

## **Development and Climate Change – A UNEP Perspective**

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## **I. Introduction**

It is gradually dawning on many governments that climate is crucial for development but it is taking a little longer for these same governments to factor climate into development planning. In particular climate related policies necessary for effective development planning are not necessarily in place, especially in developing countries. Specifically, even though climate and its variability has major impacts on livelihoods, the associated climate risks remain poorly managed. The issue is likely to be exacerbated by anticipated climate change.

Historically, national development plans, poverty reduction strategy papers and indeed even sectoral strategies in climate sensitive sectors do not address the complications that climate risks introduce into development planning and strategies. Pressure is however building, especially in the donor community, and through Multilateral Environment Agreement(MEAs) for climate change to be fully factored into national development planning. This is in large measure because in its third assessment report, the Intergovernmental Panel on Climate Change (IPCC & WGI report) points out that there is a human impact on the global climate system distinguishable from climate variability. The IPCC Working Group II report further points out that the impacts of climate change are likely to be greatest in developing countries especially in Africa. In development parlance, sustainable development over a longer term is compromised by flooding, droughts, food and water supply shortages as a result of climate change. Many of the developing countries subsist on rainfed Agriculture. Economies in such countries are therefore poised for serious losses as climate change impacts become even more severe than they appear to be so far.

As noted earlier, the IPCC points out that climate change impacts will be more severe in developing countries and notably the least developed among them. Africa is home to more than three quarters of the LDCs, and therefore climate change impacts will be more severely felt in Africa. There are many reasons for this, and we can just mention a few: (i) the limited capacity for Africa to respond to these impacts due to poverty; (ii) the over dependence on rain-fed agriculture which makes these countries most susceptible to the impacts on the climate system notably the changes in the precipitation regimes (iii) weak or lack of early warning systems especially the absence of preparedness plans for climate related disasters.

In this presentation, I want to suggest that there is an urgent need for climate policies to be incorporated in national plans. We want to also emphasize that national plans without appropriate climate strategies and policies will lead to failure of such plans. To address these issues, we will look at climate in two stages: (i) climate variability and (ii) climate change. In addressing climate variability we want to suggest that policies to respond to vulnerability to climate variability will provide robust basis to address climate change.

In discussing climate change, we want to look at what policies need to be put in place to address climate change at the national level, and how such policies ought to also address the nexus between environment and development.

As an international organization, we are clearly concerned with the international regimes and how these regimes might facilitate development at national level or indeed stimulate policies at the national level to address climate change.

## **II. Climate Variability and Development**

Although present global attention is focused on climate change, we have failed at some level to justify the debate on climate change and prescriptions for addressing it because we have not fully exploited the lessons that national climate variability affords us. Specifically, droughts and floods continue to cause havoc from time to time and communities continue to suffer, because policies and strategies to address these extreme events have not been put in place. UNEP has in the past undertaken a number of studies in the context of the World Climate Impacts Assessment and Response Strategies Programme (WCIRP) and Thrust 3 of the Climate Agenda on Assessing Climate Impacts and Response Strategies to Reduce Vulnerability. We have undertaken studies on the El Nino Southern Oscillation and how it impacts on seasonal rains and provided information on the policies that need to be put in place. The 1997-98 El Nino event was the subject of a post-facto study by UNEP, NCAR, UNU on how governments responded to the event, and suggestions on what needs to be put in place to forestall the socio-economic disruption that results from such climate related disasters. The study established that there were a hierarchy of problems associated with the interphase between policy and science. The real problem appeared to be that, whereas the climate scientists predicted the event, the responses were hedgy as policy makers did not invest in preparedness measure because historically such forecasts had not been accurate in the past. The other problem was limited capacity to respond. The donor community only responds with resources often when the situation is hopelessly desperate. This is what happened in many of the countries in the study.

As is the case in many of such disasters, the environment is seriously compromised. There was considerable damage to the sewerage systems seriously endangering urban dwellers. Floods inundated the shores of lakes and river banks

eroding the sloppy areas and destroying crops. This specific event brought to fore the clear link between climate and development planning.

