



Hydrology Education in India

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The Indian knowledge about hydrology dates back to more than 2000 years, with the construction of old irrigation systems and diversion weirs. Most of the medieval water resources systems (irrigation tanks) had been well maintained through a participatory approach by the stakeholders. After independence, the state governments established their own "hydrology" departments/water resources research wings, in addition to the central government ones. All these agencies were instrumental in planning, construction, and maintenance of major, medium, and small dams. Almost all major universities had separate "Centres for water resources".

In the recent past, however, saturation of construction of major dams and lack of job opportunities have changed the scenario, and the subject of hydrology and water resources has lost its charm. Many universities have switched over to other subject areas, and government departments have also started to recruit even candidates without hydrology background. As a result, the government organizations are now forced to train the employees in basic hydrology concepts. This is in contradiction to other parts of the world (especially developed world) where much advancement has been made in the area of hydrology. These observations clearly reflect the dire need to re-introduce the hydrology subject in universities (and even at earlier education levels) with latest measurement and system/data analysis techniques for better teaching, research, and field activities in hydrology and water resources.

In view of this, the higher educational bodies, research wings, and other nodal agencies in India are funding for training and starting new centres/upgrading existing centres to keep pace with recent advancements in hydrology (including climate change). The Indian Institute of Technology-Bombay (IIT-B) is one of the nodal agencies for quality improvement programme (QIP) and continuing education programme (CEP) to impart the technical advancement to the teaching community as well as to the field engineers. The first author has organized 27 training programmes, sponsored by many central government and state government agencies as well as private organizations, in the areas of soft computing techniques applied to hydrology and water resources engineering. As a result, there is a growing awareness among people, especially students, on the importance of hydrology and related educational and employment opportunities. Some of the major conclusions arrived from these programmes are:

1. Basic knowledge on hydrology must be imparted at very early levels of education, by introducing a new subject.
2. Research in the areas of hydrology and water resources needs to be encouraged through strong actions. Such should not merely focus on publishing papers in international journals but aim at deriving benefits to the society at large.
3. More intensive training programmes should be conducted to better educate the teaching community and to spread hydrology education at a faster rate.