



DYNAMIC ADMINISTRATION

Indian Institute of Public Administration (U.P. Regional Branch)

Climate Change Challenges & Responses (Issues : Sustainable & Inclusive Development & Environmental Security)

Editorial Board

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(A) Editorial

This is the 109th issue of our quarterly newsletter 'DYNAMIC ADMINISTRATION', which we have been bringing out regularly since last nearly three decades. This issue is focused on many important and critical areas pertaining to likely adverse and serious impacts of climate changes that are occurring globally, nationally and locally, and the policy responses as also action steps that are needed to face and resolve the serious challenges looming ahead.

Climate changes and their dangerous and rising adverse impacts have now been accepted world over. All agree there is urgent need for international united action, new policies strategies and programmes, investments, technology develop-ments and resources and their transfers from developed to developing countries. Scientists say the decade 2001-2010 has been globally the hottest since temperatures began to be maintained and the year 2015 has been the hottest. And this warming has been largely the result of anthropogenic emissions of green house gases. These concerns have been increasingly felt since the historic Stockholm Conference of 1972. The U.N. set up the IPCC

(Intergovernmental Panel for Climate Change) in 1988. Thereafter, under its auspices, 21 COPs (Conferences of Parties) have been convened till December, 2015 with the participation of its member countries to address these serious issues, find solutions and work out time-lined action steps and technologies innovations, funding needs and resources as also tech-transfers from the developed to developing countries. The developed countries dithered and in the meantime, the green house gas emissions continued to rise dangerously. It is said the capacity of earth's atmosphere to absorb the carbon load varies between 800-880 billion tonnes GHGs before global atmospheric warming exceeds 2°C which would make progressive warming irreversible. In business as usual scenario the temperature rise by 2100 could be as higher as 4°C and that would mean a tragedy of horrendous dimensions—more of extreme weather phenomena, storms, sea level rises, more of vector borne diseases, falls in agricultural production, melting of icebergs and arctic ice sheets, disturbed hydrological cycles and great loss of life, property and resources.

India, a warm country, geographically as it is placed, would be comparatively more vulnerable and U.P. even more so! The world has used up over two thirds of its carbon budget and, each year, around 25 billion tonnes of GHGs are added to the GHG load of atmosphere. If effective steps are not taken the global CO2 budget would get used up in the next decade and a half or so and that would be terribly disastrous. As the UN Gen. Secy. Ban Ki Moon said some time ago science has spoken and the need is to act speedily, unitedly, determinedly.

India has to work out its responses. It needs, inter-alia, to prioritize reduction in its demographic growth and its stabilization in a

time-lined horizon, a concerted shift to uses of renewable energy, land and water conservation, a distinct bending down of its emission load curve and powerful policy shifts to adaptation as also mitigation measures.

It is the above listed important and vital issues that were the subject matter of our last Workshop held on 5.3.2016 on responses needed in India and particularly in U.P. The essential thematic contents of the interaction, the interventions made by discussants and the key recommendations that emerged from it are being presented in this 109th issue of our newsletter "DYNAMIC ADMINISTRATION".

T.N. Dhar
Editor

(B) PROCEEDINGS & DISCUSSANT INTERVENTIONS

1. **T.N. Dhar** :- I heartily welcome you all to this important and timely Workshop on issues of both global and local import and urgency. Climate Changes and their serious negative impacts are now recognized world over and so is the crucial need of well-planned and urgent responses and action steps by all countries in co-operative and constructive modes. Unless speedy and effective policy and action steps are taken unitedly by all nations and funded as also technologically supported in time-lined ways, the adverse consequences would become serious and irreversible. Atmospheric warming, it is scientifically recognized globally, is happening and happening at an increasing pace. World over we are using up our carbon budget in imprudent and trouble inviting ways. This was not the ancient wisdom of India and our historical traditions. In the Atharva Veda, nearly three millenia ago, the

hearkening cry was, "What, oh earth, I dig out of thee, quickly shall that grow again. May I not pierce one, pierce thy vital spot, and not thy heart." This was the wisdom of our forefathers and now, in climate change and its serious negative impact contexts, we need to relive our traditions and memories and work for a world that allows us to grow sustainability, inclusively and equitably. The Stockholm Conference (1972) reminded us of the need for environmental security and sustainability. The United Nations set up the IPCC (Inter governmental Panel for Climate Change) in 1988. A series of COPs (Conference of Parties), in which most nations of the world took part was convened to go into these issues. Scientists say the capacity of the earth's atmosphere to absorb GHGs varies between 800-880 billion tonnes. Over 55% of it has been used up already according to IPCC's latest Assess-

ment Report (ASR-V) and, at present, we are adding each year around 52-53 billion tonnes of additional carbon load, to atmosphere and only half of it can be absorbed by the earth's ecosystems. If this trend continues we would be fully using up the entire carbon budget by 2030 or so and that would be catastrophic. The atmosphere is heating up and, in a business-as-usual scenario, its temperature would increase by 4°C by 2100 which eventually has frightening implications -- more of droughts, floods, storms, extreme weather, rising sea levels, poor agricultural yields, loss of snow cover and much greater incidence of vector borne diseases with more of mortalities. The international goal is broadly to keep temperature rise to within a level of 2°C, and more ambitiously to 1.5°C, to avert warming becoming irreversible.