UNEP has also undertaken studies of the impacts of droughts and floods in Kenya, Brazil, Bangladesh and highlighted the economic significance of these extreme events on socio-economic systems including on ecosystems. In all cases, policy options have always been made for governments to put in place in order to ensure that future events can be: (i) informed by past experiences (ii) improve on preparedness measures as a pre-condition for effective response.

As mentioned earlier, we highlight these issues related to drought and floods – naturally occurring phenomena with a limited certain degree of predictability – in order to suggest that policies to respond to these natural disasters will serve the same policy makers well when, as now predicted by the scientific community, climate change occurs. It is now becoming progressively clear that climate change is already impacting on the natural climate system and may indeed be exacerbating the frequency and intensity of extreme climate events such as the tropical cyclones, floods and droughts. We shall address the policy needs after discussing briefly the issue of climate change. It suffices to point out that extreme climate events in the context of climate variability has from time immemorial exacted economic damage to societies whenever they occurred and constitute important basis for planning for climate change and indeed suggesting some policies to respond to the eventual impacts of climate change.

Let us just flag a number of the impacts of droughts and floods resulting from the El Nino or La Nina events, tropical cyclones or sand storms in the case of arid to semi arid areas. The first impact is disruption of farming activities. This in turn impacts on food security and consequently on economic well being of the country. The other impacts are on ecosystems. During droughts for example,

forest fires are rampant destroying habitats and impacting further on biological diversity. The arid and semi-arid regions are characterized by frequent and strong wind due in large measures to day time convection. These very strong winds also physiologically affect plant growth and the strong wind carries with it particles that cause damage to plant tissue. The wind storms can therefore seriously impact terrestrial cover. Dust storms, sand storms also carry away top humus soil that lead to landscape degradation and ultimately desertification. These are just a few primary impacts. There are more secondary and tertiary impacts which will follow from these primary impacts.

### **III. Climate Change and Development**

The Intergovernmental Panel on Climate Change has, in its last two reports continued to harp on the fact that there is discernible human influence on the climate system, which influence will lead to climate change with serious consequences on ecosystems and other socio-economic systems.

In a Special Report, the IPCC (1998) discussed the regional impacts of climate change. It assessed the vulnerability to climate change of all the regions of the world. Largely because of poverty, recurrent droughts and overdependence on rain-fed agriculture, Africa stands out as most vulnerable to climate change. The polar regions are next in terms of potential impacts of climate change with expectation that there will be major ecological changes as a result of a warmer climate. Specifically it is expected that there will be substantial loss of sea ice in the Arctic Ocean. All these are likely to impact severely on the indigenous people in the Arctic region. Reports so far show that these impacts are being felt by the polar bears and that as habitats begin to change in response to climate change, the stress is being felt by the polar bears as an example. The shifts in ecosystems are expected to especially affect the local communities in the polar regions. Perhaps

the most vulnerable regions regardless of their location are Small Island States. Many of these states are in the tropics except for Malta and Cyprus. The most susceptible ecosystems to climate change are coral reefs. In as much as some of these coral reefs exist on the limits of their temperature tolerance, sea level rise and associated elevated sea water temperature can lead to coral bleaching and impair their reproductive functions. There is of course the reality that some of the islands might be completely submerged as a consequence of sea level rise, and where submergence does not occur the climate change impacts on fisheries, food and fiber production will occasion an even great stress on societies in these states.

We have made reference only to these three regions in Africa – Small Island States and the Polar regions. This is not to say that the other regions will not be affected. Climate Change will have global consequences. However, some regions in the industrialized world are better prepared to respond through either adaptation or mitigation. Many of the poor countries will have considerable difficulty adapting to their changes and the ramifications for the economies of these countries are far reaching.

#### **IV. Policy Imperatives to Address Climate Variability and Change**

Lester Brown (2003) points out that - *“we are releasing carbon dioxide (Co<sub>2</sub>) into the atmosphere faster than nature can absorb it, creating greenhouse effect. As atmospheric Co<sub>2</sub> levels rise, so does the earth’s temperature. Habitat destruction and climate change are destroying plant and animal species faster and faster than new species can evolve, launching the first mass extinction since the one that eradicated the dinosaurs 65 million years ago. And he adds - “throughout history, humans have lived on earth’s sustainable yield – the interest from the endowment. But now we are consuming the endowment itself”*. In

economic parlance, we are consuming principal along with the interest. The end result will be bankruptcy!

