

## INDIA AND CLIMATE CHANGE

### Brief overview on development and overarching development concerns

It has the world's fourth largest in purchasing power. Economic reforms since 1991 have transformed it into one of the fastest growing economies; however, it still suffers from high levels of poverty, illiteracy, and malnutrition. India's half billion workers are the world's second largest labour force and relatively young.

India also has the largest number of poor in the world<sup>1</sup>. India also has the largest number of illiterates in the world; of the 1 billion illiterates in the world (a sixth of the total world population), about 300 million are in India – larger than the population of the US, and twice the population of Brazil or Russia. India also has among the world's worst child malnutrition rates. Given this scale of illiteracy and malnutrition, taken together with the number of poor, the challenges for one of the fastest-growing economies in the world – India – become manifest.

India has successfully reduced the share of the poor in the population by 27.3 percentage points from 54.8 in 1973 to 27.5 in 2004 (National Sample Survey). Between 1973 and 1983, the headcount ratio of the poor had declined from 54.8% to 44%, and it fell further from 36% in 1993/94 to 27% by 2004/5. Thus, sixty years after independence, a quarter of the population is still below the national Benchmark, which is *known to be well below the international poverty line of a \$1 a day per person*.

Some states have been particularly successful in reducing the head count ratio of poverty. In 2004/5, the states with the lowest headcount ratio are Jammu and Kashmir (5.4%), Punjab (8.4%), Himachal Pradesh (10%), Haryana (14%), Kerala (15%), Andhra Pradesh (15.7%), and Gujarat (16.7%); at the other end of the spectrum are Orissa (46.3%), Bihar (41.3%), Madhya Pradesh (38.2%) and Uttar Pradesh (32.8%) – which also happen to be among the most populous states of India. The states that were formed recently (Chhattisgarh 40.8%, Jharkhand 40.3%, Uttarakhand 39.6%) have among the highest ratio.

### India's vulnerability to climate change

India is highly vulnerable to climate change due to a variety of factors including huge coastline, high dependence on rainfed agriculture, and low adapting capacity due to poverty. According to the UNEP (2007) India is one of the 27 countries highly vulnerable to climate change. Around 42 per cent of India's population still does not have access to commercial energy. India's stand as a developing country is that GHG abatement in any form involves significant economic costs and will adversely impact GDP growth as it requires a shift from cheap fossil fuels to costlier non-carbon energy. Over 75 percent of household energy consumption is for the basic human need of cooking. Traditional biomass is the primary cooking fuel for over 700 million Indians. 27.5 percent population is below poverty line. Lack of access to commercial energy leads to illiteracy, gender inequality/disempowerment, high IMR and MMR, Poor Health & and hence a low HDI. Over the next 25 years, India needs to lift the bottom 40 percent of her

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<sup>1</sup> NPC (2007) Report of the Steering Committee on Rapid Poverty reduction and local area development for the Eleventh Five Year Plan (2007-2012) Government of India New Delhi 141pp

citizens to an acceptable level of economic & social well being – this will not happen without providing modern energy to these fellow Indians. There is also an important issue of uniformity in distribution of energy consumption/emission per capita argument to be tenable. According to an estimate by Greenpeace, the top 1 percent of our population in India has emissions which are 4.5 times that of the bottom 38 percent.

India, as a developing country has other reasons to be concerned about the adverse impact of climate change on its economy. A large part of its population depends on climate sensitive sectors for livelihoods which makes it highly vulnerable to climate change. Climate change can have serious impact on its crops, forests, coastal regions, etc. which can in turn affect the achievement of its important national development goals. The issue of climate change cannot however be taken up without linking it to developmental needs such as poverty, health, energy access and education. Higher energy production and consumption is a major driving force of economic development and poverty reduction. Most economic activities depend on energy. As India has a sizeable service sector (53% of GDP excluding construction and 61% of GDP including construction in 2006-07 & 2007-08 (April-Dec.) and services exports is 35% of total exports in 2007-08 (April-Dec.) and 37% in 2006-07), its economic growth may not be associated with proportionate GHG emissions, though its emissions are bound to grow in short as well as medium term with the upsurge of the manufacturing sector and need for industrialisation to meet the growing demands of its huge population.

