

# Yam on terrace walls

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Yam has several nutritional benefits, yet the crop remains neglected and underutilized. In the absence of national research and extension programmes on yam, LIBIRD's initiative to promote yam cultivation on terrace walls has caught up with the *Chepang* communities in Nepal.

**T**he *Chepang* are an indigenous community belonging to Tibeto-Burmese family, mainly inhabiting the mountain ranges of central and western Nepal. *Chepang* people live a semi-nomadic life style and face high levels of food insecurity. They mainly grow maize and millets on marginal sloping lands using slash-and-burn techniques. Many of them have started practicing permanent agriculture in terrace lands in the recent years, but have still keep slash-and-burn practice alive.

Historically, *Chepang* people have been dependent on collection of wild yam and other plants like chyuri (*Aesandra butyracea*), kafal (bay-berry), githa (*Dioscorea bulbifera*), etc., from the forest. As food produced is only sufficient for 6 months, they resort to fishing and hunting, besides forest food collection during the lean season.

Yam is very important in *Chepang* people's life – as a means of food security, tradition and culture. Since ancient times, yam and *Chepang* communities are believed to have strong connections. A study conducted in Dhading district of Nepal reported that, out of the 10 of the 13 species of yam found in this district, 9 are used as food and one as a detergent. Such an exclusive use of yam by *Chepang* people makes them rich in knowledge on identification, processing and consumption of yam.

In spite of yam having various nutritional benefits, the crop still remains as neglected and underutilized species. Nationally there is no research and extension programmes on yam. One of the main reasons for this crop being neglected is drudgery or labor associated with planting and



*Harvest ready for the market*

harvesting, lack of multiple harvest, short shelf life and lack of market for surplus production. Above all, the unavailability of quality planting materials in adequate quantity is making yam cultivation less attractive than in the past.

## The initiative

It's been just few generations since *Chepang* people began practising settled agriculture. Even today, they farm on terraces and leave terrace walls unattended. Such terrace

A report of Nepal *Chepang* Association (NCA) suggests that 71% of the children are malnourished. Non-toxic wild yam of Nepal is recognized as 'Health/ Functional food' with high nutritional values. Rich in starch, yam is principal source of food and carbohydrate during food insufficiency periods for such communities. Some of the species of yam reported to have 5 times more protein than potatoes and sweet potatoes. Yam also supplements many dietary minerals. Yam can be mixed with different kinds of food like noodles and breads, which further enhances the nutritional value and palatability ultimately aiding to overcome malnutrition in children.



*Demonstration of yam cultivation in sacks at Laitak village*

lands accounts for 40% of the land and are covered with naturally grown forages. Local Initiatives for Biodiversity, Research and Development (LI-BIRD) in partnership with scholars from University of Guelph, and Canadian Mennonite University and funded by International Development Research Centre (IDRC) and Global Affairs Canada (GAC), Canada is trying to promote the use of barren and steep walls of the terraces and other areas which are least used for food production.

A simple technique introduced by the project is “yam cultivation in sacks” on the base of terrace walls. This method eases harvest of yam by planting them in sacks filled with soil. In addition the sacks with yam help reduce soil erosion or wall collapse. The sacs are placed on the terrace walls. Harvest is done by simply cutting/tearing the sacks and taking out tubers. This way farmers can grow yam on a commercial scale.

The *Chepang* farmers follow their own method of cultivating yam by digging pits of one meter depth and width on the terrace edges or walls, apply considerable amount of Farmyard Manure and plant the head of the tuber in the pit. Farmers find it easier to plant and harvest yam in edges as compared to the corners of terrace walls. They usually harvest the tubers just prior to *Maghe Sakranti*. The lands that were used as *khoirya* (slash-and-burn land) are also being used for yam cultivation.

With increased awareness among farmers about the market possibilities and opportunities, yam cultivation has been increased, while farmers have been seeking different methods of cultivating yam both in marginalised and terrace lands with minimum efforts.

### Marketing

When Muglin was the nearest market, only 25% people of these communities were able to sell their produces. People were not sure if all the production from their vegetable farm would be sold in the market. Only fruits like banana were

Many people cultivate yam mainly to eat during *Haribodhani Ekadasi* (1<sup>st</sup> day of fortnight in ascending or descending moon cycle) and *Maghe Sakranti* (1<sup>st</sup> day of month of Magh according to the Nepalese calendar) as a religious ritual. In *Haribodhani Ekadasi*, the people believe that they should not eat the food reaped from the tilled land. Likewise, there is a tradition of eating yam cooked in the last day of Poush in the first day of magh according to the Nepalese calendar. These traditions are common among other ethnic groups of Nepal. These communities also eat yam as the constituent of pickles, use them in value addition of vegetables like ‘*masayura*’ (Taro product), consumed as boiled, steamed or fried foods.

sent to Kalimati, Kathmandu, the capital city of the country, until a vegetable collection centre was established in a nearby town, Fishling. Fishling (13 Km away from Muglin), a junction point of various villages in the Mugling - Kathmandu highway, now serves as a sink of vegetables produced by adjacent Village Development Committees (VDCs) of different districts. Vegetables are collected at the collection centre in Fishling and marketed to different major cities, mainly to Kalimati Vegetable Buying and Selling Centre (about 100 Km away), Narayngarh (about 50 Km), Bhairahawa (about 170 Km) and Pokhara (about 103 Km).

Along with vegetables, yam is also one of the major commodities that is marketed through these channels. Farmers of adjacent VDCs, including farmers from *Chepang* community, are availing this opportunity to sell yam - cultivated and collected. The number of farmers selling yam at Fishling has been increasing.

A female farmer, resident of Bhulmichowk VDC, in Gorkha, harvests about 3 kg of tuber per plant on an average. It's just been couple of years since the family has started mass production and marketing of yam. While they invested 1400 NPR from cultivating yam, they harvested a quintal of yam and are hoping to earn 50,000 to 70,000 Nepalese rupees

*Preparation of sacks for transplanting yam*



(NPR). The women farmer delightfully shares that all the members of her house including the educated sons and daughter in-law support in cultivating yam.

### Spreading far and wide

This technique of farming yam on sacks was originally tested in *Laitak* and *Ahal* of Jogimara VDC of Dhading and *Patle* of Majhthana VDC of Kaski. As most of the *chepangs* of Jogimara, Bhulmichowk and Kaule have family relation in one or other way, this technology has got easily transferred from Jogimara to other places even among non-*Chepang* communities. The new way of yam farming has attracted many to cultivate yam.

Also, this unique method of planting has helped to minimize landslides on steep gradient farmlands in Jogimara, Gorkha, Chitwan and nearby areas. This has resulted in minimizing climate change risks to farming and enhanced sustainability of the farming system. Eventually, *Chepang* communities are ensured of food security and sustainable livelihoods.

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