



BOILING POINT

Containing the 'spill over' of Climate Change on the Indian subcontinent

PRELUDE TO CHANGE

There are some things that can be arrived at, through deliberation, while there are a few 'extraordinary' others which are obvious and don't require validation from more than one source. Among those astounding 'few' that have the power to completely take over our lives and henceforth challenge our very existence is '**Climate Change**'. While it's no news that the world is gearing up to limit the effects of this turnover of the climatic conditions, we at **SEEDS** feel that awareness is the key to taking things a little further away from merely ideation to action!

For a country of more than 1 billion (and growing) which is deep in the throes of making its own mark worldwide, climate change and its far reaching effects is a matter of grave concern to all of us. It's not flippant or frivolous; it's amongst one of the most burning challenges set to give us more than a few hiccups along the way with disastrous consequences. Silent acceptance and escapism is not an option; gearing up for the climatic assault through concerted efforts is the only key. It's time unheard voices from the field are given a platform

to voice their angst over the severe repercussions of climate change that is already inflicting them. It is with this purpose in mind that we have compiled together an approach to National Action on Climate Change that comprehensively entails how severely the country is already being swept under the sea of change and the only way of dealing with it is by no longer taking a backseat but by being as keyed in to what is happening nationwide, spreading awareness and through constant and earnest partnership with the government.

We bring to you case studies from inflicted zones, across the country, which stay as reminders of how we can't even afford to look at these cases as isolated incidents. The only way of even pretending to do that is taking out the value that human interest holds while chalking out a Climate Change Policy. There is a trenchant need to comprehend that climate change is no longer a part of pulp fiction or the byproduct of the maneuverings that celluloid allows, it's more real than the reel representations.



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श्यामसिंहा
जैसातमजी श्रील
सन् १९९० तां ५-५-९९
कादीगर - चम्पतराज बोस
शिवनेवाला
वीलीसि - पादल

It's imperative to also take into account that each area around the world will see varying implications of climate change. Rains in deserts, droughts in floodplains, heat waves, cold waves, urban floods and extreme water scarcity are all glimpses of the future in a changed climate. The unpredictability of it all is even more unnerving than the eventuality and the only common thread that might sustain our inhabitation amidst this uproar are common people—the agents of change. Instead of going on a fast forward scheme, a step into the foreground needs to be attempted. Starting from the grassroots and moving upwards trying

to fit as many people in the threshold of change as possible.

The focal point needs to remain on how we can best influence behaviours so that the future doesn't seem as daunting as we feel it might eventually be!

The national approach through its radical yet practical precision needs to have at least the following areas covered. These 10 areas are already in the midst of being compromised unless prompt action is not taken to safeguard these key areas.

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We shall further elucidate how these key areas cannot be given a miss or understood to be trivial concerns in the larger scheme of things through supporting case studies that are a result of the present climatic condition.



1 WATER MANAGEMENT

Water is one of the most critical areas threatened by climate change. For India, it is projected that the water flow in the major rivers will increase for some years, leading to increased incidence of flooding, and then recede drastically due to disappearance of glaciers that feed these rivers. Shifts in the rainfall patterns and timing are already leading to water related calamities. Water, whether too much or too little, can threaten the very existence of people in its domain. Our action plan needs to focus on increased efficiency in usage and transportation of water, for human consumption, agriculture and industrial use; in water harvesting, recycling and storage; and in control of water wastage.

2 ENERGY MANAGEMENT

Energy is one of the sectors that hogs maximum fossil fuels and emits huge amounts of greenhouses gases. India, being on a blazing path of development, is faced with an increasing hunger for energy, and while we work to adapt to climate change, we also need to focus on the mitigation front wherein we have to reign in our consumption patterns. Energy efficiency through appropriate technologies and practices based on conservation is a must. This is equally applicable to our energy hungry industry and transport sectors, and our individual consumption patterns. At a strategic level, settlement patterns, transport services, and a techno-legal regime is important. At a practical level, practices followed by individuals are equally important.



