

## CLIMATE CHANGE SUSTAINABILITY CHALLENGES AND OPPORTUNITIES

Globally, climate change is threatening the security of food, water, and eco-systems and under business-as-usual (BAU) is likely to result in risks of abrupt and major irreversible changes. Carbon emissions have already pushed up global temperatures by nearly one degree Celsius relative to the mid-19<sup>th</sup> century. If no action is taken on emissions, there is more than a 75% chance of global temperatures rising between two and three degrees Celsius over the next 50 years. There is a 50% chance that average global temperatures could rise by 5 degrees Celsius some time next century under BAU.

Developing countries are earliest and worst hit by climate change. We believe that we could develop a model for developing countries to turn crisis into opportunity – to use climate change mitigation strategies to drive economic growth and reduce poverty in their countries. There is a body of opinion suggesting that there is a choice between rapid economic growth and climate change mitigation. However, we argue that this is not a choice, but that action on climate change is actually an imperative. And embarking on climate change mitigation strategies can drive economic growth in an inclusive manner from a community and society perspective.

Unless the world acts more responsibly, climate change is expected to severely impact food security and water security, thereby impacting the livelihoods of people, particularly those in the poorer sections of society.

Sustainability challenges in relation to climate change can be looked at from 3 perspectives:

- Global / regional / country
- Corporate
- Community

### GLOBAL / REGIONAL / COUNTRY

From a global / regional / country perspective, the first challenge is to have an agreement on carbon emission reduction targets. While there is broad agreement that global temperatures should not be allowed to increase more than 2 degrees Celsius as beyond this the impact may be irreversible. This would mean that the key countries would need to set carbon emission reduction targets - currently these targets are mostly voluntary and not legally binding, and common consensus is that the current targets would still increase the global temperatures above 2 degrees Celsius.

The impact of carbon emission reduction targets on economic growth is another challenge that countries are grappling with. Developing countries, especially, argue that while the developed countries have achieved significant economic growth in the past while depleting natural resources, they should now not dictate how the developing countries should grow going forward. Hence, developing countries would like developed countries to have much more significant emission reduction targets to make up for their excesses of the past, while developing countries adopt a low carbon growth strategy going forward.

Connected to this is how will low carbon transition be financed. Financing low carbon transition remains a challenge among countries as less polluting countries are insisting that the polluting countries that caused this in the first place pay for the 'clean up'. This is another raging debate among countries, with the developed world resisting to pay a much larger than proportionate share of the investment that would be required to combat climate change.

An effective market mechanism is a critical ingredient for climate change initiatives to work. The Clean Development Mechanism (CDM) under the Kyoto Protocol was one such mechanism but it is on its last legs and is due to lapse in 2012. The countries are working towards a post Kyoto Protocol market mechanism but there is no consensus on what this would look like. Some countries would like to continue with the market mechanism as under the Kyoto Protocol, while others are challenging its achievements over the last few years and suggesting a revamp.

It is widely noted that innovation will be critical for the migration towards a low carbon world. The green wave brings with it new demands and challenges that require the latest in high tech and will demand fast turnover of new equipments. These innovations will allow technology to play the pivotal role in energy security, water security and food/land security. But there are currently no incentivising frameworks and mechanisms for such innovation, as well as a way to finance these.

## CORPORATE

Most promising, is the growing interest of individual corporations to create environmentally sustainable business models. Soon we feel they will become the precedent, as opportunities of economic benefits, brand value and competitive advantage become increasingly apparent among participants of the new green wave. In fact, not aligning business strategy with this wave could lead to market drawbacks as new emission compliances and regulations enter the market. A corporate not only has a role to play with an internal transformation, but also in advancing the global transition taking place.

We see eco-corporations having the following qualities:

- Drives ecological competitiveness for economic sustainability through the six forces of ecological competitiveness – LEWWAC (Land, Energy, Waste, Water, Air, and Carbon)
- Holds itself to an Ecological Balance Sheet alongside its Economic Balance Sheet, measuring performance against their consumption of key resources and opportunity costs.
- Contributes to the ecological betterment of the industry as well the community at large
- Reduces environmental burden while creating new growth opportunities and revenue streams.
- Strives for new technologies within their field which optimizes resource allocations and low carbon options.
- Leverages the eco-enablers (innovation, finance, new eco-skills and capabilities, and ICT) to the maximum for low carbon growth

However, we see the following challenges for corporations as they transition towards becoming eco-corporations:

- Understanding and mitigating the risks associated with climate change on the business - this could be in terms of markets (ie certain countries are expected to face the impact of climate change more strongly), supply chain (ie certain raw materials and suppliers would be impacted more than others) and products (eg high energy intensive products would come under pressure, etc)
- Integrating low carbon strategies within the overall business strategies of companies - currently it is mainly compliance driven, but leading companies are thinking proactively about how low carbon approaches can actually be a business opportunity for them
- Ensuring own operations are carbon efficient - this is an advanced area for most large companies and they have taken significant measures to make their direct operations more eco-efficient
- Ensuring sustainability in the value chain - this is a rapidly emerging area for companies as they look beyond their direct operations into the entire value chain. This would include the raw materials, suppliers (and possibly even their suppliers), and the use and after use phases of their products and services
- Integrated reporting - currently financial and sustainability reporting is disconnected. There is increasing pressure to assign economic values to sustainability parameters and integrate that with financial reporting

## COMMUNITY

The community at large is under great risk from climate change. As mentioned earlier, climate change is expected to impact the developing and under-developed countries the most. This is also where poverty and wealth differences are the most profound. Hence, we see the following challenges of climate change from a community perspective:

- Risk for large urban centres, particularly those located in close proximity to seas as sea levels rise
- Water security - as climate change impacts glaciers and the fresh water inventory of the world
- Food security - as climate change impacts weather conditions such as temperature and rainfall impacting growth of crops and breeding of animals
- Health considerations - as climate changes, there could be diseases that get an opportunity to flourish where they did not exist before
- Loss of livelihood and impact on standard of living - any climate change driven natural disaster will cause loss of livelihood for thousands of persons and leave their families homeless

However, we believe that climate change mitigation and adaptation strategies can actually be used by developing and under-developed countries to their advantage. Climate change mitigation strategies can be used to accelerate economic growth, and poverty reduction in through community based entrepreneurship from the implementation of climate change mitigation initiatives (supported by adaptation initiatives), building on the region's unique natural and environmental endowments.

The model predicated itself on the ability to involve local communities in strategies and initiatives related to addressing both energy emissions (power, transportation, etc) and non energy emissions (agriculture, land use, waste). The mitigation strategies at the community level need to be supported by adaptation strategies which would further help in the response to climate change. These adaptation strategies would include flood control, GIS mapping, climate information systems, land use planning, community climate change insurance, etc.

Adopting this model could have the following impact:

- employment opportunities, and hence enhance livelihood at the individual level and help reduce poverty
- initiative may also provide the community with a deficient resource (eg rural electrification in villages without electricity) which will enable the community to develop different industries, further enhancing livelihood
- generate community level revenue streams (eg. carbon credits, power generation, organic agricultural inputs, etc) which can be used by the community to repay lenders, and distribute any surpluses among the community participants

While climate change does pose significant challenges for countries, corporations and communities, there is indeed an opportunity for all to collaborate to implement climate change mitigation and adaptation strategies which would not only result in low carbon growth, but also inclusive growth benefiting the society at large.