les dossiers
d'AGROPOLIS
INTERNATIONAL
Expertise of the scientific community
Special Partnership Issue

Agroecological transformation for sustainable food systems

Insight on France-CGIAR research

Number 26
September 2021

Step-by-step co-design of agroecological innovations in dairy farming systems in Burkina Faso

In West Africa, the demand for dairy products is growing rapidly, but local value chains are struggling to emerge due to competition from imported powdered milk. Agroecology offers a promising option for strengthening the competitiveness of local dairy chains by reducing on-farm production costs and promoting the inclusion of actors, especially women, in emerging chains. Since 2005, we have been conducting step-by-step co-design work with milk producers, collectors and processors in the Bobo-Dioulasso region (Burkina Faso) to support them in a change process driven by agroecological values. Our approach involves supporting these actors in technical and organizational 'steps' geared towards redesigning the production system, while also fostering the emergence of an enabling environment for local production. This approach is based on discussion forums involving researchers and local sector stakeholders, and on an *in situ* action research process. At the dairy production systems scale, techniques for the conservation of crop co-products, multipurpose forage crops, shrub fodder banks, a rationing tool for female dairy cattle tailored for pastoral systems and manure management methods were tested. We have assisted dairy sector actors in initiating innovations concerning the organization of collection (efficient and inclusive collection scenarios), and in the pursuit of new outlets (*Wagashi* cheese). These different interventions also gave rise to the Bobo-Dioulasso Dairy Innovation Platform initiated in September 2020. **One of the lessons learned from these 15 years of research is that the art of step-by-step co-design lies in the ability to link initiatives aimed at developing promising agricultural systems and to build an enabling environment that includes policymakers and economic stakeholders driven by the determination to develop local dairy sectors.**

▲ *During a training session on yogurt production with a group of Fulani women (2012, Koumbia, Burkina Faso). © E. Vall*

Contacts

Éric Vall (SELMET, CIRAD, France), eric.vall@cirad.fr

Ollo Sib (SELMET, CIRAD, France), ollo.sib@cirad.fr

Mélanie Blanchard (SELMET, CIRAD, Vietnam), melanie.blanchard@cirad.fr

For further information

• Blanchard M., Vall E., Tingueri Loumbana B., Meynard J.M., 2017. Identification, caractérisation et évaluation des pratiques atypiques de gestion des fumures organiques au Burkina Faso : sources d'innovation ? *Autrepart*, 2017/1(81): 115-134. doi: 10.3917/autr.081.0115

• Vall E., Blanchard M., Coulibaly K., Ouédraogo S., Dabiré D., Douzet J.M., Kouakou P.K., Andrieu N., Havard M., Chia E., Bougouma Y.B., Koutou, M., Marambiri M.S., Delma J.D., Sib O, 2019. Co-design of innovative mixed crop-livestock farming systems in the cotton zone of Burkina Faso. *In*: Côte F.-X. *et al.* (éd.): *The agroecological transition of agricultural systems in the Global South.* Agricultures et défis du monde collection, AFD, CIRAD, Éditions Quæ, Versailles: 17-37.

• Sib O., González-García E., Bougouma-Yameogo V.M.C., Blanchard M., Vall E., 2020. Co-development, establishment and assessment of shrub fodder banks for dairy cow feeding in Western Burkina Faso. *Rev. Elev. Med. Vet. Pays Trop.*, 73(1): 27-35. doi: 10.19182/remvt.31841

Designing innovative coffee agroforestry systems

Increased pest pressure, global warming, biodiversity loss and pesticide overuse are major challenges facing world coffee cultivation. Agroecological development of the system must therefore be favoured, while not losing sight of the profitability for producers. Strategies to ensure adaptive management of coffee agroforestry systems have been implemented through an agroforestry-oriented scientific platform[1]. This involves adapting plantations (coffee varieties, shade tree species) and management practices (e.g. coffee pruning and/or shade tree pollarding). **Plantation fertilization and shade management can be tailored to the prevailing coffee price situation**, i.e. when prices are high, shading is reduced and fertilization is increased, but when prices drop, denser shading is promoted to increase nutrient recycling while reducing production and production costs. Selection of the best suited coffee varieties is a further strategic tool.

...cont'd

▲ C. arabica *F1 hybrids planted in agroforestry systems (Matagalpa, Nicaragua).* © *B. Bertrand/CIRAD*