

Rain Water Harvesting



What is rain water harvesting ?

Rain water is a technique of collection and storage of rainwater into natural reservoirs or tanks, or the infiltration of surface water into subsurface aquifers. It also means storing water in days of abundance, for use in lean days. One method of rainwater is rooftop harvesting.

Why Rainwater Harvesting?

- Agriculture sector is the major consumer of water. In India agriculture sector consumes around 89% of total water use, as against 8% by domestic sector and 3% by industrial sector.
- Predictions are that the share of water for agriculture will reduce to 78% by 2020 AD, and eventually to 73% by 2025 AD due to competition from other sectors of economy.
- The discharge of sewage, industrial and other effluents will simultaneously accentuate.

Storing of rainwater be done in two ways

- Storing in an artificial storage
- In the soil media as groundwater

Roof water harvesting in tank



Rain water harvesting in ponds





Pond lining with HDPE

Rain water harvesting in lined ponds



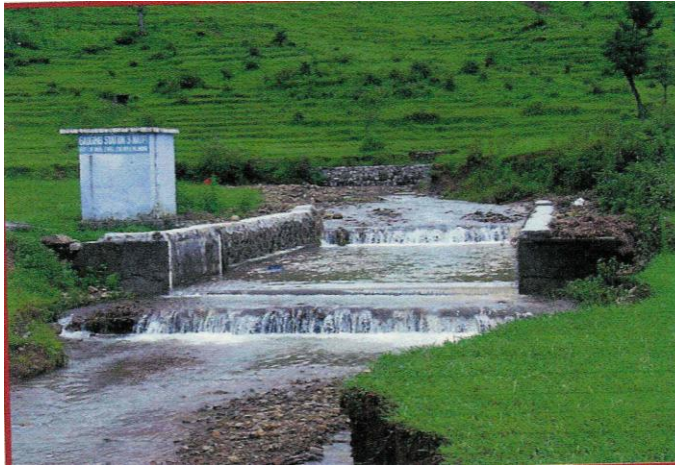


Pond lining with silpaulin

Diversified use of stored rainwater from Micro Rainwater Harvesting Structure



Rain water harvesting in watershed basis



Rain water harvesting through Mulching

What is mulching?

Mulching is the process or practice of covering the soil or the ground. Mulching can be done with plant residues material (organic mulch) like weed species, grasses, paddy straw etc. and this will help reduces the loss of soil moisture especially during dry periods. These organic materials on decomposition also adds organic matter to the soil and consequently contribute in building up the soil nutrient status. It also help in reducing the soil erosion during rainy time, minimize weed competition and improve soil structure.

through use of straw mulch, vegetable crops like potato, tomato, cauliflower, cabbage, etc and oilseeds like mustard can be successfully during the winter season with significantly higher yields due to increased moisture availability as compared to those grown without mulches.

Mulching can also be done with plastic sheet which comes at a higher cost than plant residue.

Straw mulching in different vegetable crops





HDPE mulching in different crops



In-situ soil moisture conservation

It is a simple and very low cost technique of in-situ moisture conservation. It has been developed for rabi crop (mustard) using residue of preceding maize crop grown during rainy season. In-situ residue management of preceding of maize crop supplemented with *Ambrosia* sp., a local weed, @ 10t/ha applied before sowing of mustard, maintained optimum soil moisture for supporting good germination, growth and higher yield of mustard both under terrace and flat upland situation.

Step 1



Maize during Kharif

Step 2



Ambrossia application in September

Step 3



Maize stalk cover before mustard sowing (Sept. - mid Oct.)

Step 5



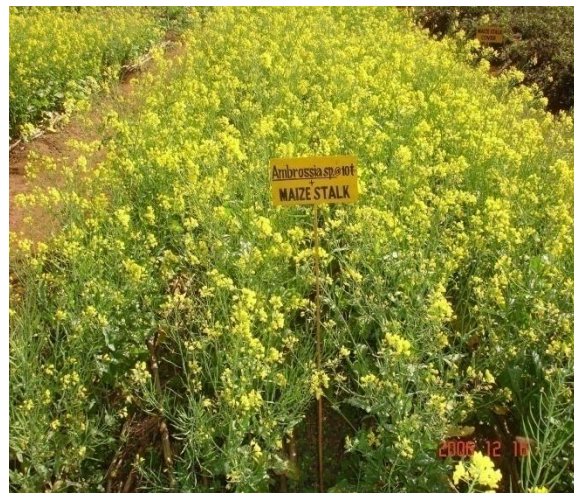
Mustard under maize stalk



Control (without cover)



Maize stalk cover



Maize stalk cover + *Ambrossia sp.* @ 10t/ha

Raised and sunken bed

Raised and sunken bed technology is a well established technology that can be used for inner plot rain water harvesting in rice field to increase the crop productivity. This land configuration generally promotes crop diversification, increase productivity and income.

Advantages of raised and sunken bed

- Better soil moisture status on raised beds
- Increase in cropping intensity
- Increase in soil fertility
- Increase in production
- Effective rain water harvesting
- Effective use of land
- Enhances income and employment



Raised and Sunken bed of Tomato and Rice



Raised and Sunken bed of French beano and Rice





