisms.

In Southeast Asia, for example, communities have learnt to adapt to varying ecosystems. Indigenous communities have built houses on stilts to withstand constant floods and to avoid pests. Houses were constructed from vegetative materials (bamboo, wood, leaves) to protect residents from severe harm during earthquakes and volcanic tremors. Peasants in Thailand use big earthen jars to collect rain water which is saved for the dry months. Amongst swidden cultivators, a large variety of crops, staples, tubers, vegetables, and fruits are grown as an insurance against environmental problems; swidden cultivators are some of the most independent communities in Southeast Asia (Scott, 2009). Over centuries of trial and error, indigenous communities in the tropics have displayed an amazing ability to adapt to environmental challenges; we might have to relearn the lessons of the past in order to survive in the future.

The Paris Agreement should not go down a blind alley and become a perfunctory document, an idealistic policy and merely an ineffective Agreement. The Paris Agreement should operationalize and put in practice feasible agendas. Several focused multilateral ‘action’ groups from the global community should be established. Each of these ‘groups’ should comprise states, universities,

corporations, banks, think tanks, multi-disciplinary experts, administrators, city mayors and NGO personnel to deal with specific climate change challenges such as: urban impacts, sea level rise, water and food insecurity, biodiversity preservation, alternative energy, flood control, droughts and heat waves. One such action group could follow Timon McPhearson's (2016:166) call to form a "global urban scientific body" to address the post-2030 agenda. Such a body will develop Future Cities at two levels: i) Find urban commonalities which can be shared, researched and addressed; ii) accept differences arising from regional and local variations.

Taken to its extreme end, climate change will lead to the tragedy of the global commons if we procrastinate cooperation and feasible solutions; it's imperative that under the umbrella of the Paris Agreement, the Gaian community works for the common good by engaging and sharing global and regional common pool resources.

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