India's INDCs include (a) Reduction of GHG emissions per unit of its GDP by 33%-35% of 2005 level by 2030, (b) Increase share of non-fossil fuels to 40% in power generation and (c) Increase forest cover to create a carbon sink of 2.5-3 billion tonnes of CO₂. These INDCs are aimed at balancing the needs of development and tackling of climate change impacts. India has taken many initiatives for meeting C.C. and environmental security challenges. It has enacted several laws and set up regulatory mechanisms both at the national and state levels but there are compliance deficits and the upward curve of warming has yet to be bent down in real terms. The National Action Plan on Climate Change was announced in 2008 by UPA Government which listed 8 Missions. Four more missions were added

by the NDA Government in 2015. These Missions are well intentioned but their pace of actual implementation is still slow and wanting. Even the Constitution of India was amended in 1977 to make environmental safety responsibility of governments and duty of citizens. A high level P.M.'s Council for C.C. was set up in 2008. At the last COP-21 in Paris, in December 2015, India's P.M. rightly stressed three crucial issues, namely, (i) Climate Justice (ii) Sustainable Life styles and (iii) Vacation of Carbon Space by Developed Countries. At COP-21 the principle of differentiation was accepted but that of the historical responsibility of developed nations was dumped. However, it was agreed that developed countries would contribute 100 billion dollars/year from 2020 onwards to help meet needs of the poor and developing countries. Each country is required to set up and declare every five years its emission targets.

In U.P. the C.C. responses have been slow and tepid. The State has got a C.C. Response Action Plan prepared through consultants in 2014 which recommended a 4 year plan (2014-18) costing Rs 46,965 crore but nothing much has happened so far to implement it. The hard fact in that U.P. needs to prioritise, in C.C. response contexts, some special areas of attention and action which must include: (i) Reduce demographic growth and Stabilise Population, (ii) Improve Land and Water Management, (iii) Foreground Renewable Energy in big way, (vi) Improve compliance of Emission Abatement and Pollution Control laws/regulations, (v) Stress Preventive Health (vi) Enhance quality and reach of

Disaster Planning, Preparation and Relief Measures, (vi) Involve People's Institutions and Voluntary Groups in these Measures and, importantly, (vii) Monitor, Evaluate and Apply correctives where needed speedily & effectively. Our theme paper touches upon these issues and the other Workshop documents spell out their various aspects in greater detail.

Once again I welcome you all and would now request the Chairman, Sri R. Ramani, to please address the Workshop and set its tone:

2. **Sri R. Ramani (Chairman):-** I am indeed delighted that this important and timely interaction on climate change and responses and action steps needed to its formidable challenges has been organized by our Regional Branch of IIPA and SHERPA jointly. In fact Shri Dhar, the Hony. Secy., had consulted me and I agreed this was an apt topic for open discussion and suggestions on policy and action steps needed to meet the challenges at different levels involving people, institutions, voluntary groups, researchers and governments. The theme paper covers many of these issues. It is now well recognized that climate changes have been regressive and atmospheric warming continues at unsafe levels. Apart from global responses we need strong policy and action measures in these contents both at the national and state levels. The Green House Gas emissions are on the rise and these are emanating through various anthropogenic activities such as, for example, burning of fossil fuels, dung and wood, poor waste disposal and varied industrial, commercial and urban/rural development activities.

Such activities are accelerating at a rate which exceeds very considerably the assimilative capacities of earth's atmosphere. Risks to public health and environment have increased. Extreme weather, heat and cold waves, and higher incidence of diseases and mortalities are to be witnessed in many countries and even in many areas of India. The challenges are well recognized and scientifically documented, Nationally, and more particularly in U.P., the areas of attention are lowering of emission loads industry - wise and economic activity - wise. Land and water management and uses need to be improved, conservation foregrounded and environmental education stressed at all levels. People's responses matter and that requires conservation and sustainability-oriented education, effective laws and their enforcement, peoples' participation and sustained monitoring. In our state I would lay stress on the lowering of our demographic growth rate, environmental education, improving of land and water management, more water recharging projects and promoting minimum emission creating industrial development. We will need technical innovations and greening of all development policies and programmes and more of renewable power resources development. I am sure all these issues will get discussed here and we can come up with measures that can help respond to C.C. changes successfully and effectively. With these words I am happy to declare this Workshop now open for discussions.

