

# Agro-Horticulture & Livestock Systems of Kumaoni people in Himalaya, India



Expert Seminar on Indigenous Food Systems  
FAO, Rome, November, 2018

Kalyan Paul  
Pan Himalayan Grassroots Development Foundation

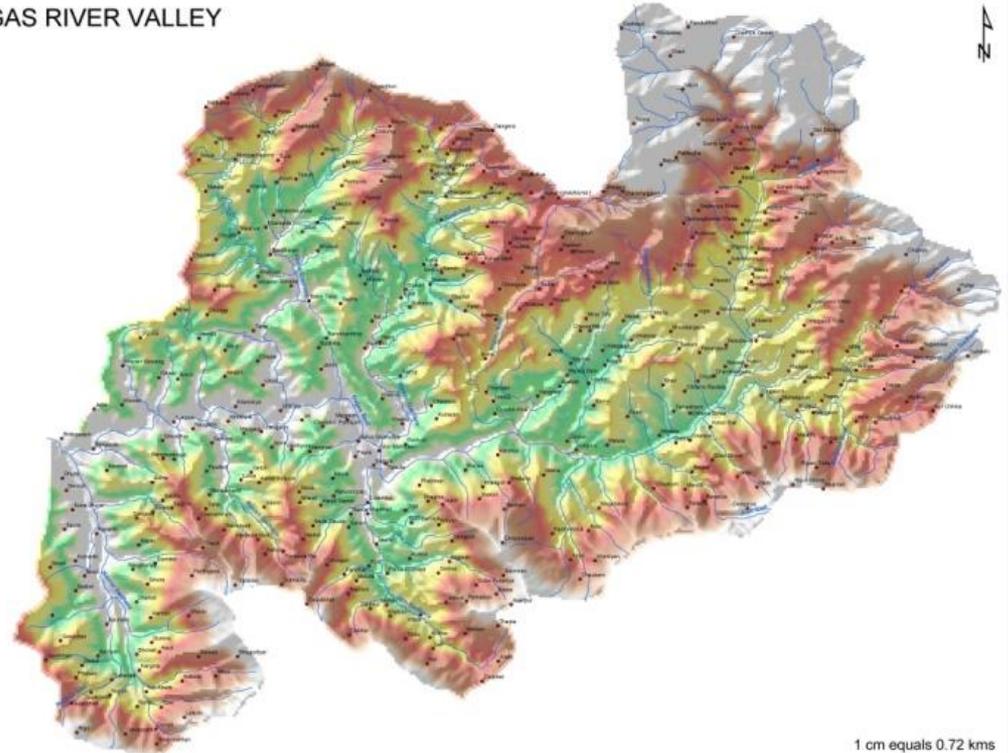
# Gagas River Basin

## Headwaters : Dudholi & Nayal Villages

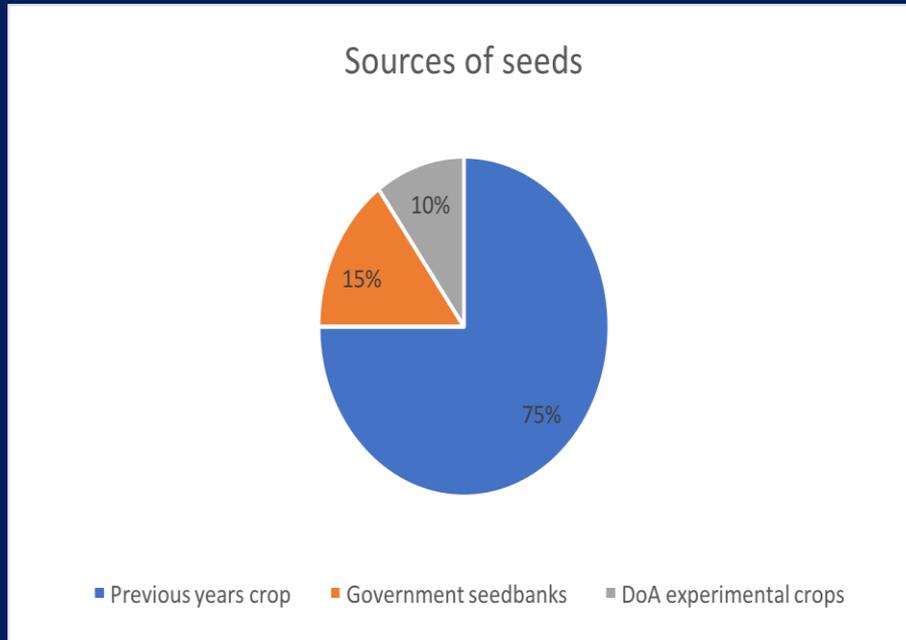
INDEX MAP OF GAGAS WATERSHED : UTTARANCHAL



GAGAS RIVER VALLEY



# Traditions and Trends in Local Food Systems



- Organic Farming, Intercropping and Crop Rotation is practiced by both communities
- Reduction in crop outputs is leading to food insecurity – sufficient production of just few crops, otherwise only for 2-3 months
- Dependence on market economy on the rise
- Agriculture as a main occupation is being relegated to an insignificant position - only 40 % of household income