Agriculture is important for food security in two ways: it provides the food and also the primary source of livelihood for 38.7 percent of the world's total workforce. In Asia and the Pacific, this share accounts for approximately 50 per cent and in sub-Saharan Africa, nearly two-thirds (63 per cent) of the working population still make their living from agriculture. If agricultural production in the low-income developing countries of Asia and Africa is adversely affected by climate change, the livelihoods of large numbers of the rural poor will be put at risk and their vulnerability to food insecurity will be manifold

Agriculture is the mainstay of Indian economy and provides food and livelihood security to a substantial section of the Indian population. The impact of climate change as witnessed in recent times has immense potential to adversely affect agriculture in this country in a variety of ways. As a large part of the arable land in India are rain-fed, the productivity of agriculture depends on the rainfall and its pattern. Agriculture will be adversely affected not only by an increase or decrease in the overall amounts of rainfall but also by shifts in the timing of the rainfall. Any change in rainfall patterns poses a serious threat to agriculture, and therefore to the economy and food security. Summer rainfall accounts for almost 70 per cent of the total annual rainfall over India and is crucial to Indian agriculture. However, studies predict decline in summer rainfall by the 2050s. Semi arid regions of western India are expected to receive higher than normal rainfall as temperatures soar, while central India will experience a decrease of between 10 and 20 per cent in winter rainfall by the 2050s. Relatively small climate changes can cause large water resources problems particularly in arid and semi arid regions such as northwest India. Productivity of most crops may decrease due to increase in temperature and decrease in water availability, especially in Indo-Gangetic plains. This apart, there would be a decline in the productivity of rabi as compared to kharif season crops. Rising temperature would increase fertilizer requirement for the same production targets and result in higher GHG emissions, ammonia volatilization and cost of crop production. Increased frequencies of droughts, floods, storms and cyclones are likely to increase agricultural production variability. Therefore, we have to place equal emphasis on saving lives and sustaining livelihoods.

## Impacts on water situation in India

India stands to face major challenges in many fronts in so far as the impact of climate change is concerned. Water security is one of the most important threats in this regard. Water resources will come under increasing pressure in the Indian subcontinent due to the changing climate.

The Himalayan glaciers are a source of fresh water for perennial rivers, in particular the Indus, Ganga, and Brahmaputra river systems. In recent decades, the Himalayan region seems to have undergone substantial changes as a result of extensive land use (e.g. deforestation, agricultural practices and urbanization), leading to frequent hydrological disasters, enhanced sedimentation and pollution of lakes. There is evidence that some Himalayan glaciers have retreated significantly since the 19th century. Available records suggest that the Gangotri glacier is retreating about 28 m per year. Any further warming is likely to increase the melting of glaciers more rapidly than the accumulation. Glacial melt is expected to increase under changed climate conditions, which would lead to increased summer flows in some river systems for a few decades, followed by a reduction in flow as the glaciers disappear. As a result of increase in temperature significant changes in rainfall pattern have been observed during the 20th century in India. A serious environmental problem has also been witnessed in the Indo-Gangetic Plain Region (IGPR) in the past whereby different rivers (including Kosi, Ganga, Ghaghara, Son, Indus and its tributaries and Yamuna) changed their course a number of times. The recent devastating floods in Nepal and Bihar due to change of course of River Kosi is a case in point.