3. **Dr. Y.S. Bhadauria:-** There is an all round policy agreement that the country and our own state should prioritise sustainable,

equitable and inclusive development. These objectives have to be the flag points of our development model particularly in C.C. contexts. Let me list some priorities. These would be emission reductions, pollution control, special attention to land and water management and more of media coverage on these issues to inform, educate and motivate people and make every citizen climate change conscious. Educational systems at all levels should include and emphasise environmental sustainability and C.C. responses needed. U.P. Government should set up a well staffed and well-equipped State Climate Response and Action Centre.

4. **Sri Raghendra Shukla:-** Tackling C.C. impacts needs action on many fronts. Firstly, if we reduce emission loads that would mitigate the rising carbon load trends. Secondly, greening of the economy can help. More tree cover and more dense forests can help absorb CO₂ and enhance oxygen supply. Forest cover area needs to be enhanced in U.P. and its density, too. Trees can be planted on roadsides railsides, village commons and even in homesteads. Secondly dung, wastes and other excreta can be converted into energy and residual fertilizers.
5. **Prof. J.M.S. Verma:-** Prevention admittedly is better than cure. Before we think of bringing down air or water pollution levels the need is to prioritise emission reductions and that needs attitudinal changes and motivation. The best way is to include in education at all levels subjects of environmental sustainability and climate

change responses/action needs. Both at the national and state levels we need to develop clean environment policies and action programmes which can minimize adverse environmental impacts and also climate change negativities. And such policies, in order to succeed, need full political commitments.

6. **Sri K.N. Trivedi:-** Emissions that are carbon load oriented have to be brought down substantially. We produce most of electricity from coal. The need is to shift to renewable energy—solar, hydro, biomass and gas based. Even in the use of coal combustion use of critical technologies can reduce emission loads. Agricultural wastes are burnt in fields which means more GHG emissions. These wastes can be converted into biomass based fertilizers. Vehicular pollution is increasing and that needs to be minimized by adoption of better technologies. We need to incentivise renewable energy. The costs of solar energy are coming down and that means opportunities for producing and using more of it.
7. **Sri A.C. Bagchi:-** In U.P. we have plenty of sunshine available and this needs to be tapped in a big way for energy production and use. Since open lands are not plentiful in U.P., it is the use of roof-top solar panels that we need to concentrate upon. But that can become more feasible if it is also grid-connected. Water harvesting needs to be foregrounded. Industrial emissions can be brought down by adopting available modern technologies and production processes. The objective should be to shift all domestic cooking to become gas-based.

8. **Sri Sheel Asthana:-** Policy making is done at the government level and it is administrative and technical set-ups that prepare policy papers, get government approvals and then implement policies. So, in all training set-ups and institutions, renewable energy, emission reductions and environmental safety issues must become prime subjects and contents of training programmes.

9. **Km. Pragya Shukla:-** Apart from including environmental safety and sustainability issues in school and college curricula it is teachers in these institutions who need to be the new focus for achieving the goals of limiting atmospheric warming to 2°C. This is also what the COP-21 at Paris (Dec-2015) has in broad terms flagged with the addition of an ambition-led (desirable) objective of

hitting the 1.5°C level. These are bold milestones which cannot be reached without extraordinary efforts, full inter-country co-operation, development of technologies and innovations and their transfers, and financial assistance from developed to developing countries.

10. **Dr. Chandani Bala:-** The emission and pollution reduction are important issues and discharging of this responsibility rests on the shoulders of every citizen. We need to start from families, neighborhoods, schools and higher institutions of learning and also cover industries and other types of economic (like e.g. thermal power, crop residue burning, etc) activities that add to emission loads. Another important requirement is to ensure safe waste and garbage disposal in environmental safety and security modes.

(C) OBSERVATIONS & RECOMMENDATIONS

1. Of the multiple looming global challenges of the twenty-first century the world is facing, one of the most defining and decisive ones is that related to climate change being experienced globally. Vast scientific evidence has already accumulated over recent decades that points to serious dangers looming ahead. A few years ago, in 2009, the U.N. Secretary General expressed deep C.C. concern. He said, "I have seen shrinking glaciers in Antarctica and the Andes. I have seen effects of deforestation and loss of biodiversity". He sought and appealed for an ambitious, effective and fair agreement through which rich countries would cut GHG emissions while supporting poorer countries as they adapted to the

adverse impacts of C.C. He added to say that, "ultimately solidarity and common cause must be our greatest strength". Five years later, in 2014, while launching the IPCC's latest C.C. related assessment report (ASR-V), UNSG flagged again with much greater emphasis the rising dangers of C.C. He said, "With this latest report science has spoken yet again & with much more clarity". This sounding of alarm calls for united action by all nations which must include time-lined action programmes, investments and technology transfers.

