

WHO MAINTAINS CROP GENETIC DIVERSITY AND HOW?: IMPLICATIONS FOR ON-FARM CONSERVATION AND PARTICIPATORY PLANT BREEDING

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A network in a social system refers to the interpersonal relationship of a set of persons connected together through flow of information, goods or implementation of joint activities or other social bonds of one kind or another. Analyzing the networks of a social system traces such relationships, identifies nodal persons in the system and can capture the context of the social relations within which actors participate and make behavioral decisions. It has been widely reported that seed requirements in most farming communities are fulfilled through informal seed supply systems and on-farm management of crop genetic resources. Farmer networks play important role in such flow of genetic materials. Farmer networks have been found to be playing significant role in the flow of information in the Nepalese hill farming communities. However, study on how informal flow of seed materials through farmer's networks has been lacking. Hence farmers network analyses were conducted at Begnas and Kachorwa eco-sites to explore and examine the informal flow of rice seeds through networks, to identify nodal farmers in the networks and examine whether nodal farmers play key role in maintenance of genetic diversity.

The study employed sociometric survey using snowball-sampling technique. Initial sample of 24 respondents was drawn randomly from the respondents of baseline survey, stratified along well-being and gender categories. There after the respondents took the respondents from the sociometrically identified individuals interviewed. The network analyses show that the seed flow networks in both the eco-sites, Begnas and Kachorwa, are weak; i.e., the individuals are not well connected. There are several smaller networks. However, a few larger networks do exist in which a few individuals occupy key positions. Within these larger networks, there are several cliques (i. e. sub-network) which are inter-linked through certain individuals. Seed flows occur mainly through exchange (54-63%; grain to seed or seed to seed), gift (20-31%) followed by purchase (10-14%). The key individuals or those linking the sub-networks to one another are playing significant role in the flow of genetic materials. Some of the key individuals also have links outside the village bringing in new genetic materials, thus deploying new varietal diversity within the village.

Further analysis of the nodal persons in terms of their household level diversity maintenance shows that majority of them belong to high to medium diversity maintaining group of farmers. Thus, most farmers who occupy nodal position, are found to have more network connection within and outside the community; they play important role in the flow of genetic materials and creating and managing crop diversity on-farm. Such individuals can be effectively involved in participatory plant breeding; seed supply system and training for other purposes.