



**2<sup>nd</sup> NATIONAL CONFERENCE**  
**“ROLE OF SCIENTISTS & ENGINEERS TOWARDS SOCIAL**  
**RESPONSIBILITY IN DEVELOPING COUNTRIES “**  
**17 JANUARY 2010**  
**NAGPUR (INDIA)**

**Conference Organizer:**  
**As part of INES Arranged by;**  
**Indian Institute for Peace, Disarmament & Environmental Protection**  
**Indian Campaign to Ban Landmines & Cluster Munitions**  
**International Physicians for Prevention of Nuclear Weapons (IPPNW)**

The National Conference of International Network of Scientists and Engineers for Global Responsibility (INES) was arranged on January 17, 2010 at hotel Center Point, Ramdaspath, and Nagpur, India. The theme of the conference was “Role of Scientists and Engineers towards Social Responsibility in Developing Countries”. 82 Scientists and Engineers from all parts of India attended the conference.

Conference aimed at sensitising and informing the scientists, engineers, civil society, bureaucrats, politicians, policy makers, media and national authorities. Eighty two participants from all the parts of India attended the conference. Participants included various high ranking scientists, engineers, researchers, policy makers, intellectual’s, legal experts, scientists, social workers, young scientists etc.

The National conference was divided in two sessions with the morning session dedicated to speeches, presentations and a general discussion, and the afternoon session devoted to group discussions and brainstorming on various topics.

The presentation structure and content were formulated to ensure a clear understanding of the problem faces by the developing countries of energy for development and the trends in the worlds to go for clean and environmental friendly energy, nuclear weapons, small arms, landmines & cluster munitions.

The objective of the discussions was to make the participants understand the necessity of the role of civil society and as part of civil society, role they could play in minimizing the impact on society and environment.

Many visual supports were used to guarantee a better understanding of the different topics.



informed the work of ICBL & CMC, IANSA, IPPNW and other NGOs & civil society for the various causes and request scientist and engineers to associate themselves for the social cause and became the member of INES

### **ADMIRAL RAMDAS DELIVERING HIS KEY NOTE ADERESS**



**Admiral Ramdas, former Chief of Indian Navy** in his inaugural speech said that scientists and Engineers should have to do a lot of things which are relevant to society and people of the country. No doubt, the future is technology but scientists should not forget their moral responsibilities, Admiral Ramdas highlighted that judicious and religious use of technology is must. Scientists and engineers should be committed to great challenges in new era. The speech of Ramdas was a real eye opener. He took the brief review of developments and happening in Social and technological fields. We are blindly following footsteps of western world without any social and moral responsibility. In the name of SEZ Government is grabbing lands of poor in rural areas by depriving them from daily breads. In China only 5 out of 1000 SEZ remained but in India we are creating SEZs.

There are more than 80 percent of populations living in poverty still some people are busy in showing their money power. Asking a question, do we really have a social responsibility? Scientific & engineers community in the country at large did nothing for the benefit of common man. He highlighted the 6 challenges which are being faced by new generation. Climate change, honesty in work, sense of responsibility in scientists, public servant etc towards people, terrorism, disarmament, nuclear weapons, disaster management and receptivity of elders for younger generations are a major challenges are not understood and managed effectively. We are

No. 3 in technical manpower but 80% of our population living under poverty and big problem in energy consumption. He quoted Gandhi "I will not rest till no one person will shed tear". There will be good and bad scientists. Global warming is one of the major problems in our country as well as in world. We must seriously think about it, or it will bring catastrophe. Situation and appreciation are must go together. He said "There will no science without religion and there can be no religion without science. While inventing we do not share certain value of ethics.

Unfortunately we have a serious problem around out neighbourhood. I am really happy that in our country military is not interfering in politics and this is our strength and it should be sustain, We are facing tremendous challenges and it is the nuclear weapons. Nuclear Weapons states have nuclear weapons by which we can kill each other 1000 times. There is no transparency in nuclear policy in the world. It is necessary for the people to know about the danger.

Admiral Ramdas said why the person like me serving Indian navy for 44 years and 9 months is propagating Nuclear disarmament and disarmament. India Pakistan fought 3 wars but we could not solve out our problem. By possessing nuclear weapons we could not solve our problem. The vehicle of change is ultimately with people. Nuclear wars may start due to misunderstanding between India and Pakistan. It takes only 8 to 10 minutes for missile to reach its targets in India and Pakistan and it has only 3 minutes to decide the missile is carrying nuclear war heads or conventional weapons. Nuclear weapons are not military weapons but are a political weapon. Nuclear weapons are economical burden; economical disaster; completely inefficient and ethically and morally it is not acceptable. Admiral Ramdas quoted Mahatma Gandhi After bombing of Hiroshima Gandhi said, "No weapons can be destroyed by counter weapons".