The World Commission on Environment and Development stated categorically that - *“if needs are to be met on a sustainable basis, the Earth’s natural resources must be conserved and enhanced. Major changes in policies will be needed to cope with the industrial world’s current high levels of consumption, the increase in consumption needed to meet millennium standards in the developing countries and expected population growth”*.

With such a forewarning, it is important to examine what policies we need to put in place to address the issue of climate and development. How might climate best assist in addressing pressing economic needs and what policies need to be put in place to respond to climate related disasters, and address the serious expected consequences of climate change.

First of all, we have observed that many countries are adversely impacted by extreme climate events like droughts and floods. Second, we observe that climate change appears to be impacting on the natural climate system and accentuating the frequency and or intensity of extreme events. It is generally believed that the effects of climate change are already manifest today.

Climate is essential for economic well being of many countries. However, for the positive impacts to be felt, specific policy initiatives are necessary. In the first place, at the country level there must be a conscious effort to exploit climate resources fully. To do so, meteorological services must be enabled to provide the services needed for factoring into national plans. Specifically, clear policies to address the perennial data sparseness is important. Meteorological observational networks must be brought to acceptable levels so that information inferred from

such data is both accurate and usable for national planning. Specifically, seasonal forecasts need to be improved in terms of reliability. Policies to improve the science of seasonal forecasts need to be put in place. In Africa, the International Research Institute (IRI) for climate prediction in collaboration with African Meteorological Services are addressing these issue. Likewise, all national plans must of necessity include climate considerations. To forecast a specific rate of economic growth in a particular year, one must examine the seasonal forecasts for the rains since and shortfalls in these rains may necessitate importation of foods and hence divert resources away from other economic priorities.

In order to prepare for climate extremes, there is a need for climate related disaster preparedness plans. These preparedness plans must be continually re-evaluated against vulnerability assessments. In particular, policies must be in place to ensure that climate-extreme-vulnerable communities are assisted to reduce their vulnerability and reassessment to identify new vulnerable communities. Given the dynamic nature of vulnerability, policy makers need to be constantly vigilant. In particular, communities need, as a matter of policy, to be constantly reminded of avoiding vulnerable areas or made aware of their vulnerability and what to do in the event of an extreme climate event. A Vulnerability mapping is in this respect important for national planning and development.

Early warning system is essential in any country in respect of climate extremes and change. Because climate touches on many of the critical economic sectors, early warning systems must be all inclusive and roles clearly delineated. But an early warning must (i) be early and (ii) warn if it does not do both of these, it will most likely not survive the first climate disaster. It is most likely not to have the essential attributes to be an effective early warning system.

A national disaster management policy with a climate disaster management component is necessary. Such a policy moves away from reactive to proactive approach in disaster management. It amounts to putting in place a risk management that incorporates preparedness and mitigation. Unfortunately, in many of the developing countries eliminate disaster management only means response to an event. Nothing exists on the ground to prepare communities to respond to a drought or a flood. It is also important to empower vulnerable communities to better manage their risk to climate change.

Other long term policies and strategies have been reported in national communications to the UNFCCC in respect of coping with climate change. These include research into drought-resistant crops, land use policies that avoid cleaning of forests and steep slopes for agricultural activities, and afforestation to increase land cover.

The United Nations Framework Convention on Climate Change and its Kyoto Protocol are the key international policy instruments that address the mitigation of climate change. Presently the debate continues through the two track approach agreed in Montreal in 2005 in seeking a more effective approach to reducing greenhouse gases. The dialogue on the way forward under the climate convention is obviously important because it gives everyone a chance to hear out the United States' arguments because with the world's largest emitter of greenhouse gases not on board any agreement is at best ineffective. In the context of the Kyoto Protocol, the post 2012 commitments debate is an important one. So far it is clear that the present commitments while important as a start, are woefully inadequate given the rate of increase of greenhouse gases in the atmosphere. The key concomitant discussions on adaptation and the significance of the market mechanisms give rise to a need for specific national policies.