3 NATURAL ENVIRONMENT CONSERVATION

Our forests are our carbon sinks that help clean the environment of the harmful greenhouse gases. While it is recognized that India has only 23 percent of its land under forest cover, and the government aims to increase this figure, a concern remains between facts on paper and on the ground. How much of this designated forestland actually has forests on it? Each individual and each community needs to play an active role in creating and maintaining its green cover. Natural resource management is a subject that needs to be treated like a life science, and inculcated as a lifestyle practice in each individual.

4 APPROPRIATENESS OF BUILT ENVIRONMENT

Our built environment protects us from the vagaries of nature, and makes our life comfortable. At the same time, the designs, materials and technologies we are increasingly using, leads to huge amounts energy consumption and pollution. As such our built environment contributes to increasing the natural threats that it protects us from. Our action plan needs to increase the level of symbiotic relationship between our built and natural environments. Sensitive design of buildings, settlements and landscapes, local materials, low-energy and environmentally sensitive options must be explored to the maximum possible extent.



5 LIVELIHOOD SECURITY

One of the most expensive impacts of climate change on India will be in terms of its economy. The impact of climate change is already being seen in many primary sector economies. Several examples are available of adverse impacts on crops, even in spite of improved seeds, fertilizers, pesticides and crop management technologies. This, combined with the absence of credit and insurance options for farmers, has been leading to an alarming number of farmer suicides in the vulnerable states. Livelihood security must be ensured by exploring options and launching insurance and credit programmes.



6 HEALTH SAFETY

The shift in outreach of vector borne diseases is being felt in most parts of the world, but it hits harder in poorer societies that are ill equipped to prevent and treat illnesses. Diseases are making a comeback, and with increased resistance to drugs that used to be effective earlier! Investments need to be made urgently, one needs to make sure that they identify, isolate and control the spread of climate related diseases. Moreover, they need to prepare the vulnerable communities for prevention and effective response to emergent health problems.

PLANNED URBAN DEVELOPMENT

Over half of India's population will live in her cities within the next two decades. The pace at which urban planning and development is being taken up in the country is abysmally poor. Very radical steps need to be urgently taken to put the urban development process on track. Peri-urban areas need to be included in this effort, since these are the areas where a majority of informal changes are taking place right now. These will go on to become difficult to manage in the future. Focus on urban poor and their livelihood, housing, health, education and human security needs should be an integral part of the urbanization process in the country, and this is so far lacking.



8 DISASTER RISK REDUCTION

Climate variability is leading to, and in future will increasingly lead to, catastrophic events due to extreme weather conditions. Heat waves and cold waves are taking an increasing toll of human lives in spite of improved technologies and understanding of science. Increasing sea levels, loss of inhabited land to rising seas, increased frequency and intensity of cyclones and incidence of floods and droughts in short intervals of time are some incidences that will have to be dealt with in the near future. There is an urgent need to have a national programme on disaster mitigation and preparedness, that is based on community based approaches and has a wide outreach.

ATTENTION TO SPECIAL GROUPS

While it is implicit that all programmes will have a cross cutting outreach covering all people without biases, there is a need to identify and specifically focus on some specially vulnerable groups in order to ensure that they are able to stay in the mainstream of our society. Such special groups need to be identified judiciously, and specific actions need to be planned to ensure their security from climate related risks, both direct and indirect. Socially excluded groups, economically weak groups, disadvantaged women and children are priority sections that need to be addressed.



10 EDUCATION ON COMBATING CLIMATE CHANGE

A concerted effort by governments, corporations, the scientific community, educational institutions and the common public will be required to create a significant impact. There is a need to make significant investments in the research, monitoring and documentation of climate change impacts and appropriate responses. Both transferable indigenous knowledge and appropriate technologies need to be studied and the knowledge thus generated needs to be deployed at multiple levels—advocacy for appropriate decision-making, dissemination of information to various stakeholders to enable appropriate actions, and awareness generation.





1

There are some universal truths that might be subject to a good debate but they have a pretty conclusive 'sealing' once they are dissected, rationalised or analysed! You scratch your head, wondering what it might be, and perhaps why we are talking about sealing here?—but it just leads us to the focal point and the irrefutable empirical truth—it's impossible to survive without hydrogen and oxygen fusing together to make one potent compound...Water!

