

Report of

All India Seminar on “Urban Flood Management : Challenges and Strategies in India

Held during June 16-17, 2017

Delhi State Centre-IEI organised All India Seminar on “Urban Flood Management : Challenges and Strategies in India” during June 16-17, 2017 in collaboration with Institution of Public Health Engineer, India – Delhi Regional Centre & Indian Water Resources Society-IIT Roorkee. Dr Amarjit Singh, IAS, Secretary, Ministry of Water Resources, Govt of India was the Chief Guest & Shri Kamal Kishore, Member, National Disaster Management Authority was the Guest of Honour at the Inaugural Function. Shri O P Goel, Past President, IEI also graced the occasion.

Welcoming the Chief Guest, Guest of Honour, other dignitaries, Corporate Members and participants, Shri Devendra Gill, Chairman, Delhi State Centre-IEI informed that lot of efforts have been made by three organising professional bodies to comprehensively cover all the aspects of Urban Flooding for the benefit of different stakeholders. He apprised that Urban Flooding has been occurring at regular intervals in various parts of the Country, where authorities face difficult situation to handle such disaster. More than 150 Municipalities, Corporation and Public Works Department spread all over the country were approached to take maximum benefits of deliberation during the Seminar. Shri Gill will come out morewiser and confident to handle such situation in future.

Guest of Honour, Shri Kamal Kishore, Member, National Disaster Management Authority in his address mentioned that Urban flooding is significantly different from rural flooding as urbanization leads to development of catchments, which increases the flood peaks from 1.8 to 8 times and flood volumes by up to 6 times. Consequently, flooding occurs very quickly due to faster flow times (in a matter of minutes).

Shri Kamal Kishore lamented that increasing trend of urban flooding has become universal phenomenon and poses a challenge to urban planners world over. Problems associated with urban floods range from relatively localized incidents to major incidents, resulting in cities being inundated from hours to several days. He reiterated that organising fraternity to take up this matter shall be done on top priority basis.

Chief Guest, Dr. Amarjit Singh, Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation Resources, in his address complemented Delhi State Centre of IEI for jointly holding a seminar on Urban Floods Management with other likeminded professional bodies like IPHE and IWRS. He also appreciated the contribution of IEI in national development during its nearly 100 years of existence. Dr Singh acknowledged that AMIE qualification was recognized with great respect and has a big brand name, legacy and goodwill. IEI should carefully keep a watch on changing scenario and revise its curriculum to provide the highest level of education on engineering subjects and there by contribute to national development.

Chief Guest mentioned that effective and scientific use of irrigation water has helped in crop development at a rapid pace. There is a recent example of Madhya Pradesh which is now producing food grains at an unprecedented level even from areas that were not considered fertile earlier. Proper water management has helped in achieving it. Wetlands need to be properly treated. True cost of development of water supply for irrigation purposes should be built into agricultural production costs for efficient use of water in agriculture. Currently cost of water is not taken into consideration in agricultural production. Understanding of social and economic issues is as important as engineering interventions for effective urban floods management. Urban landscape should not be disturbed in an unplanned manner and proper land use planning must be ensured so that the water run-off is not blocked or affected.

Dr. Amajit Singh emphasized that Engineering fraternity under the umbrella of IEI has tremendous responsibility to plan and manage urban floods.

Mr. Pradeep Chaturvedi, Chairman, Strategic Plan Committee, IEI, in his address emphasized that flood forecasting is very important for flood preparedness and should be expanded extensively across the country using real time data acquisition system linked to forecasting models. Efforts should be focused on developing physical models for various basin sections and urban centers and the big data on the same needs to be collected and analysed for exact prediction of rainfall and likely flood prone areas in the urban centre. Operating procedures for cities should be such that there is least sedimentation or blockage of storm water drains and the sewer systems.

Shri Praveen Kumar Singh, Honorary Secretary, Delhi State Centre-IEI proposed the vote of thanks. Nearly 100 members, guests and invitees attended the function.

Gist of Recommendations

1. The Institution of Engineers (India), should serve as an umbrella organization to coordinate engineering developments with other likeminded professional engineering bodies to coordinate planned development of urban flood management. The approach used in Seminar by Delhi State Centre should also be replicated at other state centres by IEI to promote engineering professionals to focus attention on urban flood management. Large scale public awareness programme should be launched.
2. Urban flood management is a complex issue as there are multiple agencies involved. A proper coordination mechanism should be created with the coordinating agencies having sufficient administrative authority over different agencies.
3. Unplanned growth of cities should be prevented. A Master Plan exclusively for drainage should be drawn and executed so that no encroachment of natural drainage system happens. Appropriate legal provisions for damage control and compensation of sufferers must exist.
4. Flood mapping must be carefully carried out and studies be conducted for detention and retention basins on flow path to reduce peak floods.

5. Water harvesting and ground water recharging should be encouraged to reduce run-off. The quality aspect of water from storm water drain should be effectively maintained if this is to be used for ground water recharge or for any other application, as the quality is directly linked with pollutant load from catchment/drainage area.
6. Precipitation- Inter-event -dry period-Frequency (PIF) curves should be developed from rainfall records for determining storage volume of detention and retention basins and quality control of run-off.
7. Several indices e.g. master plan index, rainfall intensity index, permeability index , water-logging index, water bodies index, rainwater harvesting index, storm sewer capacity index etc. covering different aspects of drainage system may be developed to measure the efficiency of the system.
8. Desilting and removal of debris for open, covered and closed conduit drains either manually or by mechanical means must be carried out to ensure that the conveying capacity of the drainage system is restored fully, especially before onset of monsoon.
9. For cities like Gurugram, where there is no direct outlet like river, rain water harvesting by constructing check dams, percolation tanks, bio-swells, planter boxes, permeable pavements, green street and alleys, green parking etc. are very effective methods of reducing storm water run-off. Recycling of storm water (after appropriate treatment) may be undertaken for various uses.
10. For cities like Delhi where there is a possibility of back flow during heavy rains and floods, sufficient water pumping capacity should be created.
11. Public education and awareness programme should be launched on a massive scale to different mass media channels on precautions to be taken on waste disposal and garbage disposal into the local sewer system.