



SEEN analysis lies at the intersection of natural and social sciences. As such, it is a hotspot for the development of new methods and concepts. Meta-analyses will combine datasets on exchanged seeds and on the social relationships between giver and recipient. We will compare visual representations of social network analysis softwares such as NetDraw (Borgatti 2003), NetVis (Cummings 2003), and Pajek (Batagelj and Mrvar 2003) with a model based on a semantic graph approach (Martin 2010). The goal is to give “sense” to our data among the heterogeneity of factors in order to predict certain aspects of SEEN functioning.

Part 1: Oral presentations

Farmers' social identity and crop genetic diversity. The G x E x S model

Christian Leclerc, Geo Coppens d'Eeckenbrugge

Abstract: A better knowledge of factors organizing crop genetic diversity *in situ* increases the efficiency of diversity analyses and conservation strategies, and requires collaboration between social and biological disciplines. Four areas of anthropology may contribute to understand the impact of social factors on crop diversity: ethnobotany, cultural, cognitive and social anthropology. So far, most collaborative studies have been based on ethnobotanical methods, focusing on farmers' individual motivations and actions, but overlooking the effects of farmer's social organization *per se*. We analyze how social anthropology, analyzing intermarriage, residence and seed inheritance, can contribute to studies of crop genetic diversity *in situ*, by considering crop varieties as social objects and by designing socially based sampling strategies. Because seed exchange is built upon trust, seed systems are embedded in a pre-existing social structure and centripetally oriented as a function of farmers' social identity. The strong analogy between farmers' cultural differentiation and crop genetic differentiation; both submitted to the same vertical transmission processes, allows proposing a common methodological framework for social anthropology and crop population genetics, where the classical interaction between genetic and environmental factors, G x E, is replaced by a three-way interaction G x E x S, with “S” designating the social differentiation factors.

Does social organisation shape crop diversity? A case study among Tharaka farmers in Kenya

Vanesse Labeyrie, Christian Leclerc

Abstract: Identifying the factors that influence crop diversity patterns *in-situ* is a major challenge for its conservation. Despite the role of farmers in the construction and management of crop diversity, social factors have been widely neglected in this approach. Can different social groups living in the same environment have different folktaxonomy underlying crop diversity ? In the Tharaka community on the Eastern side of Mount Kenya, farmers living in the same neighboring group (*ntora*) usually cooperate for agricultural tasks. In contrast, cooperation between groups is uncommon and reflects the scarcity of their social relations which limits potentially the exchange of knowledge. Sorghum (*Sorghum bicolor* (L.) Moench) folktaxonomies of 95 tharaka farmers belonging to 11 *ntora* were compared to describe knowledge exchange patterns through social network. Inter-class multivariate analysis was applied to compare crop species and sorghum landraces inventory between *ntora*. The comparison of crop species inventory between *ntora* reveals differences. Free lists of sorghum landraces cultivated by tharaka farmers were recorded, enabling us to compare the sorghum



folktaxonomy between *ntora*. The names used by farmers to identify sorghum landraces were significantly different between *ntora* and reflected differences of folktaxonomy. The influence of social network on crop diversity patterns *in-situ* is hence discussed.

How many seed systems are there in a Tupuri peasant community (Far-North Region, Cameroon)?

Chloé Violon, Eric Garine, Olivier Kyburz

Abstract: If scholars now admit that farmers do not draw only from their own individual seed lot to cultivate, they have often tackled the seed fluxes through a dual pattern opposing a formal seed system to a local one. However, fieldwork in two tupuri villages (Far North Cameroon) reveals a much more complex situation and we propose to highlight the complex interweaving of seed exchange networks to study the whole range of cultivated plants rather than focusing only on the main domesticated species. We collected data of all seed exchanges in 15 households over two farming periods (around 500 transactions) and completed it with interviews about exchange norms and with direct observations. Use of network analyzing methods enables us to determine the proprieties of seed exchange networks according to the different types of plants. Thus, we can compare the differences and similarities of the structure of these networks to, finally and discuss the main factors explaining their high number. The kind of plant exchanged is not the only feature to explain the diversity of networks; preexisting social ties between partners as well as the cultural norms underlying exchange itself should also be considered. Far from being only farming transactions, seed exchanges reflect, strengthen and create social relations.

Sorghum, social links and genetic diversity in Northern Cameroon

Adeline Barnaud, H  l  ne Joly, Monique Deu, Doyle McKey, Christine Raimond, Eric Garine

Abstract: Sorghum is the Duupa 'cultural supercrop' : it is a main subject of concern for the people and the backbone of the reproduction, on a material and a symbolic way, of the community. More than forty landraces are named and recognized, and widely exchanged between all cultivators in the community. Each year, every cultivator selects panicles from his own previous crop but often mix it with exchanged seeds. Fluxes of seeds follow the lines of kinship or affinal relations, but they can also come from commercial transactions outside the community. An outstanding feature of the Duupa seed system is the institution of free access to sorghum seeds during the collective threshing work parties. Anyone attending these parties can pick a few panicles for his own seeds on the bulk of the crop to be threshed. Strong moral values underline this safety net, which makes the diversity of landraces, seeds a common property. However, these institutionalized exchanged do not account for all the gene flux and people also rely on non-institutionalized, transfers sometimes including grains for current food use rather than properly selectionized panicles. All these transfers, public as well as private, even if difficult to quantify, should be taken into account for a proper understanding of the shaping of sorghum varietal and genetic diversity.