Available study suggests that food production has to be increased to the tune of 300 mt by 2020 in order to feed India's ever-growing population, which is likely to reach 1.30 billion by the year 2020. The total foodgrain production has to be increased by 50 per cent by 2020 to meet the requirement. It is feared that the fast increasing demand for food in the next two or three decades could be quite grim particularly in view of the serious problem of soil degradation and climate change. The rise in population will increase the demand for water leading to faster withdrawal of water and this in turn would reduce the recharging time of the watertables. As a result, availability of water is bound to reach critical levels sooner or later. During the past four decades, there has been a phenomenal increase in the growth of groundwater abstraction structures. Growing demand of water in agriculture, industrial and domestic sectors, has brought problems of overexploitation of the groundwater resource to the fore. The falling groundwater levels in various parts of the country have threatened the sustainability of the groundwater resources. At present, available statistics on water demand shows that the agriculture sector is the largest consumer of water in India. About 83% of the available water is used for agriculture alone. If used judiciously, the demand may come down to about 68% by the year 2050, though agriculture will still remain the largest consumer. In order to meet this demand, augmentation of the existing water resources by development of additional sources of water or conservation of the existing resources and their efficient use will be needed. It is evident that the impact of global warming threats are many and alarming. Water security in terms of quantity and quality pose problems for both developed and developing countries. However, the consequences of future climatic change may be felt more severely in developing countries such as India, whose economy is largely dependent on agriculture and is already under stress due to current population increase and associated demands for energy, freshwater and food.

## Impacts on Indian Agriculture–Literature

- Sinha and Swaminathan (1991) – showed that an increase of 2°C in temperature could decrease the rice yield by about 0.75 ton/ha in the high yield areas; and a 0.5°C increase in winter temperature would reduce wheat yield by 0.45 ton/ha.
- Rao and Sinha (1994) – showed that wheat yields could decrease between 28 to 68% without considering the CO<sub>2</sub> fertilization effects; and would range between +4 to -34% after considering CO<sub>2</sub> fertilization effects.
- Aggarwal and Sinha (1993) – using WTGROWS model showed that a 2°C temperature rise would decrease wheat yields in most places.
- Saseendran et al. (2000) – showed that for every one degree rise in temperature the decline in rice yield would be about 6%.
- Decrease in yield of crops as temperature increases in different parts of India - For example a 2°C increase in mean air temperature, rice yields could decrease by about 0.75 ton/hectare in the high yield areas and by about 0.06 ton/hectare in the low yield coastal regions.
- Major impacts of climate change will be on rain fed crops (other than rice and wheat), which account for nearly 60% of cropland area. In India poorest farmers practice rain fed agriculture.
- The loss in farm-level net revenue will range between 9 and 25% for a temperature rise of 2-3.5°C .

Source: Climate Change and Food Security in India Dr. N. Chattopadhyay, Director, India Meteorological Department, 2008, Presented in Dhaka

## An overview of agriculture in India; structural reasons, policy responses and priorities

Agriculture sector is vital for the food and nutritional security of the nation. The sector remains the principal source of livelihood for more than 58% of the population though its contribution to the national GDP has declined to 14.2% due to high growth experienced in industries and services sectors. Compared to other countries, India faces a greater challenge, since with only 2.3% share in world's total land area, it has to ensure food security of its population which is about 17.5% of world population. This leads to excessive pressure on land and fragmentation of land holdings. Against the backdrop of the burgeoning population's demands for foodgrains, degrading natural resource base, emerging concerns of climate change and other challenges of increasing agricultural production with limited natural resources in a sustainable manner for ensuring food and nutritional security and providing income security to farmers are the major challenges before the Government.

Small and marginal farmers are vital for India's agriculture and rural economy. Small holders including sub-marginal (less than 0.50 ha), marginal (0.50 to 0.99 ha) and small farmers (01.00 to 01.99 ha) constitute 83.29 percent of the total number of holdings with an operated area of only 41.4% (DAC, Ministry of Agriculture, 2010). Semi medium and medium operational holdings (2.00 ha to 10.00 ha) were 15.86 percent of the total holdings in 2005 with an operated area of 47.04 percent; while large holdings (more than 10.00 ha) were 0.85% of total number of holdings with a share of 11.82 percent in the operated area.

