



Introduction of High Yielding Lentil Crop in Cold-Arid Fragile Agro-Ecosystem of Zanskar (Ladakh) Region of Jammu and Kashmir State: A Success Story

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Zanskar is among the cold arid inhabited highlands of the world, lying within an altitudinal range of 3500 m to 6478 m above mean sea level. It is the remotest and the least accessible part of Ladakh region and is accessible to the world through Kargil District only.

Zanskar valley (32° 52' 30" N to 33° 52' 30" N and 76° 14' 5" E to 77° 32' 4" E) is sandwiched between the Greater Himalayan Range in south-west and the Zanskar Range in north-east and is spread over 7000 Sq Km. Seasonal variation in temperature ranges from 28°C to -30°C with an annual precipitation of 250 mm. The valley remains inaccessible for nearly 6 – 7 months a year due to heavy snowfall closing all access points which is the major bottleneck in improving livelihood opportunity to the valley. The long winters start with closing of Penzila pass around November-December and the valley remains cut off from rest of the world until it opens in May.

The only option for securing the livelihood of Zanskar valley farmers is to grow crops during the limited summer season (April to September) and the valley inhabitants are overburdened during summer period in cropping, nomadic pastoralism, gathering fodder and fuel wood for the long winters. Food insecurity and hidden hunger in the form of nutritional deficiency is one of the major bottlenecks in self sufficiency of Zanskar valley and it intensifies in case of prolonged winter. Low temperature coupled with strong winds during growth period does not allow the crop to express its full potentials. Centuries of remoteness, isolation and socioeconomic marginality, makes people less receptive to sudden proposed transformation in farming. All these factors lead to food and income insecurity of agro-pastoral farming based livelihoods of Zanskar valley. Another indicator is hidden hunger in the form of nutritional deficiency. Closing of Penzila pass beyond May adds to food items scarcity in the valley. There are lesser opportunities for cash income

In order to overcome the food insecurity and nutritional deficiency, cultivation of quick growing pulse crops offers a viable solution which are acceptable to the resource constrained farming community of the valley. Further the farming community will get an additional income who hardly apply any fertilizer/pesticide to the already exhausted cultivated area.

Keeping in view the above facts, an attempt under AICRP MULLaRP Srinagar centre has been made through introduction of pulse crop (lentil) in such cold highland areas, where life is about preparing to manage long winters. The pulse crop has shown very good growth and encouraging results which needs further research, development and exploration in the



Overview of pulse cultivation in Zanskar

resource constrained areas. Lentil (variety:- Pusa Ageti) recorded a grain yield of 1278 Kg/ha with a Stover Yield of 4168 Kg/ha respectively. Further interventions will be attempted through refinement of the already standardised technology best suited to the fragile agroecosystem of the valley which will be later on extended to the other areas of the Ladakh (Kargil and Leh) region. People participation will be sought to explore the possibilities of crop improvement, crop protection for boosting the pulse crop production as an alternative livelihood option of the farming community in such harsh climatic setup. Further the farmer's will be benefitted by increasing their pulse production through creation of village seed banks where they can produce and exchange their seed material for achieving self sufficiency through adoption of recommended technologies.



An overview of training



Distribution of inputs under TSP



Farmer's expressing gratitude for inputs

Operation of TSP-programme for motivating and empowering farming community towards self sufficiency