

Thousand Voices in Unison: Wakeup Call on Water, Climate, Environment and Energy Problems

Compiled by the Task Force: ICWEES-16



I THE GENESIS

The International Conference on Water, Environment, Energy, and Society-2016 (ICWEES-16) was held on March 15-18, 2016, at AISECT University, Bhopal, M.P., India. A & M Texas University USA, ICEWaRM Australia and IETE Austria were Coorganisers/Collaborators of this conference. The primary objective of the conference was fourfold: (1) To emphasize the significance of water-environment-energy nexus for the well-being of society; (2) to bring engineers, scientists, policy makers, decision makers, administrators, economists, environmentalists, and social scientists together to discuss the role each has to play in social development; (3) to emphasize the participation of stakeholders and users-in decision making; and (4) to discuss the latest developments in science and technology and their applications in the water, environment and energy areas. **However the fifth objective which emerged during the deliberations in the Task Force was to short list some of the important Policy Recommendations in the form of an article and publishes them in 'Anusandhan' – the journal of AISECT University. During four days conference over thousand people participated as keynote speakers (32) paper presentation (450) audiences and organisers. Forty points emerged of common interest during the deliberation which should reach common men as well as policy makers so that the sound of alarm reaches maximum people and at least awareness is generated – the first step for action. An innovative approach to generate chain reaction.**

II RECOMMENDATIONS

The four days conference (ICWEES-2016) was attended by around 1000 professionals representing different parts of India and about 20 foreign countries. The participants were from all walks of life-academia, industry, government, and NGOs. During the four-day conference, 332 technical solicited papers and about 32 invited keynote papers were presented. Based on intensive deliberations, the following policy recommendations emerged:-

(a) Water & Water Resources

- (i) There should be a centralized data bank containing temporal and spatial data pertaining to water resources, environmental resources, and energy resources for the entire country. Data should be stored, processed and archived, following strict international standards or criteria of quality control and assurance. The data should be available to the public for use, preferably free of cost.
- (ii) Water, environment, and energy constitute a continuum that is fundamental to societal development. These three components are the drivers of economic development. Administration should therefore be organized following this continuum and redundancy in the administration should be eliminated.
- (iii) There should be a local area long term effective water plan for individual cities in terms of retaining and maintaining the water table.
- (iv) Interlinking of river need to be taken up on a long term national perspective with central Govt control to mitigate effects of draught and flood and make effective use of flood surplus water.
- (v) There must be national policy making rivers, water resources, lakes and other water bodies' national treasures or property. They belong to all people or citizens.
- (vi) There should be a river health policy. Integrated water indices must be employed to categorize and monitor water bodies, including rivers.
- (vii) There must be heightened emphasis and action plan for conservation, recycling, reuse, more efficient use, and saving of water.
- (viii) Water infrastructure, including periodic maintenance, rehabilitation, and regular upkeep, need national attention.
- (ix) In order to reduce the quantum of water unaccounted for in urban areas, which seems quite high, proper water metering and rational water pricing are essential.
- (x) Developments in data capture, analysis, modeling and computational systems have not received commensurate application in the water sector. Policy makers must take a note of this lag and ensure the application of best science in decision

making, project planning, and engineering design.

- (xi) Small dams, tanks, and water harvesting structure conserve water and recharge aquifers at small scales and help provide irrigation water to scattered rain fed areas. Governments must multiply their efforts to realize the potential of these structures in providing water and food security to the people living in the countryside.
- (xii) In the water sector the greatest need is in the area of management of water resources, not so much in the science of water resources. Management entails enforcing laws of the land and their implementation, administration or governance, economics, society-the stakeholder, and working together.
- (xiii) All water structures, including dams, nuclear facilities, water supply systems, bridges, etc., must be assessed for their ability to cope with the impacts of climate change.

(b) Pollution & Waste Management

- (i) There must be a concerted effort to reduce air pollution in major metropolitan areas. Major causes of air pollution are automobiles and factories. The only way automobile pollution can be curbed is developing efficient public transportation systems, as has been done in Europe.
- (ii) A way to reduce industrial pollution is to reduce concentration of industries; in other words, industries should not be in selected areas. Industrial town should not permit residential colonies within and waste disposal treatment should be done independently for the industrial town as a whole.
- (iii) There is an urgent need to develop appropriate measures for solid waste disposal. Our cities and towns and villages should not become dumping grounds for waste.
- (iv) There must be a national policy for the disposal of E-Waste and Nuclear Waste including utilization of the E-Waste for the development of value added products.
- (v) There must be adequate sewage waste disposal facilities if our water bodies are to be sustained.
- (vi) There is a great deal of attention being paid to point-source pollution but non-point source pollution has not received commensurate attention.