Under the disarmament issues he heighthed the illegal trade of small Arms and light weapons, landmines and cluster munitions. Admiral Ramdas praised noble laureate Ms Jody Williams for her foresight and tremendous work on Ban Landmines. International Campaign to Ban Landmines (ICBL) has paved way for the work of civil society in disarmament and this is one of biggest success story of civil society and NGOs towards a disarmament. He appeals to the Indian Government to sign the Ottawa Treaty as early as possible. He has also appeal for the banning of cluster munitions on humanitarian ground.

He praised the efforts of Dr. Balkrishna Kurvey who is working to spread the message of INES in India including nuclear weapons, small arms, landmines & cluster munitions and other issues.

**Mr. Date: Chairman, Institution of Engineers of India** said that the conference "Role of Scientists and Engineers toward social responsibility in developing countries cover the basic aim of INES working for issues related to energy, global warming, environmental protection, disarmament and role of engineers and scientists. The industrial revolution and further developments of the processes involved in manufacturing resulted in lot of pollution of the environment which was considered as necessary evil for the development. This has resulted in depletion of Ozone layers which created awareness and the movement for the protection to restrict the release of unwanted substances and toxic material in the environment. The engineers and scientists should work together for new ethics called as Environmental Ethics. In educational field, it is necessary to add environmental engineering curriculum in harmony with social and

economic goals to all branches, and made compulsory to all working in Industries. Fossil fuel is limited and now we must seriously start working to use solar, wind and other environmental friendly sources to create energy which will help in minimizing Global warming. The rise in the atmosphere is due to Steam, Carbon-Di-Oxide, Mithane, Nitrous Oxide, Chloro-Fluro and Ozone. We are adding the pollution and that created the problem of Global Warming.

The Engineers and Scientists are the builders of the nation and have major role to play in making the life on this earth beautiful by integrating eco-friendliness in our thoughts and action. He thanks Dr. Kurvey for educating regarding small arms, landmines and cluster munitions. He urges the scientists and engineers not to take such inhuman projects and invent some ways and means to get rid of this inhuman weapon.



**Mr Saini, Director, National Civil Defence College, Ministry of Home Affairs, Government of India** said neither I am scientists or engineer but work with them for civil defence. Students not taught to protect themselves. Scientist and Engineers should come forward and pass the information to the people which are dangerous. Engineers should start working to build the safe houses and he has given the example of earthquake in Bhuj, Gujarat was due to overhead water tank many people died. Engineering liquid carrying trucks are major cause of accidents in India. Energy saving is must for all developed and developing countries. Start the use of CLF bulbs which will save 50 Watt per day per house and we will save million of CO2 which are spread into atmosphere by power plant. We must ratify our mistake.

He dealt in length the nuclear power. It is use for peaceful work in food product, biological toxins, Medical purpose etc. We have to understand and safety must be adhered to. Our Institute is working to minimize the effect of nuclear radiation. In case of all out nuclear war, world is doom and 2012 will come true. Every nation come forward and think seriously on disarmament issues of various weapons like nuclear, small arms, landmines & cluster munitions. .



**Dr. Tapan Chakarabarty, Director, National Environmental Engineering Research Institute (NEERI), Ministry of Science & Technology, Government of India** said that all the Institutions carrying out Research & Development (R & D) should bear the responsibility towards society. Prosperity can bring peace but it should not be based on annihilation of environment and blood and sweat of people. Today worldwide we are talking of Global responsibility, . 1000 scientific and industrial research is going on but it must base on the social concern and Scientists and Engineers must adhere to social responsibility.

There is strong discussion going on in developing countries regarding should genetically modified crops should be releases or not? NGO should come out and informed the public regarding its feasibility. You can capture the local market but we have to see the wider horizon. Two days back I was in Sunderban area of West Bengal. Flood water used to make havoc in this part. But flood water could be making into drinking water. Researcher invented cheap and easy to handle units which convert flood water into drinking water and 200 units were distributed through Ramakrishna Mission. NEERI has a mission and working for cheap solar electricity and other environmental friendly natural resources to create energy. Scientist and Engineers must

observe that they are part of society and they have social responsibility towards fellow citizens. We are facing lot of problems, but we should adopt. Innovative cost reduction and as per local situation. Scientists and Engineers should invent some methods to minimize the destruction caused by landmines and cluster munitions. Such type of National conference in India is a good step to raise the awareness of the issues among the scientists and engineers and people.