# Sustainable Natural Resource Use

- » Traditionally, communities relied 100 % on collecting firewood for cooking as well as heating. Over time, dependence upon LPG and kerosene has increased. Grassroots has introduced an appropriate technology, viz., biogas digesters which provide clean renewable cooking energy.
- » Traditional *naulas*/springs have dried-up to a large extent and these communities are dependent upon government sponsored piped water supply systems from distant **secondary** water resources. Grassroots has introduced an appropriate technology, viz., Infiltration Wells as a community-managed drinking water system, based on **primary** water resources.
- » Minor upland irrigation systems operate through functional spring flows, thus enabling cultivation of vegetables and cash crops like garlic and onions.
- » Leaf litter from forests provide essential composting material and seasonal grasses provide critical fodder for livestock.

# Exchange, Trade & Marketing

- » With climate change decreasing crop yields, communities now source majority of their food from the market. Although the exact proportion varies throughout the year, markets now provide more than 70 % of the food for both communities.
- » Any surplus/ cash crops produced are aggregated for 'sale' to their FPO called Umang or nearby market. Both communities realise Rs. 2.00 lakhs annually as share holders of Umang
- » Monetary transactions have replaced the informal bartering system, although the gift economy is still in use to a certain extent. Following important events such as marriage, child birth and funerals, members of the community gift food to one another.
- » In addition to this, households donate food for collective meals which are shared during key festivals. This can be seen with the *Kuamoni* festival Harela, which occurs at the start of the monsoon season. During Harela, households grow seeds as symbols of future agricultural prosperity and share communal meals at the village temple. This practice is regarded as integral to community culture in Nayal and Dudholi.

## Diversity In Diet & Production Systems

- » Whilst traditional foods were preferred by all generations, focus groups described consumption to be decreasing as millets and other traditional crops were perceived to be inferior.
- » Diets are seasonal and are particularly influenced by the availability of fruits and vegetables.
- » Meat is rarely eaten as it is expensive and unfortunately there is complete ban on hunting, which was a tradition during winter months – wild boar and deer has currently become a nuisance as standing crops are destroyed. Alongside, the rise in population of monkey is also leading to severe stress in agriculture and horticulture.
- » Amongst younger community members there has been a recognisable increase in the consumption of ready to eat processed foods.
- » The people of Dudholi and Nayal expressed concerns about the correlation between reduced crop yields and the decreased nutritional value of their diets.

## Climate Shock & Change

- » Self Help Group – Social Capital of Rs.1.50 lakhs and Rs.5.50 lakhs at Nayal and Dudholi respectively.
- » Participation in livestock development has increased - 70 to 150 small farming families - milk collection has increased from 105 litres/day to 780 litres Dairy Incomes have risen from Rs.500 to Rs. 25,000 per day over 20 years.
- » Pulses: 6 varieties, of which 4 are for self consumption through the year and 2 varieties are sold
- » Cereals/Grains: 9 varieties, of which cultivation of 4 have stopped (2 types of millets, buckwheat, red rice)
- » Vegetables: 20 varieties, of which 3 (onions, garlic, potato) are cash crops. Most of the vegetables are grown for self consumption seasonally and some are bought from local market
- » Fruits: 10 varieties, of which 3 are sold. Apples, apricots and peaches are victims of climate change.

## **Food Systems, Institutions & Governance**

- » Traditional practice of group farming systems is still ongoing
- » Knowledge of intercropping and crop rotation exists but in practice this seems to be eroding
- » Infrastructure for post harvest processing and marketing is non-existent
- » Mountain farming systems seldom compensated for crop failures – over ten years and more the winter wheat crop has failed and almost the entire stock of heirloom seeds is lost.
- » Traditional barter systems of marketing have not been replaced adequately
- » Trend of FPOs is emerging to replace this vacuum.

## **Young Peoples Aspirations**

- » Younger generation has been educated in schools as well as colleges over the past 25 years
- » This has led to change in aspirations in both young women and men
- » Along with food insecurity, the new generation looks forward to fresh off-farm opportunities, which are seldom available within the mountains
- » Migration begins with young men and then through marriage for young women
- » It is essential to establish micro enterprises within the mountain to reduce the urge and need to migrate
- » Technological revolution would seem to be a necessary criteria to fulfill the aspirations of young people

## Way Forward

- Climate resilient SmartAgri-Horti-Livestock practices need to be incorporated into policy and practice, with special emphasis upon protection and conservation of natural resources.
- Essential to formulate a pan Himalayan action plan to establish a marketing federation amongst mountain producers, with special emphasis on promotion of traditional rain fed crops along with PGS certification.
- Aspiration of youth has to be taken into consideration, which implies a) creation of off-farm job opportunities through infusion of clean technologies, b) modernization of farming systems through introduction of appropriate technologies and adoption of post harvest technologies in order to promote value chains.

# Thank You for your Time!



Pan Himalayan Grassroots Development Foundation  
Post Bag # 3, Ranikhet 263 645, Almora District, Uttarakhand, India  
[apaul@grassrootsindia.com](mailto:apaul@grassrootsindia.com)