SURFACE WATER POTENTIALITY FOR MINOR IRRIGATION EXPANSION IN HAOR AREAS OF BANGLADESH

MD. REZAUL HASAN[1] & A. F. M. AFZAL HOSSAIN[2]

[1]Senior Specialist, Irrigation Management Division, Institute of Water Modelling, Dhaka, Bangladesh

[2]Deputy Executive Director (P&D), Institute of Water Modelling, Dhaka, Bangladesh

ABSTRACT

Haor is local name of saucer shaped naturally depressed areas in north-eastern region of Bangladesh. Most of these areas go under deep water during monsoon and pre-monsoon seasons due to overflow of flashy rivers and heavy rainfall. These areas are traditionally well-known for single-cropped area during agricultural seasons in dry period. Boro rice is the main dry season crop in the Haor areas requiring irrigation for cultivation. This paper focuses on the assessment of potentiality of surface water resources for irrigation in the Haor area. The study has been carried out based on limited primary data from survey and secondary data collected from different sources. One dimensional hydrodynamic model using MIKE 11 modelling software of DHI has been developed to fulfill the study objective. Besides, irrigation water requirement corresponding to the critical month has been computed using CROPWAT software of FAO. It was revealed from the model that the monthly minimum flow in the Kushiyara is around 89 cumec and more than 30 cumec in the Baulai rivers. As resources are available, the adjacent areas of the rivers would be benefited using surface water resources. However, there is some potential for surface water development from the river Surma with dry period flow which is about 5 cumec. In addition to existing irrigation equipments of 24 upazilas, i.e. sub-district, in the study area, an area of 225,552 ha cultivable land can be brought under irrigation using low lift pumps of cusec capacity.

KEYWORDS: Boro Rice, Hero Area, Irrigation Expansion, Irrigation Water Requirement, Mathematical Model