**Dr. Ramesh Thakre, Vice-Chairman Bharat Krishak Samaj, Former World Bank/ADBEx. World Bank/ADB/USAID-Project advisor in Africa** addressed the delegates on **Effect of global warming**. Agriculture likely to suffer from climate change. The hungry and poor will be mostly affected in developing and under developed countries. Agriculture is likely to suffer losses because of high temperature, droughts, floods and soil degradation threatening the food security. The Middle East and North Africa are particularly exposed to water shortages. 155 to 600 million people may suffer an increase in water stress in North Africa with a 3 degree Celsius temperature rise. Changes in temperature, rainfall and climatic extremes will only add to the stress on agricultural resources in a region, where land availability and degradation, food price shocks and population growth are already a major concern. Agriculture should be promoted as a key player in the reduction of greenhouse gases. Conservation agriculture, water harvesting, forestation, sustainable management of forests and rangelands, solid storage of carbon, improved fertilizer use and careful promotion of bio energy in climatically suitable should be applied to mitigate climate changes. Dr. Thakre in detail dealt with the annual greenhouse Gas Emission by various sectors.

Dr. Thakre said that there are around 8,000 edible plants used by humans out which 150 are under cultivation. 10-20 species provided all the food required for humankind. It indicates that there is still much scope for the newer crops species and here the role of scientist and engineers begins. There is a need for efficient water use. We all have something to give to this world. The question is what are you contributing to make the world a better place to live? Need of the hour is to save and protect the biodiversity, for our food security for the man kind and for this we need to work together. We have to use technologies and also three R: Reduce; Reuse and Recycle our resource to benefit the progress and protection of Bio-Diversity is very essential. We have to work on (1) to maintain the consistency of the results; (2) adhere to the rules of fairness; (3) goal-oriented rationality and (4) to ensure the effectiveness of the mechanism. I feel I very strongly believe that, for the climate change and or global warming in this world, we need to work together. All nations must work together and for this we must use the knowledge and wisdom and use the principle as in Sanskrit saying “ANO BHADRA KRATAVO YANTU VISVATA” mean “LET THE NOBLE THOUGHTS COME FROM ALL OVER” and we must use this to guide and protect our world and its diversity in this global warming which is affecting the climate change and our environment.

On disarmament issue, he informed that I was in Africa for 28 years and travelled extensively and seen the catastrophe and havoc caused by landmines and small arms. Due to leadership of Nobel laureate Jody Williams the landmines scourge is minimize but we have to work for cluster munitions and small arms and scientist and engineers must associate themselves with this humanitarian organizations and work for mankind.

**Dr. S. M. Taley, Professor of Agriculture Engineering and Director Agro-ecology and Environmental Center, A.D. Agriculture University.** In India as well as in all developing countries and under developed countries agriculture is main livelihood business. Due to scarcity of water, agriculture production is diminishing. We have to involve more and more farmers and motivate them to undertake more responsibilities to enhance the water use efficiently both in rain fed and irrigated farming. Dr. Taley informed his research work which is “More Crop per Drop of Water” which solve water crises in agriculture in developing and under developed countries. Rainwater Management, Hydrologic cycle. Total water on Earth is Saline water 97%, Fresh water 3% (35 million km<sup>3</sup>). Fresh water is consist Frozen in ice caps and glaciers 75%, Deep underground 14% and Surface, ground water, lakes, rivers, soil moisture and atmosphere 11%. This fresh water is accessible from lakes 0.35%; Rivers 0.03%, Soil moisture 0.06% and Atmosphere 0.035%. The water useses in Agriculture 70% 'Industrial use 22% and Domestic use 08%

Each year nearly 34,000 people die from water and sanitation related diseases. 1.1. billion People lack access to safe drinking water and over 2.4 billion do not have adequate sanitation or no means to waste water disposal. Of the world's fresh water resources, less than 1 per cent is accessible for human use. 90 to 95% of sewage in developing countries is dumped untreated and polluting the usable water supply. Women and female children spend more than 10 million people in year carrying water from distance sources every year.

There is same amount of water on earth today as there was 3 billion years ago. By next two decades use of water by human will increase by 40%. Half the people living in Asia have no access to sanitation and access to safe drinking water. Polluted drinking water is the largest single killer of children in Asia and globally claims the life of one child every 30 seconds.