It needs to be pointed out that development pathways influence vulnerability to climate change including adaptation and mitigation. Likewise climate change, adaptation and mitigation policies do have significant impacts on sustainable development. With regard to policies to address climate change, it is possible to have climate change policies that are an integral part of sustainable development policies. It is also possible, as has emerged in response to the UNFCCC and Kyoto Protocol. The first lot might include energy efficiency initiatives while the introduction of carbon taxes, shift in energy sources from fossil fuel to renewable energy are examples of the latter.

Perhaps the preferred policies ought to be those that integrate adaptation and mitigation perspectives into development policies. This has the advantage of making sure that development paths are more sustainable. The conflict for developing countries is that many of them have a priority for development that is limited by resources, hence environmental considerations where costs would be higher are easily compromised. I want to suggest that this dilemma is one that was clearly foreseen in the Climate Convention where resources were to be availed to developing countries to address some of the climate issues. This indeed has become the critical issue as we see increasing emissions from key fast developing countries which need to address emission question sooner than later. The catch, I believe is that the industrialized countries must lead from the front. It would be much easier to ask India, China and Brazil, or any other developing country for that matter, to take on emission reduction commitments, if developed countries such as the USA could point to progress in emission reductions in recent times. Instead we are seeing increases in emission in some of the industrialized countries rather than reductions.

Notwithstanding these differences and as pointed out earlier, there are policies that are beneficial in their own right and needs to be put in place at the

national level to address climate change even as they enhance the chance for economic development.

We are committed to some climate change no matter what mitigation strategies we put in place. In this respect, measures need to be put in place at national level to address and adapt to climate impacts such as sea level rise and its impacts on coastal areas, ecosystems and biodiversity etc. In doing all these, it is important, at the national level, to have a coordinating structure and a policy to put into effect recommendations emanating from such a “ **Climate Change Coordinating Committee**”

## **V. Conclusions**

We have in this short discussion striven to point out that climate variability gives countries adequate opportunity to put in place policy instruments and strategies that could serve the same countries well when incipient climate change takes hold. We have noted that indeed climate change impacts are already manifest and that more impacts are inevitably going to occur. The countries most likely to be severely impacted are developing countries and especially the least developed among them. These impacts will be the result of the gradual changes in the climate system and in particular more intense floods, droughts and tropical storms.

The observed changes are already taking a toll on the economies of developing countries and seriously impacting millions of people especially the poor all over the world. It is therefore very urgent that policies are put in place to address both climate variability and climate change. The policies related to climate change as I see it need to be informed by the UNFCCC and the Kyoto Protocol. We have noted that there are policies which make sense in and of

themselves – the win-win type – and these should be put in place as soon as possible because they infact have clear economic spin off. As we are committed to climate change, the need for support to the most vulnerable regions to address climate change through adaptation will take centre stage. A north-south partnership is a *sine qua non* requirement for effective adaptation to climate change. There is some progress, but it is slow. Policies to address the impacts of climate variability and change must begin to be put in place especially in the most vulnerable countries to forestall future suffering of millions of poor people presently at risk from these impacts.

## **VI. References**

1. Intergovernmental Panel on Climate Change (IPCC) 1998: *The Regional Impacts of climate change: An Assessment of Vulnerability* Cambridge University Press, U.K. 517 pp.
2. Sivakumar, M.V.K., R. P. Motha and H. P. Das, Eds 2005; *Natural Disasters and Extreme Events in Agriculture: Impacts and Mitigation*, Springer, Berlin, Germany 367 pp.
3. Lester Brown 2003: *Plan B; Rescuing a Planet under Stress and a Civilization in Trouble*, W.W. Norton & Co., N.Y. 285 pp.
4. The World Commission on Environment and Development 1987: *Our Common Future*: Oxford Univ. Press – Oxford, U.K. 383 pp.