



Vol. 45, No. 3, pp 270-278, 2017

Indian Journal of Soil Conservation

Online URL : <http://indianjournals.com/ijor.aspx?target=ijor:ijsc&type=home>



Impact of water harvesting structures on runoff and soil loss in Ayalur watershed, Erode district, Tamil Nadu, India

V. Selvi¹, A. Raviraj², S.V. Kottiswaran², D. Suresh Kumar² and V. Geethalakshmi²

¹ICAR-Indian Institute of Soil and Water Conservation, Research Centre, Udthagamandalam-643 004, Tamil Nadu; ²Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu.

¹E-mail: sel_121968@yahoo.co.in

ARTICLE INFO

Article history:

Received : July, 2017

Revised : November, 2017

Accepted : November, 2017

Key words:

Ayalur watershed,

Runoff,

Soil loss,

Water harvesting

ABSTRACT

The present investigation was carried out during the years 2014 and 2015 in Ayalur watershed located in Erode district of Tamil Nadu, India on the impact that the water harvesting structures constructed in a watershed have on impounding runoff and trapping sediment load from the watershed. This watershed which is located in semi arid tropics had a series of 20 water harvesting structures in the form of percolation ponds, dug out ponds and check dams with a total water storage capacity of 21868.8 m³. During the year 2014, when annual rainfall of 494.4 mm had been received, the 20 water harvesting structures had impounded 8281.0 m³ of runoff and trapped 611.9 tonnes (t) of sediments in them. Similarly in the year 2015 which had received 610 mm annual rainfall, 26561.9 m³ of runoff had been impounded and 1643.5 t of sediment load had been trapped by the structures. When weighted with the annual rainfall, it was observed that the average runoff for Ayalur watershed in the study period was 18378.1 m³ and the average sediment load trapped by the structures was 1181.7 t. Taking into account 512.2 ha which is the catchment area of the last structure in the series, the soil loss was worked out as 2.3 t ha⁻¹.