

BHUNGRU is the name of an innovative technology that is used for top-level rainwater conservation. It is a well-tested, environment-friendly disaster-alleviation technology that purifies, inserts and reserves rain water, excess farm water or storm water below the surface of the earth for use during the dry period.

BHUNGRU requires a 3 feet x 3 feet surface area to allow excess rainwater to percolate into the suitable strata of subsoil using 6 to 10-inch diameter pipes to preserve rainwater. Each unit of BHUNGRU ensures adequate amount of water during lean period for domestic, agricultural and industrial uses, starting from one to five million liters of water each year depending upon geological condition of particular place. This technology provides two dimensions of support to farmers: first, it ensures more water for standing crops in summer, and second, it reduces flooding of the farmlands during the monsoon. BHUNGRU has various designs to suit different needs.

Impact:

Preliminary investigation has shown the productivity of crops, mainly vegetables, to have increased by about 20-25% from the very first crop after initiation of this model in a farmer's field. Generally, when a farmer converts his land from chemical farming to organic, his productivity declines in the initial few cycles and only after a certain lag period, productivity starts improving. But in this case, productivity starts increasing from the very first crop. This innovation differentiates **Amrut krushi** from other cropping systems, whether organic or chemical-based. BHUNGRU also plays a very significant role in the augmentation of ground water levels in a particular area, as each unit of **BHUNGRU** preserves enough rain water to irrigate 10-15 acres of farm land for 3-4 months during lean period, provided that the area receives annual rainfall of 500 mm. Delayed or insufficient rain as well as critical groundwater conditions often results in crop failure with big financial losses to farmers, leading to suicides or migration. BHUNGRU helps enormously in reducing the chances of these events.

Establishment of NATUECO models of organic crop production for nutritional security and BHUNGRU for rain water harvesting

Ranchi, Jharkhand

Sector: Agriculture

Year: 2017

Background:

The agroclimatic conditions of Jharkhand results in high acidity of soil with drought-like condition in many areas. Undulating topography with minimal irrigation channels results in rain-fed farming in over 90% of the area under cultivation. The soil productivity has decreased resulting in very low earnings for farmers when compared with that of other states. Also, the Ranchi Gowshala at Sukurhuttu under Kanke block of Ranchi district was facing a huge water crisis for irrigation of its 100 acres of land. The changing climatic conditions have affected the agriculture and ground water of Ranchi adversely. Thus, the need to move ahead from the traditional methods of irrigation was observed.

Intervention:

The NATUECO (Amrut krushi) model of organic crop production and the BHUNGRU model for rainwater harvesting are two innovative initiatives taken up to tackle the issue of agricultural produce and water crisis. The Green Revolution ensured food self-sufficiency in the country but at the same time it also caused irreparable damage to the agricultural system. There are various alternative practices through which not only



can the yield level be either sustained or increased, but the quality of the products can be improved. Amrut krushi is one such practice, which eliminates the use of agrochemicals, thereby reducing soil, water and air pollution, while also improving the quality of the produce.

NATUECO is an innovative model of organic crop production which improves crop productivity, decreases cost of cultivation and increases profitability for farmers. The Business Planning &

Development Society of Birsa Agricultural University selected one hectare of land each, at Ranchi Gaushala Neyas at Sukurhuttu, Ranchi and at Ranchi Krishi Vigyan Kendra, Angara, of Ramakrishna Mission to set up a farmers' model. Along with this, ten Kasturba Gandhi Balika Vidyalayas (KGBV) in Ranchi were also selected to set up organic kitchen gardens (Ganga Maa Mandal) in 750 sq. ft. area.