The proportion of marginal farms have increased from 36% (1960) to 47% (2004) and the small scale farms decreased from 16% to 11% during the same period. The average size landholding is 0.2 hectares and will be close to 0.11 ha by the turn of the century. The current 89 million landholdings will be

fragmenting into 100 millions by the same time. A steady decline of medium and large-scale farmers in India underline the fact that small and marginal farmers have to be in the centre of policy responses if the food security of the growing millions have to be ensured.

An analysis of data of agricultural production for both food grains and non-food grains production between 1971 to 1991 manifests that while the proportionate contribution of small farms (less than 2.00 ha) has increased substantially, those of the medium farms have increased fractionally and proportionate contribution of large farms (more than 10.00 ha) has decreased substantially. That proves that there is an inverse relation between farm sizes and productivity, suggested by Amartya Sen as early as 1964.

However, during the last two decades small holders agricultural has become a very risky and adventurous enterprise. A number of factors including fall outs of the green revolution, increased inputs costs, reduced soil productivity, excessive use of water, fertilizer and pesticide, fixation of cultivating rice, wheat over coarse food grains, and shift to cash crops have made small scale agriculture economically unviable. This has resulted in pauperisation of peasants and migration, huge rural indebtedness and suicide of farmers. The apathy of government has led towards depesantization and marginalization of peasants' social and economic status and concerns.

Small holder families constitute more than half of the national population, however, they mainly constitute the majority of the hungry population of the country despite being producers. The state must acknowledge that policy responses aimed at small holders farmers will not only improve their lot but actually help half of the population being lifted above the poverty. Small and marginal farmers have the potential for feeding not only the households but also the nations. A number of recent reports have recognized their potential in feeding the nations, being environment friendly and capable of tackling the challenges posed by climate change. However, to respond to the challenges of increasing productivity and food production small and marginal farmers need substantial improvement in policy environment. The state must respond to them with improved and equitable policies on land, inputs, credit and insurance assurance, social security, favouring provisions in international trade framework and agricultural research and development and capacity building on agricultural; adaptation in times of climate change.

Improving agricultural growth is one of the important objectives of 12<sup>th</sup> FYP of GOI. However, the problem is that the new model is also being suggested by same people and forces that have been responsible for bringing about this crisis. The planning develops in complete isolation and reality of Indian agriculture and is attuned towards imports rather than self sufficiency in food grains production, priority to foreign companies rather than farmers interest, and increasing access to Indian markets for world rather than protecting farmers interests. The planning process refuses to take lessons from the Green revolution and is keen on going to Green revolution two. There is complete lack of farmers movements and most of the association of farmers are affiliated to political parties, which are more political than agricultural in nature. Therefore, despite having a priority on agriculture the policy does not encourage farmers concerns and confidence.

### **Government's response to climate crisis**

The Indian government's response to has been led by the National Action Plan on climate change (NAPCC, 2008). On June 30, 2008, Prime Minister released India's first National Action Plan on Climate Change (NAPCC) outlining existing and future policies and programs addressing climate mitigation and

adaptation. The plan identifies eight core “national missions” running through 2017 and directs ministries to submit detailed implementation plans to the Prime Minister’s Council on Climate Change by December 2008.

Emphasizing the overriding priority of maintaining high economic growth rates to raise living standards, the plan “identifies measures that promote our development objectives while also yielding co-benefits for addressing climate change effectively.” It says these national measures would be more successful with assistance from developed countries, and pledges that India’s per capita greenhouse gas emissions “will at no point exceed that of developed countries even as we pursue our development objectives.”

**National Solar Mission:** The NAPCC aims to promote the development and use of solar energy for power generation and other uses with the ultimate objective of making solar competitive with fossil-based energy options. The plan includes:

- Specific goals for increasing use of solar thermal technologies in urban areas, industry, and commercial establishments;
- A goal of increasing production of photovoltaics to 1000 MW/year; and
- A goal of deploying at least 1000 MW of solar thermal power generation. Other objectives include the establishment of a solar research center, increased international collaboration on technology development, strengthening of domestic manufacturing capacity, and increased government funding and international support.

