

Brief Note on Workshop on “Aquifer Mapping & Ground Water Modelling” held on 22nd April 2016, at IISc. Bangalore

Under Aquifer Mapping & Management Programme one day Workshop on “Aquifer Mapping & Ground Water Modelling” with special reference to hard rock areas has been organised at IISc Bangalore to finalize strategies for adoption of suitable ground water modelling applications in different hydrogeological setups, refinements of area specific protocols and develop a consensus on the magnitude of taking up of ground water modelling in the Country,

Workshop was Inaugurated by the reputed luminaries from the field of ground water modelling and management comprising **Prof.V.K.Gaur**, Distinguished Professor & Fellow of the Indian National Science Academy& Ex. Secretary, Department of Ocean Development Govt. of India, **Prof. P. P Mujumdar**, Chairman, Interdisciplinary Centre for Water Resources, IISc. Bangalore, **Prof L. Elango**, Anna University, Chennai and **Dr.Dipankar Saha**, Member, CGWB. The workshop has been attended by more than 80 delegates from CGWB, State Government, Research & Academic Institutions, ground water experts etc. who have participated in all the Technical sessions as well as Brain Storming session with full enthusiasm. During Technical sessions and Bran Storming sessions presentations, deliberations and discussions were made. List of presentations held in various sessions is given below:

Technical Session

1. Presentation on ‘Aquifer Mapping & Management in India’ in India by Dr. D. Saha, Member (SAM), CGWB
2. Presentation on Hydrological Impacts of Climate Change Climate by Prof. P.P. Mujumdar, Chairman, Interdisciplinary Centre for Water Resources, IISc. Bangalore.

Brainstorming Sessions-I

1. Presentation on ‘Ground Water Modelling – Issues and Solutions” by Prof L. Elango, Anna University, Chennai.
2. Presentation on Groundwater modelling: Methodology, way forward & Integration with sustainable management plans by Prof Shekhar Muddu, Water Resources & Environmental Engineering, Department of Civil Engineering, Indian Institute of Science, Bangalore.
3. Presentation on Groundwater Modelling - Issues And Challenges In Hard Rock Areas by Sh. M. C. Reddy, Ex- Regional Director, CGWB.

Detailed discussions & deliberation followed each of the presentation.

Brainstorming Sessions-II

1. A talk by Dr M Thangarajan, Scientist G (Retd.) NGRI on use of ground water data and its applications in ground water flow modelling.
2. Presentation on Ground Water Modelling in Hard Rock areas – Issues and Challenges” by Sh. Senthil Kumar, Scientists, CGWB, Chennai
3. Presentation on Ground Water Flow Modeling by Dr. B. Jayakumar, Ex-Regional Director, CGWB
4. Presentation on Pilot Project On Aquifer Mapping- Modelling case study in Karnataka Area by Sh. S.P.Jayprakash, Scientists, CGWB, Bangalore,

Detailed discussions & deliberation followed each of the presentation.

Concluding Session

The concluding session was chaired by Shri K.B.Biswas, Chairman, CGWB. The other dignitaries on the dais were Prof. V.K.Gaur, Prof. L. Elango, Prof. Shekhar Muddu, and Dr. B. Jayakumar. Shri K. B. Biswas has elucidated the need of aquifer mapping and management plans and mentioned about the expectation of the Government from CGWB and ground water experts in Aquifer Mapping & Management Program. He emphasized upon the need of providing total water solution for stakeholders and preparation of implementable plans finalized in consultation with the State Governments.



Lightning of Lamp by Prof. V.K.Gaur, Prof.P.P.Mujumdar, Prof. L. Elango & Dr D Saha



(L to R) Prof. Shekhar Muddu, Shri K.B. Biswas, Chairman, CGWB & Prof. V.K. Gaur on dais during Concluding session.



Address of Dr Dipankar Saha, Member CGWB during Concluding session.



Deliberations & Brain storming during the Technical sessions

Major Recommendations

- Ground water flow modelling is a powerful tool and its application for developing/refining aquifer maps and management plans should be promoted.
- In spite of complexity in hard rock aquifers, modelling in hard rocks can be done and it enables to bring out efficient aquifer management plan.
- For hard-rock areas, preferably hydrological boundaries like watershed/subbasin boundaries should be considered as model boundaries. If no such boundary is available at least 70 to 80% of the entire boundary should be known.
- For Spatial discretisation – optimum grid size should be taken based on the deliverables (e.g. 500 m x 500 m or 1000 m x 1000m or less depending on the deliverable). Finer grids can be used in areas of finer interest.
- For vertical discretisation – 2 or 3 layers needs to be considered (soil, weathered and fractured layer) to accommodate recharge to deeper fractures.
- Model prediction should also consider the climate change data.
- Ground water being a dynamic system, the flow simulations for aquifers need to be updated from time to time. Models should be refined periodically with updated databases for revalidation and reassessment.
- A National Level Group should be constituted drawing members from Central and State Govt. Agencies, Research Institutes, Academia etc. to promote use of ground water modelling as a tool for decision making in ground water management. This group may facilitate exchange of information on the ongoing works and workout strategies for capacity building of stake holder organisations and professionals.