Coping with Drought: Lessons Learnt from Iranamadu Irrigation Scheme of Sri Lanka

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In the recent past, climate disturbances like erratic floods and droughts occurred frequently. Water scarcity due to drought has become one of the major issues for the assured agricultural activities in the dry zone of Sri Lanka. Iranamdu major irrigation scheme is in Kilinochchi District of Northern Province to irrigate 9000 ha of command area. The two main cropping seasons *Maha* and *Yala* are practiced under this scheme. Since this scheme is in the dry zone which receives a mean annual rainfall of 1,250 mm due to mainly North East Monsoon rainfall, there is no exception from recent drought scenerios. The severe drought condition due to the long dry spell experienced in Iranamadu, has led to inadequate water available for the cropping seasons of the latter part of *Maha* 2016/17 season. The cultivation was commenced in entire command area in a customary way without considering the water availability of the tank and less storage was available at the beginning of the cultivation due to draining out of entire water for augmentation of the embankment. However, the introduction of integrated water resource management practices was succeeded to save almost entire crop during this season with considerable increment in water and land productivity. The rainfall trends in the study area were analysed from the rainfall data collected in monthly, annually and seasonally during last 7 years (2010-2016). The tank storage variations during Maha seasons also compared. The analysis of results indicated that, the monthly rainfall distribution was not temporal, though the total annual rainfall and seasonal rainfall have not decreased. This indicates that the intensity of rainfall events have increased together increased duration of dry spell. It also observed that rainfall trend was in worse scenario during the *Maha* 2016/17, especially in latter stage. Irrigation water requirement and the operational study (water balance study) were carried out at the crisis time as well, in order to assess the water deficit. Further, area under threat due to extreme water deficit was also assed from ground level data. These analysis clearly shows that inadequate water was available for the tail end of this season. This exercise was repeated at the end of season with actual data in order to assess water productivity. In order to address this issue, alternative sources by diverting of water from the adjacent irrigation schemes and by tapping ground water from existing open dug wells and tube wells, were identified by the Irrigation Department of Northern Province. Accordingly, required quantum of water obtained through these systems, was utilized as supplementary for dying crops for their survival.

This paper narrates the experience gained and the lessons learnt by the Irrigation department and the rightful farmers, in cope of with drought scenario. It also explains the challenges and drawbacks faced in implementation of this innovative strategy. It further emphasizes the necessity for an integrated approach in irrigation and water

management as an adaptation measures during water stress period to meet the future challenges in food production in a sustainable manner.

Keywords: Drought, irrigation scheme, Northern Province, rainfall