**National Mission for Enhanced Energy Efficiency:** Current initiatives are expected to yield savings of 10,000 MW by 2012. Building on the Energy Conservation Act 2001, the plan recommends:

- Mandating specific energy consumption decreases in large energy-consuming industries, with a system for companies to trade energy-savings certificates;
- Energy incentives, including reduced taxes on energy-efficient appliances; and
- Financing for public-private partnerships to reduce energy consumption through demand-side management programs in the municipal, buildings and agricultural sectors.

**National Mission on Sustainable Habitat:** To promote energy efficiency as a core component of urban planning, the plan calls for:

- Extending the existing Energy Conservation Building Code;
- A greater emphasis on urban waste management and recycling, including power production from waste;
- Strengthening the enforcement of automotive fuel economy standards and using pricing measures to encourage the purchase of efficient vehicles; and
- Incentives for the use of public transportation.

**National Water Mission:** With water scarcity projected to worsen as a result of climate change, the plan sets a goal of a 20% improvement in water use efficiency through pricing and other measures.

**National Mission for Sustaining the Himalayan Ecosystem:** The plan aims to conserve biodiversity, forest cover, and other ecological values in the Himalayan region, where glaciers that are a major source of India’s water supply are projected to recede as a result of global warming.

**National Mission for a “Green India”:** Goals include the afforestation of 6 million hectares of degraded forest lands and expanding forest cover from 23% to 33% of India’s territory.

**National Mission for Sustainable Agriculture:** The plan aims to support climate adaptation in agriculture through the development of climate-resilient crops, expansion of weather insurance mechanisms, and agricultural practices.

**National Mission on Strategic Knowledge for Climate Change:** To gain a better understanding of climate science, impacts and challenges, the plan envisions a new Climate Science Research Fund, improved climate modelling, and increased international collaboration. It also encourage private sector initiatives to develop adaptation and mitigation technologies through venture capital funds.

The NAPCC was declared without any broader consultation with experts, primary stakeholders or farmers and towards its preparation towards COP 15 (Copenhagen, Denmark, 2009). It also did not visualized a comprehensive, well articulated way and modalities to achieve the stated objectives and ended up as a wish list without sufficient direction and vision. The NAPCC also reveals lack of coordination amongst different relevant Ministries which are important stakeholders on low carbon growth path. All the states were supposed to have come up with detailed State Action Plans by the end of 2009, however, that has not happened now. Prime Ministers Council on climate change has the primary responsibility of accomplishing NAPCC and SAPCC. The Council will also be responsible for periodically reviewing and reporting on each mission's progress.

## **INDIA: TAKING ON CLIMATE CHANGE, POST-COPENHAGEN DOMESTIC ACTIONS**

### **An Expert Group on A Low Carbon Strategy for Inclusive Growth**

The Government of India has set up an Expert Group on Low Carbon Strategy for Inclusive Growth. It is a multi-stakeholder group with representation from industry, leading think tanks, research institutions, civil society and government. The Group has been given the mandate to develop a roadmap for India for low carbon development. It will recommend prioritized actions in sectors such as Electricity, Transport, Industry, Oil and Gas, Buildings, and Forestry. The Group's recommendations will become a central part of India's Twelfth Five Year Plan which will come into effect in 2012.

### **A "Carbon Tax" on Coal to Fund Clean Energy**

India has announced a levy – a clean energy cess – on coal, at the rate of Rs. 50 (~USD 1) per ton, which will apply to both domestically produced and imported coal. This money will go into a National Clean Energy Fund that will be used for funding research, innovative projects in clean energy technologies, and environmental remedial programmes. The expected earnings from this cess is around USD 500 million for the financial year 2010-11.

