# Jalkund stimulated agri-preneurship in Sikkim through winter vegetable production

Nandok village in East district of Sikkim is suitable for the cultivation of horticultural crops due to its unique geographical location. This village receives normal annual rainfall of 3057.3 mm in kharif and 269.1 mm during rabi season. Its vicinity to the state capital Gangtok provides opportunities to quickly market produce with good returns. During the last decade, the village has become vulnerable to the adverse effects of climate change such as drought, erratic rainfall pattern, wind and hail storms. Farms are facing soil erosion and nutrients' leaching losses during kharif and acute shortage of irrigation water especially for the rabi vegetable crops. Winter precipitation during the last decade has significantly diminished leaving the farmers with reduced opportunities of rabi vegetable cultivation. However, the farmers revealed immense willingness to grow rabi vegetables if provided water, which in return would present better opportunity for income generation and livelihood improvement.

**Interventions of KVK East Sikkim, Ranipool**

After assessment of water related problems in the village, Krishi Vigyan Kendra, ICAR Research Complex for NEH Region, Sikkim Centre, East Sikkim, Ranipool intervened with the different activities under NICRA to increase the water use efficiency. Awareness on climate change, its impact on agriculture, strategies for increasing climate resilience and dissemination of advanced technologies among farmers was undertaken through meetings, capacity building, exposure visits and workshops. During the bench mark survey, PRA and focused group discussions, rainwater harvesting and storage in farm ponds for efficient utilization of rainwater was identified as a suitable intervention. Climate resilient technologies to enhance productivity and income and sustain livelihoods of the farmers in the village were also prioritized.

Mr. Gokul Rai volunteered to adopt the pond technology with capacity of 40 cu m (size: 5 m x 4 m x 2 m) on his farm. He constructed a *jalkund* for rainwater harvesting in which the runoff from the village streams was harvested and judiciously used as supplemental irrigation to grow organic cabbage, cauliflower, broccoli, and vegetable seedlings under low cost structures and manage mid-season drought.

**Efficient Use of Farm Pond Enhanced the Income**

Pre-intervention, Mr. Gokul Rai was confined to only single crop of rice or maize during kharif; leaving the field fallow during rabi season. The returns from farming were very nominal. Increased availability of water encouraged Mr. Rai to diversify the

cropping system with organic cabbage, cauliflower, broccoli cultivation and vegetable seedlings production under low cost structures during the rabi season. Efficient use of farm pond water to irrigate rabi crops during dry spells with micro-irrigation systems (sprinkler and drip) made vegetable production a profitable venture for him. It increased the cropping intensity from 100 to 216 per cent and the net returns multiplied manifold from Rs. 16,500/- to Rs. 85,250/- from his 0.45 ha of net arable land. Mr. Rai is now a successful rural youth farmer showing the path to other farmers to manage mid-season drought through farm pond technology. Mr. Rai has emerged as a commercial vegetable seedlings producer and a role model for other traditional farmers and educated youth. He has become an effective techno-agent and supplies quality seedling. He disseminates technical know-how which he constantly updates with the help of scientists and officers of KVK, East Sikkim.

**A Role Model**

In recognition of his achievements in Nandok village, East Sikkim, Mr. Gokul Rai was felicitated by Sh. D. N. Takarpa, Hon'ble Minister, Food Security and Agriculture Development Department, Government of Sikkim as **Best Rural Youth Farmer** on the 38th Foundation Day of ICAR Research Complex for NEH Region, Sikkim Centre, Tadong in 2013. Besides, he also manages **Farm Field School** on **Vegetable Seedlings Production under Low Cost Structure** sponsored by ATMA, East Sikkim.

*(Source: Krishi Vigyan Kendra, ICAR Research Complex for NEH Region, Sikkim Centre, East Sikkim, Ranipool)*