WATER MANAGEMENT

“ Water water everywhere but not a drop to drink! ”

Water covers about 70.8% of the earth’s surface, so while the planet might look like a blue blurb from space it doesn’t make the entire length and depth of the blue expanse ideal for living. Shifts in the rainfall patterns and timing are already leading to water related calamities. This has further led to serious consequences like not being able to manage the resources at hand—water stress, urban drought due to increased settlement (Varanasi, which sits higher up the river Ganges is ridden with sewage problems that is draining it mercilessly); diversion of rivers into lakes; industrial waste



dumping into the main water sources and channels; irrigational challenges because of climate change are only few of the many hurdles that have crippled water management—the lifeline of any nation! The case studies enlisted are landmark jolts that should shake us out of our slumber of sitting vacantly without attempting to bring about remedial actions with regard to the current water scenario! Balasore, Orissa, just happens to be amongst one of the inflicted areas.

Further feeling the tremors of climate change the residents of the Balasore are unable to cope with the increase in disaster frequency and have started migrating from the area due to loss of land and livelihood. The migrations have led to a number of social problems such as breakup of families.

The OVER-RIDING DELUGE!

Case in point *Balasure*

Rainfall and flood intensity has increased manifold in the district of Balasure, (Eastern Orissa) over the years. The unexpected frequency of rains here has resulted in the destruction of the rice crops further escalating the massive food shortage in the state. Once called the 'Granary of Orissa' (a district of paddy, betel and fish) it's now reduced to a rainfed disaster that's sinking in the turbulent weather conditions. Even rain is testimony to this change—the average rainfall that the district would get otherwise in a year was about 1568.44 mm, with an average of 62 rainy days in a year, however climate change has managed to spike the average rainfall of the district to 1922.6 mm.

It's unnerving to acknowledge that Balasure has been declared disaster affected for about 75 years out of the last 105 years, and the extreme weather conditions have reduced its food production by a staggering 40%. The economic impact of the flash floods in the coastal district of Balasure was Rs 508 crores in 2007 since many roads, bridges, houses and paddy crops were washed away by the turbulent waters of the overflowing rivers. The Bay of Bengal, in addition to all this, is merciless with the frequent cyclonic storm and depression raised due to global warming.

"Reuters/Rafiqur Rahman, courtesy www.aletnet.org"

Going by the key parameters of climate—like temperature and rainfall, the climate may worsen in Balasure. More frequent occurrence of floods, as well as rise in sea level will threaten the livelihoods of a vast majority here!

Prasanta Kumar Padhi, environmentalist

UNDER TROUBLED WATERS

Brundaban Swain of Kasimila Village under Basta Block in Balasore District is a worried man today. Five successive floods in August and September 2007 have broken his backbone. He is yet to cope with the situation and resume back to leading a fairly normal life.

He explains—“We used to stay under flood water for at least two months in a year. We have been experiencing this problem since the 1999 super cyclone. Though the super cyclone had not affected our village but since then this region has been experiencing serious flooding every year. What makes the situation even worse is that in spite of regular flooding no remedial action has been adopted to curb or contain it.”

The same problem affects other villagers like Haladhar Sahu, a resident of Baliapal. The flood in the area he belongs to has destroyed almost all paddy crops besides damaging the houses and killing cattle population.



Our place of stay gets submerged during August and September every year. As the place is low, floodwater gushes into the houses forcing us to take shelter on the road. It is ironic that although our houses are made of concrete they can't contain the gushing flood water. Besides, the river is changing its course all the time and eating out its shore which instills more fear and panic among the residents.