### **Perform, Achieve & Trade (PAT) Mechanism for Energy Efficiency**

India's cabinet approved the National Mission on Enhanced Energy Efficiency (NMEEE) on 24th June, 2010. The Mission includes several new initiatives – the most important being the Perform, Achieve and Trade (PAT) Mechanism, which will cover facilities that account for more than 50% of the fossil fuel used in India, and help reduce CO2 emissions by 25 million tons per year by 2014-15. About 700 of the most energy intensive industrial units and power stations in India would be mandated to reduce their energy consumption by a specified percentage. The percentage reduction for a facility would depend on its current level of efficiency: the most efficient facility in a sector would have a lower percentage reduction requirement, and the less efficient facility would have larger percentage reduction requirement. In order to enhance the cost effectiveness of this mechanism, facilities which achieve savings in excess of their mandated reduction would be issued Energy Savings Certificate (ESCerts) for the savings that are in excess of their mandated target. These ESCerts can be used by other facilities for compliance if they find it expensive to meet their own reduction target. Energy efficiency ratings made mandatory for 4 key appliances — refrigerators, air conditioners, tubelights and transformers from January 7, 2010; more to follow through 2010-11.

### **Release of India's National GHG Inventory 2007**

On 10th May 2010, India released its Greenhouse Gas (GHG) Emissions Inventory for 2007, with the aim of enabling informed decision-making and to ensure transparency. Until now, the only official emissions estimates available were for the year 1994. With this publication, India has become the first "non-Annex I" (i.e. developing) country to publish such updated numbers. India also announced its intent to publish its emissions inventory in a two-year cycle going forward, which is much more frequent than the requirement under its NATCOM commitments. India will be the first developing country to do so. According to the results, India's emissions are less than a fourth of the USA and China. Results also show that the emissions intensity of India's GDP declined by more than 30% during the period 1994-2007 due to the efforts and policies that India has proactively put in place. Despite its already low emissions intensity, India intends to do even more. India has announced its intent to further reduce the emissions intensity of its GDP by 20-25% between 2005 and 2020, even as it accelerates infrastructure development and the growth of its manufacturing sector.

### **REDD+**

India has announced a number of initiatives related to its preparedness for REDD+. A Technical Group has been set up to develop methodologies and procedures to make assessment and monitoring of REDD+ actions. A National REDD+ Coordinating Agency has been given in-principle approval. Methodologies for National Forest Carbon Accounting are being institutionalized.

### **Regional and International Cooperation**

South Asian Association for Regional Cooperation (SAARC), which comprises the 8 South Asian countries, adopted the Thimpu Statement on Climate Change on 29th April 2010. The Statement calls for, among other things, an Intergovernmental Expert Group on Climate Change to develop clear policy direction for regional cooperation on climate change. India announced the grant of USD 1 million each to SAARC Forestry Centre, Thimpu, Bhutan and SAARC Coastal Management centre, Male, Maldives. India and Bangladesh are also to set up the India-Bangladesh Sunderbans ecosystem Forum to conserve the Sunderbans – the world's largest riverine delta. Climate change will be the central component of this Forum. India will also host 11th COP of Convention on Biodiversity (CBD) in 2012, mark 20<sup>th</sup> anniversary of Rio.

### **Climate Change Science**

The Indian Network for Climate Change Assessment (INCCA) is undertaking a major "4X4" assessment of the impacts of climate change on four sectors – water resources, agriculture, forests and human health – in four critical regions of India – the Himalayan region, North east, Western ghats and Coastal India. This will be released in November 2010. INCCA is a network comprising 127 research institutions tasked with undertaking research on the science of climate change and its impacts on different sectors of the economy across the various regions of India. India also plans to launch of Indian satellite to monitor GHG emissions by 2013 on track.

### **India's First CDM PoA (Bachat Lamp Yojana)**

The Bachat Lamp Yojana (BLY) conceived as CDM Programme of Activity (PoA) for mass distribution of Compact Fluorescent Lamps (CFLs) in India has been registered successfully by the CDM-Executive Board. This is the first PoA to be registered from India and third in the World. The Programme has been developed to promote energy efficient lighting in India. State-level electricity Distribution Companies (DISCOMs) that join this programme would distribute high quality CFLs at about Rs. 15 per piece. The Programme would not only help the reduction of peak load in the country but also lead to a potential reduction of over 6,000 MW in electricity demand.

