

Report on Conference on Climate Change and Mitigation

World Organisation of Students & Youth (WOSY) and The Energy & Wetlands Research Group, Centre for Ecological Studies, Indian Institute of Sciences, Bengaluru have jointly organised a seminar on “Climate Change & Mitigation’ scheduled on 31st Dec. 2015 at IISc.

About 210 student delegates representing several prominent institutions/universities from Bangalore, and hailing from about 20 different countries attended the conference. The conference was planned on plenary and in thematic sessions. The conference also had deliberation on the recent concluded Climate Change Conference, COP 21. The conference was inaugurated by Dr. Vaman Acharya, former chairman Karnataka State Pollution Control Board. In opening remark, Mr. Sanjeev Ningombam (International Secretary, WOSY) spoke on the timely planned seminar on the subject. He appreciated the idea and effort of countries coming to a consensus on climate change in COP 21. He further stressed the need of youth to take the alarming issues seriously and take responsibility in their capacities to address the need on climate change. Dr. Acharya very candidly spoke on the issues of climate change citing examples and relevance which was predominant since decades. It has been reported in Indian history that Lord Krishna chose to move from the city of Mathura to Dwarka, due to the changing climate and pollution. He preached the several reasons behind climate change – namely the undeterred growth of the sun, continuous movement of the tectonic plates, detrimental effects of deforestation and the current effects of industrialization. He is of the opinion that the per capita usage of carbon by India must be reduced to ensure a livable planet in the near future.

The conference was divided into three sessions. The first session focused on 'Climate Change and It's Impact on Water Resources' and saw **Prof. D Nagesh Kumar** (Chairman, Center of Earth Sciences, IISc) who explain about his research in the field of hydrological engineering. It was followed by an interactive discussion with young research scientists such as **Dr. Durga Madhab Mahapatra** (IISc) and **Mr. Mohammed Salim Ali** (Senior Research Scientist, CSTEP) who answered the pressing questions of the delegates on current alternatives to climate change mitigation, brought forward by the youth of India.

The Conference touched over the details discussed by over 196 countries that convened at the COP21 conference, Paris. It also brought forward several discussions on research conducted by the speakers such as Prof. D Nagesh Kumar (Chairman, Centre for Earth Sciences, IISc) and Prof. T V Ramachandran (Co-ordinator, Energy and Wetlands Research Group, CES, IISc). A key point to be noted, would be the several engaging questions that were put forward by these young delegates gathered here, which provoked several researchers of the field to proactively think of alternatives to mitigate climate change. A delegate from Afghanistan, Hashir, even questioned on the efforts of the developing countries who have not contributed to the majority of the climate change and received a

detail explanation by these research scientists on new developments in technology that monitor the effects of climate change on natural resources and aim to reduce negative effects.

The First session of the conference saw Prof. D Nagesh Kumar (Chairman, Centre of Earth Sciences, IISc) educate the delegates on his existing and ongoing research on the effects of climate change on Indian hydrology and the use of upcoming technology to tackle the issue. Several models of hydrological engineering that are prevalent, and in use, in Bangalore were explained by prof. Kumar. The audience listened intently as he explained the concerns of hydrologists today and how they use the technology present today to predict future patterns of river basins. His major concern that climate change had triggered, was the decrease in water supply which is also an existing problem in Bangalore. He reported that Remote Sensing and Digital Elevation Models are the currently-used technology used to calculate the several factors that affects water bodies in India. He explained the use of the D8 algorithm to calculate future projections of decrease in water supply and the processes that must be put in place to prevent the same. Though he was questioned by several of the delegates, he went on to explain how his research contributed in the establishment of water sheds and storage systems, especially in water basins of Karnataka.

Post-break, the conference resumed with an interactive session with young researchers such as Dr. Durga Madhav Mahapatra (Center for Ecological Sciences, IISc) and Mr. Mohammed Salim Ali (Senior Research Economist, CSTEP). Dr. Mahapatra and Mr. Ali answered the intriguing questions from several curious delegates about the existing practices in place for the mitigation of Climate Change. Dr. Mahapatra has been a consistent contributor at IISc with his research in the effects faced by water bodies in Bangalore, due to climate change. He has, with the help of Prof. T V Ramachandran, submitted several research documents to the Govt. Of Karnataka to ensure that policies are kept in place to check the adverse effects of pollution. Mr. Salim Ali has been known for his work in efficient use of resources in financial and energy models to combat the effects of climate change. One of the concerns voiced by a delegate from Zimbabwe (Erica) was about the improvement of infrastructure, to aid better adaptability of the changing climate.

The second session revolved around Prof. T V Ramachandran's research in the Western Ghats about the relation between forest cover and the level of rainfall. Green-house gases, though vast in number, are predominantly a man-made contribution. The ever-increasing levels of Carbon Dioxide, Methane, Vapour and fine dust particles are causes of concern as they inhibit natural processes such as the rain water cycle and the trapping of heat by the atmosphere. He briefly spoke about the current effects of glass-houses in increasing GHG (greenhouse gases) emissions. He cited

his current research in Western Ghats to explain the impact that forest cover had over the rainfall that a city like Bangalore received, and showed a direct co-relation between the two. Since 1992, the forest cover present in Bangalore has decreased due to the influx of industries in these areas. This has resulted in a decrease in the water bodies present in the city and has also destroyed the inter-linking drainage system present between these water bodies, reported Prof. Ramachandran. He also spoke of the effects that the increasing urbanization has on the environment and the population of Bangalore. Growing urbanization, and the after-effects of Industrialization, have now resulted in serious repercussions like the loss of forest area, loss of water bodies, growing water population and thus an influx of diseases and psychological illnesses. Prof. Ramachandran went on to co-relate the effect of increased pollution on the health of individuals today. He cited the after effects of severe pollution in Bellandur lake and the issue of froth development.

The Chief Guest of the valedictory session of the conference was Shri Prakash Javadekar (Minister of State (IC), Environment, Climate change and forest (Govt. of India) who shed light on India's contributions to the Paris Agreement (COP21) held recently. He spoke about PM Modi's vision of climate justice to all nations and his on-going efforts in the field of national cleanliness and maintain international networking to ensure a global improvement. Shri Javadekar's firm opinion was to not oppose international efforts to tackle climate change, but propose alternatives to mitigate the issue. He also mentioned how the fund raised by the developed countries, for the aid of developing countries, must be used for both mitigation and adaptability. This was one of the topics of discussion at the Paris Agreement. He passionately stated that the effects of the Industrial Age, as inflicted by the now-developed Countries or Annex 1 countries cannot be stopped. Thus these countries must bring financial aid to ensure that the developing countries still hold a scope for development, without endangering the environment anymore. He concluded his session by receiving questions from several delegates and explained further on the policies that will be implemented to ensure that India holds a scope for development in the recent years to come, while implementing the alternatives to mitigate climate change. In answer to one of the delegates, who questioned on existing indigenous practices for mitigation of climate change, he stressed on the importance of small actions of conserving resources of water and electricity. He also implored the youth to return with thoughts of action and to ensure that they contributed to both scientific and technological advancements in this field.

Dr. Nandhini.N, Chairperson, Dept. of Environmental Sciences, Bangalore University and Dr. T.V Ramachandra, CES, IISc were present on the valedictory session as well. Dr. Nandini N further discussed the terms of the Paris Agreement and praised the efforts that were put into coming together for a global cause.

In conclusion, the conference received varied opinions from the young and old alike, come together for a good cause. The motto of the day changed from a " better world for the future generations" to "a better tomorrow for ourselves". One can only hope that the delegates that attended the

conference will carry forward these loud messages and implement them in the days to come.