



Sustainable Agriculture and Farmers' Livelihood (SAFAL) Village: Towards resource conservation and livelihood enhancement

Jharkhand is one of India's poorest and most food-insecure states, with over 45 per cent of its population living below poverty line. The State receives an average rainfall of about 1,400 mm, 90 per cent of which (1,260 mm) falls during June to September. The unique topography of the region leads to high runoff.

Agriculture is the main stay for 80 per cent of rural population of the State. However, the sector accounts for only 15 per cent of State's Gross State Domestic Product (GSDP). The agricultural economy of Jharkhand is characterized by dependence on nature, low investment and productivity, mono-cropping with paddy as dominant crop, inadequate irrigation facilities and small land holdings. The dependence of agriculture on the vagaries of climate can be gauged from the fact that as much as 92 per cent of the total cultivated area is un-irrigated. Groundwater depletion and periodic drought compound the state's difficulties and low agricultural productivity, especially as a changing climate threatens to make the situation worse.

With poor access to resources, inputs and capacity to use modern farm production technologies and practices, the sustainability of farming sector is a major challenge for researchers, development workers and the policy makers. To help address these challenges, Centers for International

Projects Trust (CIPT), has come together with Birsa Agricultural University (BAU) to develop a Sustainable Agriculture and Farmers' Livelihood Villages Program in Jharkhand. The aim of this program is to transform the village economy and livelihoods by promoting the use of modern inputs such as improved seeds and fertilizers, storing rain-water for crop irrigation, capacity building of farmers, building agricultural information networks in the villages, encouraging climate resilience and developing value chains for crops for enhancing farm incomes.

The program initiated under the USAID supported project Water-Agriculture-Livelihood Security (WEALS) aims to work across ten villages of Angara block of Ranchi district in Jharkhand and put them on the path of long-term agricultural development and livelihood sustainability. The implementation of Sustainable Agriculture and Farmers' Livelihood Villages (SAFAL) Villages Program will benefit around 700 farmers of Mungadih, Jaradih, Sutidih, Nawadih, Tati, Chukravoha, Dablabera, Bandhuwadih, Matkamadih and Arwabera villages in Angara block of Ranchi district. A preliminary assessment of the these villages point towards poor access and use of modern inputs such as seeds, fertilizers, poor access to irrigation water and lack of access to markets. All this leads to poor production, yields and farm

income. In the designated SAFAL Villages, a set of three interventions are being undertaken which is described below:



1. Introduction of high-yielding seeds

High yielding hybrid varieties of Rice (var. 27P31) and Maize (var. 30R77) were chosen in consultation with the farmers, scientists of BAU and representatives of Pioneer Seed Corporation. Based on the willingness of the farmers to opt for rice or maize, 320 farmers were selected for rice cultivation and 310 farmers were selected for maize cultivation from 10 villages. During Kisan Divas (Farmer Mela), CIPT distributed seeds of above crop varieties and organised a training session for farmers to explain to them potential benefits of the introduced crop varieties, methods of nursery raising and transplantation and weather based advisories. The farmers were also trained on the standard operating practices and techniques to help them realise the potential yield out of the introduced crop varieties.



2. In-situ conservation of rain-water: digging ponds for the farmers

Frequent agricultural drought, despite average annual rainfall of about 1,400 mm points to the importance of life saving nature of irrigations. The state's irrigation potential is

a meagre 12 per cent, which makes it absolutely essential to harvest and re-use every drop of water. In the given scenario, there are plans to build water-storage structures alongside individual farms, where rain-water can be stored and used as critical growth stage irrigation for the crops during dry spells. In order to promote irrigation during critical growth stages of crop, twenty sites (2 in each village) have been identified for constructing small water harvesting ponds of 10ft x 10ft x 10ft size with the help of earth mover. An awareness program for farmers to explain them of the importance of rain water harvesting at farm-level was undertaken prior to site selection.



3. Weather related crop advisories

Weather and climate related information play a critical role before and during the cropping season and if provided at the appropriate time can come handy in enhancing the crop production. The farmers in Jharkhand have limited access to reliable agro-advisory services. In order to provide real time weather information, a wooden display board has been installed in each of the SAFAL Villages Program to provide weekly weather information to farmers.

Weather based agro-met advisory bulletins prepared by BAU under the Indian Meteorological Department (IMD) – Ministry of Earth Sciences (MoES) project 'Gramin Krishi Mausam Sewa (GKMS) will be displayed on the display boards twice a week. The bulletin contains weather forecast for the next 5 days and relevant farm advices in accordance with the likelihood of weather conditions. In addition, SMS advisory through mobile phones will also be provided on a daily basis to the farmers.

The initiatives will be continued for the next two years and new interventions, if required, would be added in the near future. CIPT and BAU will regularly monitor the entire process and document the outcomes which would be used for advocating for policy change in the state.