Source: **INDIA: TAKING ON CLIMATE CHANGE**, POST-COPENHAGEN DOMESTIC ACTIONS, Ministry of Environment and Forests, Government of India, [www.moef.nic.in](http://www.moef.nic.in)

**SAPCC:** Presently the focus on Indian government is to encourage states to come up with state action plan on climate change as fast as possible. Till now only seven states (Delhi, Odisha, Himachal Pradesh, Uttarakhand, Karnataka, Andhra Pradesh, Haryana ) have declared their state action plans, while others have missed the third deadline of 31<sup>st</sup> March 2011. The states are being helped by WB, UNDP, DFID,

GTZ, TERI etc in their action plans. There is very little concern for broader consultation with stakeholders or civil society. In almost all the states, the process is non-transparent and top down. In a number of states, it is very little connection with reality and focuses more on energy, industries rather than natural resources like agriculture, water and forests. The state action plans are generally seen as missing the opportunity to mainstream sustainable development concerns in policy planning and having some valuable contribution in development of low carbon development pathways, sustainable use and equitable access to natural resources.

### **Snapshot of SAPCC approach; brief case study on SAPCC Odisha**

The draft CCAP of Orissa prepared at the aegis of the World Bank and DFID does not consider the concern and interest of common citizens, neither reflect state's seriousness towards self-discipline, sobriety and adaptation, rather vociferously reiterates and exposes its nexus with neo-liberal lobby which propounds reckless industrialization and unwarranted investment. With its focus on promoting investment-intensive mitigation measures as a tool to encourage state's ongoing unabated industrialization drive, it looks more as an "Investment Plan for Industrialization and Mitigation" offering almost nothing for state's farmers, fishers, forest-produce gatherers.

Action Plan ignores these factors altogether and treats the people of Orissa not as victims of climate change but as the perpetrators of climate change. It has imposed a large budget of Rs 17,000 crore on the state exchequer for helping industries reduce their expenditure on adapting to climate change. In the plan there is hardly any budget for the victims of climate change. There is no plan for the sea erosion affected villagers of Saatabhayaa and other such villages, there is hardly any money for assuring irrigation to farmers who have been affected by the vagaries of failing rains and changing monsoon patterns. This has nothing for the victims of extreme heat conditions around the Talcher and Jharsuguda regions where large thermal power plants have made the day to day life of people living hell and where the extreme heat has reduced agricultural productivity and livestock productivity and survival.

On the contrary, the climate change action plan has proposed a fifteen fold increase in the thermal power plants in Orissa from a capacity of 4000 megawatts to almost 60,000 megawatts. Orissa does not need so much power. This is amply clear from the government's own statement that the total demand even in 2011 will be less than 3000 megawatt. More than manifold increase in electricity, there is an urgent need for equity in energy access. This does not need more than a doubling of capacity and could also be produced to a significant extent from renewable energy sources. The planned 15 fold increase in thermal power capacity will lead to at least thirteen times higher levels of emission of heat and pollution.

Climate change has affected monsoons and the uncertainty of rainfall has made lives of farmer miserable and uncertain. Combined with other factors of agricultural crisis, farmers of Orissa have already started committing suicide. The appropriate response for this crisis would have been to create more irrigation infrastructure. There is hardly any money allocated for developing small and micro level irrigation facilities. There is no allocation for increasing the supply of electricity to farmers. On the other hand the government has planned for enhancing the fees for irrigation. Since 1999, the government has increased the price of irrigation water by two to two and half times while keeping the rates for industrial supply constant.

Source: <http://orissaconcerns.net/2010/06/reject-orissa-draft-climate-change-action-plan/>