In monsoonal climatic regions like that of Indo-Gangetic plain (IGP), sodic watersheds produce high runoff because of their low infiltration capacity and sparse vegetation, causing floods which damage property and agricultural crops. It is however possible to reclaim these lands and make them fit for cultivation by adopting fairly simple technology involving impounding rainwater in dikes treated with chemical amendment like gypsum and growing water loving crop like rice during monsoon season. It was established through large scale land reclamation in upper IGP that about 85% of monsoon rains could be stored in rice paddies without causing reduction in rice yields. Part of the rain so stored, is used by standing rice crop as green water, thereby saving irrigation, pumping and energy costs and the rest became groundwater recharge. Estimates showed that in the initial stages of reclamation, nearly 70% of the rains stored in rice paddies were used by the crop as green water and the remaining generated blue water in the form of groundwater recharge. In hydrologic sense, the sodic soils under reclamation may remain in transient state for 15-20 years for situations prevailing in upper IGP, causing a continuous decline in the green to blue water use ratio. Agricultural water use efficiency and energy requirement for pumping the recharged water increased with progress in soil reclamation. The total quantity and quality of rainwater harvested for use in the watershed remained almost the same, establishing the reclaimed sodic watersheds as efficient rainwater harvesting machines.