

# JALKUND: A MICRO RAIN WATER HARVESTING STRUCTURE SUITABLE FOR EASTERN HIMALAYAS

Indian Council of Agricultural Research

The average annual rainfall of the North Eastern region of India is about 2000 mm. Almost 70% rainfall is received during rainy season. Hill farmers suffer from extreme water scarcity during November to March. Rain water harvesting and efficient utilization holds promise for sustainable livelihood in hills. *Jalkund*- a micro rain water harvesting structure is found suitable for the farmers residing in the hill top for small scale agricultural activities. Steps for *jalkund* making are -

**Site selection:** Soil type, depth, the purpose for which water to be used etc. to be given importance. Hill tops and upper portion of the slopes are preferred to divert water with gravitational flow.

**Dimension:** A dimension of 5 m x 4 m x 1.5 m have been found optimum for hills.

**Excavation:** Proper side slope should be maintained for all four walls to provide stability and hold the lining materials properly. For compact and heavy soils, slope may be gentle, whereas, for loose soils more slope should be provided.

**Plastering:** Plastering of bottom and all the sides of the *Jalkund* should be done with a slurry of clay and cow dung mixed in the ratio of 5:1. Such activity should be done in order to make the excavated *Jalkund* smooth and also to avoid any damage to the lining material.

**Cushioning:** Dry pine leaf or coir pith, thatch grass etc. (1 kg/m<sup>2</sup>) should be used for cushioning of the wall and bottom of the *Jalkund* in order to avoid any kind of damage to the lining material.

**Lining the *jalkund*:** Lining of *Jalkund* has to be done with the LDPE agri-film (250 micron thickness) or other lining materials like silpaulin. Trench of 25 x 25 cm has to be made around the *Jalkund* to bury the edges of lining materials and to hold the sheet firmly from all the corners.

**Water harvesting:** Water can be harvested from direct precipitation, diverting water from springs or from roof tops.

**Fencing:** Fencing of the *Jalkund* with bamboo or wire mesh has to be done in order to avoid any damage.

**Use of harvested water:** The stored water in *Jalkund* can be utilized for multiple purpose e.g. Irrigating crops, rearing livestock (pigs, poultry etc.) and for domestic use etc.

**Economics:** Cost involvement for each *jalkund* construction is about Rs. 12500. Water harvesting capacity of each *jalkund* is 30000 Litre at one point of time. At least, 50% more than its capacity is harvested due to seasonal replenishment. Thus, cost of each litre water harvested is about Rs. 0.28 (28 pasie).

**Livelihood and climate resilience:** Only high value crops such as strawberry, broccoli, cauliflower, capsicum, chilli, brinjal etc. should be grown with the harvested water to get maximum benefit. Livestock such as piggery, poultry etc. can also be managed. On an average farmers income enhanced by about Rs. 7500/- due to each *jalkund*.

Thus, *jalkund* is a suitable technology for providing climate resilience and improving livelihood of small and marginal farmers in Himalayan ecosystem.