(c) Environment

- (i) There must be a concerted effort at the central government level to reduce application of chemicals in agriculture. Chemical agriculture is having dire consequences on human health and this aspect has not received much discussion in the country.
- (ii) Climate change is impacting almost everything-water, air, soil, food, energy, ecosystem, and health. India must develop a centre on climate change studies.
- (iii) In a mission mode time a bound project, for plantation along highways and Railway tracks in rows of five trees on either side should be taken up to save the environment.
- (iv) Environmental studies and climate change should be included in all courses at UG, PG and school level.
- (v) There is need for extensive use of technology for check on deforestation and to prompt faster forestation. Forest area has reduced from 40% to 4% giving serious alarms.
- (vi) Government offices and authorities should not concentrate in big cities. Some of govt offices, regulating bodies and authorities should move to nearby rural areas to improve growth of rural area and reduce congestion of big cities.
- (vii) There is need to formulate newer standards for road building with longitivity & better sustainability using environmental friendly latest innovative technology & methodology. In present system the life of roads is very low. There is need to use newer technology to ensure better life and low maintenance cost of the roads in addition to use of ecofriendly cheaper waste material for construction.

(d) Energy

- (i) There is an urgent need to develop appropriate technology for the generation of renewable Energy - Solar, Wind, Biogas, etc. for the economic development. Potential of private universities needs to be tapped and funded to accelerate the process of green energy. Standardisation in this sector is need of the hour.
- (ii) Generation of Energy from waste is very important area which needs support from government in a big way.
- (iii) There must be a concerted effort to meet the challenges towards the generation of green conventional and non conventional energy including conservation & efficient energy auditing.

- (iv) For integrating various sources of energy a comprehensive plan need to be drawn for enforcing net metering.
- (v) Smart villages plan should be implemented in a big way with active participation of educational institution and industries. Effort should be made to make them energy efficient.
- (vi) For all the construction work for infrastructure and buildings, use of only green power (preferably solar) should be made compulsory.
- (vii) Transmission loss needs to be reduced though innovative technology in research and technology mode.

(e) General

- (i) There should be a formal mechanism of involving actively universities in plan, programme and research projects related to issue of national importance like Water, Environment and Energy with proper soft funding as well as accountability.
- (ii) While granting permission by central and state level Policy Makers/Govt Agencies for conference of such large dimension, nominating some representatives from the Govt will be an effective source of input for the concerned Ministry Agency.
- (iii) There is an urgent need to formulate comprehensive policy and mechanism by which Educational Institutes may be made an active partner by concerned Govt Department in implementing public interest plans.
- (iv) The nodal ministry should take initiative to have interaction with the conference organizers in such well attended conference as regard to identifying at least one or two segments /aspects of the conference to work further.
- (v) Different sectors of the society-stakeholders or users-must be closely involved and consulted in decision making for sustainable development. After all, decisions are made for the people. Social media can be employed as an effective channel for bringing the user closer to the decision maker.
- (vi) There is an urgent need to develop appropriate measures to resolve Water – Energy – Food Nexus Issues for the sustainable livelihood.
- (vii) As a policy restriction, all colonizers and builders should be asked to construct a public toilet complex for the labour employed by them for construction of the colony.

III CONCLUSION

Through various research papers, expert lectures case studies, presentations and keynote addresses, it came out clearly that we are approaching fast the danger zone of no return if urgent actions are not taken on war footing not only to stop the crisis on water, environment and energy but also reverse the deteriorating process. Three major tools are available. The biggest tool is technology. Technology can provide best answer to problems. Through research and application technology can provide the answer for action on all the above recommendations of the conference. The second tool is the awareness active and participation by all the stake holders. And the biggest tool to face the crisis and find solution is by unity of action between society, policy makers, action authorities and the government. Higher Education institutions can become nodal points. ICWEES-2016 has generated lot of data and came out with many solutions which have been sent to decision making authorities. It is hoped that some positive follow up will come out. AISECT University and other participations/collaborations to this conference will continue efforts as an active player by organising such international gatherings of stake holders on various issues to find solution through technology, research and participation.