Basa

DISPLACED HOPES

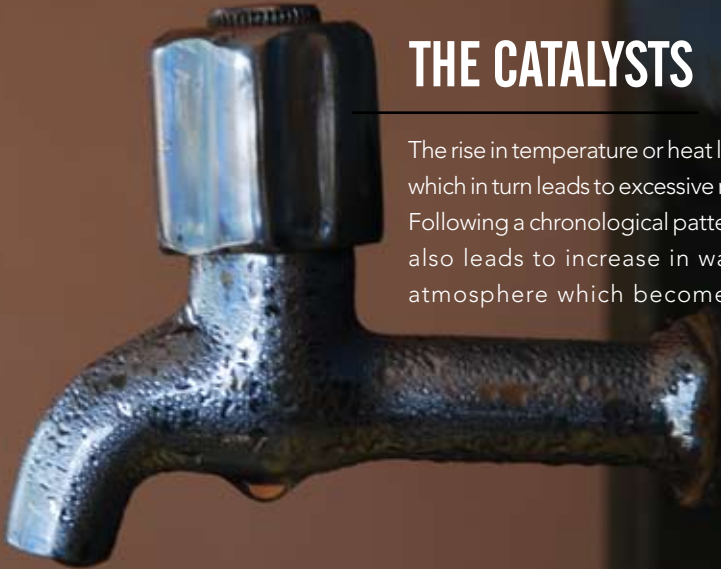
Case in point Ennore

Ennore Periya Kuppam, a fishing hamlet, situated in northern Chennai has been subjected to constant erosion for the past 30 years. The distance that has been eroded is about 1.5 to 2 kms according to the fisher folks of this hamlet. This has led to unequivocal displacement of the people and increased sense of despair and doom amongst them. What's more, it's an industrial township with many private shipping companies and oil refineries.

"Reuters/Jayanta Shaw, courtesy www.alertnet.org"

When the sea came towards us, we were able to shift towards the west of this hamlet. But again if it comes we do not know where we would go.

Villager at Ennore



THE CATALYSTS

The rise in temperature or heat leads to increased evaporation which in turn leads to excessive rainfall that causes flash floods. Following a chronological pattern, the increased evaporation also leads to increase in water vapour content in the atmosphere which becomes the catalyst for warmer temperatures that affects the crop production adversely, as it did in Balasore.

What remains as a grave reminder is that there are other areas that have also been adversely affected in the same manner as Balasore, Bhadrak, Mayurbhanj Kendrapara, Cuttack and Jajpur in 2007, are among those inflicted zones.

PREVENTIVE TURNOVER

The great thing about coping mechanisms within the system are some of the practices that have helped in managing the water crisis at the ground level. Tarun Bhagat Sangh (TBS), a non-profit organization, is instrumental amongst such rising practices and was started in 1985 with the objective that it would bring people together on the issues of management of forests and water resources. Since 1985, 4000 water harvesting structures have been built by the local people with support from TBS. Under NREGA (National Rural Employment Guarantee Act), provisions have been made to safeguard and rejuvenate traditional water sources through the help of the state government. Other adaptation options include agro forestry methods, including establishment of a small inland plantation which is proposed along freshwater canals and ponds.

The CCIFEH (Climate Change Impacts on Freshwater Ecosystems in the Himalayas) Program has selected Mousuni Island, in India, out of the 54 inhabited islands, as a pilot site to observe and study these impacts and to introduce adaptation strategies in the villages of this island. The program seeks to develop state level awareness generation towards effective participation by the local stakeholders in vulnerability reduction from extreme climatic events.

Due to the infrequent weather conditions and the unpredictable pattern in Himachal Pradesh the villagers, thanks to encouraging support from Environment and Rural Awakening (ERA) as well as CASA (Church's Auxiliary for Social Action), have resorted to traditional rain water harvesting structures called 'Khatri' or 'Diggj'. A Khatri is basically a square tunnel at the foothills,

which is about three to four meters in length, followed by a vertical basin at the inner end. Rainwater seeps into the Khatri through the mountain slopes and the water is collected in the basin. This is a great way to not only save water but manage it for the long run when you most crave it!

The Pani Panchayat of Mahur in Maharashtra has also helped generate a pleasant buzz amongst the farmers of the village! Mr. V. B. Salunkhe initiated the experiment of organising the local populace to harness the available water resources for agriculture in a drought prone area characterised by high levels of poverty in Pune District of Maharashtra. In order to optimally utilise the locally available meager water resource for protective irrigation and to fulfill the needs of food and shelter of the local

people on a sustained basis, initiative for water conservation and utilization of water by organised collectives of water users known as Pani Panchayat was taken up by Mr. Salunkhe and his wife during the early 80s. Orissa also decided to implement the same scheme for its irrigation related problems since 2005 through active participation by the government and the people.

Water, whether too much or too little, can threaten the very existence of people in its domain. Needless to say, the Climate Change Action Plan needs to focus on increased efficiency in usage and transportation of water; for human consumption, agriculture and industrial use; in water harvesting, recycling and storage; and in control of water wastage.