2. Anthropogenic (human caused) emissions of green house gases (mainly CO₂) are, by and large, the main causes of global warming and changes in climate observed.

Most governments, international organizations and conferences (COPs) are deeply concerned about rising levels of pollution, health hazards and adverse effects of the rising atmospheric temperature. Before we think of bringing down air or water pollution levels the need is to prioritise emission reductions and that requires attitudinal changes and motivation. The best way is to make education at all levels include subjects of environmental sustainability and climate change responses / action steps. Both at the national and state levels we need to develop clean environment policies and action programmes which can minimize adverse environmental impacts and climate change negativities. And such policies, in order to succeed, need full political commitments. In all sessions of Parliament and State Legislatures these issues must be agenda priorities.

3. Finances, development of technologies trained human resources and strengthening of institutions are important requirements of successful and effective achieving of the aims of climate change policy. The National Plan for Climate Change was formulated and announced in 2008. It comprised 8 Missions (Solar Energy, Energy Efficiency, Sustainable Habitats, Water, Sustainable Himalayan Eco-systems, Green India, Sustainable Agriculture and Development of C.C. related Research Knowledge). Four new Missions have been added in 2015 (Wind Energy, Human Health, Coastal Area Protection and Waste to Energy Missions). However, at the ground level the execution of these Missions is slow, sporadic and

inadequately monitored except in case of solar and wind energy where some progress has been made. The need is for dedicated and empowered institutional mechanisms and resources to integrate monitor and evaluate the progress of the implementation of these Missions and apply speedy and effective corrections where needed.

4. All States were required to formulate State Action Plans for Climate Change (SAPCCs). Many have not. Uttar Pradesh got an SAPCC prepared through consultants towards the end of 2014 which has a 4 year span (2014-18) and proposed investment cost of around Rs. 46,000 crore. A State Level C.C. Authority with CM (U.P.) as its head also been set up but we have still to come across any funding, organizational set ups and any target oriented goals programmes and projects in these contexts.
5. In U.P., too, the Dept of Environment should be redesignated as Dept of Environment & Climate Change. A State high level institution named as State Climate Change and a Training Institution dedicated to C.C. related HRD and action programmes and planning thereof needs to be set up which should function under the State C.C. Authority already set up with C.M. of the state the as its head.
6. At present there exist no mechanisms and institutional arrangements within state government to develop and mobilize integrative knowledge for scientifically planning C.C. responses and monitor their implementation. The institutional arrangement suggested above can help meet such

needs but only limitedly. Such needs are of diverse types. Firstly, capacities of different governmental agencies (including concerned PSUs & institutions) need to be developed in C.C. contexts. Secondly, the cross sectional nature of C.C. problems and responses require that officials of different government departments and agencies understand linkages with other issues areas of action like, for example, environmental security and sustainability, agriculture, land and water management, energy development (specially renewable energy), urbanization, rural development, emissions minimizing industrialisation and so on. Both administrative and technical cadres would need to be specially trained in C.C. related areas and where needed, specialists even from outside inducted to enhance capacity building.

7. An effective way to enhance public awareness, sensitivity and participation would be to include C.C. related knowledge in all educational curricula. As of now it has already been mandated that all educational content and syllabi must include imparting of environmental safety and sustainability knowledge from primary upto higher secondary education levels. To this mandate can be added C.C. responses and action steps related knowledge. This would require also training teachers in these areas.
8. While the Planning Commission may have been abolished at the Centre the process of

planning has to continue both at the central and state levels to provide direction, speed and consistency to development processes. Monitoring, evaluation and application of corrective measures must proceed to achieve development goals in complementary and consistent modes. And, in each government department / institution / PSU, annual and medium term plans will continue to be made. Even plans at the district level are made periodically. Such plans must include specific chapters on both environmental security/sustainability and C.C. responses. In fact the State Action Plan on Climate Change already got prepared in U.P. will need to be integrated with the overall processes and programmes of planning in the State. Additionally but importantly, demographic stabilisation must become a time bound goal. Resources will need to be mobilised for these planning strategies and processes.

9. It is important to generate and foster public participation to effectively respond to adverse C.C. impacts and support state policies and programmes. The need is to fully involve urban and rural panchayats at all levels (Gram, Block and Zila Panchayats and Nagar Panchayats, Municipalities, Municipal Corporations and Development Authorities). Yet another important way is to take on board NGOs and Voluntary Organisations in these contexts and enlist their co-operation and support.