In countries where there is conflict or use of arms by warlords, planting of landmines and cluster munitions, aggravate the water situation. Water sources are diminish or polluted and many people die with water bound diseases. It has been confirmed by the study carries out by the agriculture and other scientist in Africa that landmines and use of small arms, cluster munitions denied the drinking water to the civilians. This is manmade epidemic and banning of landmines, cluster munitions and illegal arms is the way to get rid of this problem.

Scientists and engineers should come together around the world and work of ways and means to over this anomaly.

**Colonel Khedkar** I fought 1965 and 1971 India Pakistan war and 1962 India China war, Due to landmines I witnessed my soldiers lost their lives and limbs as well as civilian also became the victims. In 2002 landmines on massive scale were planted along India Pakistan border in Rajasthan, Punjab and Jammu & Kashmir. Not single bullet was fired and 'thank god there was no war' but we in Army more than 500 soldiers became the victims of landmines and more than 1000 civilians also became the pray to this inhuman weapon. We in India were not aware of the civilian victims of landmines but due to data collected by IIPDEP (Indian Campaign to Ban Landmines) the exact figures of civilians were came into limelight. Due to constant work of Indian CBL, landmines victims were awarded compensation as well as to the farmers who lost their 3 crops. In modern warfare. a landmine has a little role to play. Innocent civilians are

victims and it must be banned. As India is democratic and public oriented country, India must sign Ban landmines treaty.

India and Pakistan is producer of cluster munitions. No cluster munitions were used by both of them against each other. But this may change in future and they may use the cluster munitions. People living in the Rajasthan, Punjab and Jammu & Kashmir will be victims. For the sake of innocent civilians and humanitarian ground, cluster munitions should not be used. The momentum started by the Cluster Munitions Coalition is a commendable. Indian CBL should educate the Member of Parliaments of border state of Rajasthan, Punjab and Jammu & Kashmir through advocacy event and build public pressure on Government of India to sign the Cluster Munitions treaty.

Illegal Trade of Small arms is also one of the big problem in India in the States of North East India, Rajasthan, Punjab , Jammu & Kashmir. Advocacy events is essential to education the people as well as policy makers and member of parliaments.

Scientists and Engineers should involve themselves with this humanitarian issue. As many of you are on higher position and policy makers, educate and inform your department/colleagues and build momentum that India will sign the Mine Ban Treaty as well as Cluster Munitions treaty and work of small arms as well as for nuclear disarmament.

**Dr. Krishna Kamble**, Professor & Head, Department of Radiology and Oncology, Government Medical College spoke on “Ethics the Crus of Society and Science”, **Mr. Shrikant Pathak**, Project Coordinator, Raman Science Center, Ministry of Culture, Government of India, **Dr. R.T.Gahukar**, Ex. FAO Chief Technical Advisor to Africa, **Ms Vijay Dhande** also addressed the delegates.

#### PARTICIPANTS



Many of the participants took the floor to express their support to the INES and promised to work in India on various issues discussed in the conference.

As the participants belong to higher strata and echelon of society and some are policy makers, they all promised that they would bring the message to their colleagues and try to convince them that it is their social responsibility to work for people in our country and for world.

Participants promised to work under disarmament for nuclear weapons abolition, landmines, cluster munitions, small arms which are curse to the society. It is there social responsibility to work for the victims and strongly urge out government to sign the Mine Ban (Ottawa Treaty) and Cluster Munitions treaties.

At the end of the discussions several resolutions were approved by consensus:

1. Proper follow up to this conference is required.
2. A needs assessment should be undertaken in the region to find out the extent and magnitude of the involvement of scientists and engineers.
3. Additional workshops in various states of India should be arranged in order to raise awareness among the scientists and engineers.
4. There should be more emphasis on video presentation in the future conference since these are much more effective in carrying out the message to the participants so they should be involved in the movement

## *Conclusion*

Overall the conference was a positive experience. The conference achieved its objectives of raising awareness among the participants and mobilizing them to be more actively involved. It can be assumed that the impact of the conference was broader as the event was well covered by the local and national media.

The participants showed a keen interest in the topics covered and felt it was a good initiative. As mentioned earlier many of them were not familiar with the issue. They felt that such conference was very informative. They were very concerned by the suffering caused by the use of miss-use of science.

Some participants were promised that they will actively work on the issue by sensitizing their colleagues and communities. However it is the role of INES, the IIPDEP to keep the momentum going and coordinate follow up activities.

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