

[Tshering Lhamo, Sophie van den Berg]
[tshelham17@gmail.com]
[École Supérieure d'Agricultures], [France]
Forum Origine, Diversité et Territoires
[Workshop n°1], [Session n°1]

[TAPE in Bhutan : Piloting of Adapted Tool of Agro-ecological Evaluation considering multi-level value chain practices in the Merak and Sakteng (Bhutan) among pastoralists]

[Global food system needs to be more sustainable and resilient to shocks such as climate change considering that the global food demand and global population is increasing by the year but agriculture is based on a finite resource and contributes to climate change.

Due to the ambiguity and polysemy of the sustainability concepts, definition has changed with context, time, scale, and views and interests (European Commission et al., 2020; Thakshila et al., 2019). Parallel to that several agriculture models have also been introduced to address such causes in different time and context. Agroecology although has fragmented evidence, has gained prominence and interest towards sustainable agriculture and food system (Mottet et al., 2020) due to its promising principles focusing on all three dimensions of sustainability.

FAO has developed a tool called the Tool of Agro-ecological Performance Evaluation (TAPE) based on the 10 elements of agroecology and core criteria of performance to address sustainable Development Goals (SDGs) (Mottet et al., 2020). The objective of the study is to extend the function of TAPE from farm level to food value chain and eventually food system following a food value chain of a territorial product called Zoedue (Fermented Yak cheese in a herd). This was achieved by adding indicators and adapting existing indicators to serve the purpose. The adapted tool was then piloted in Merak and Sakteng, Bhutan among the small-holder pastoralists in rural areas who produces Zoedue.

The process of making Zoedue involves a meticulous traditional know-how which starts from raising and handling livestock in their traditional ways which involves little to no external inputs, upcycling of almost all animal byproducts, diversification of processing, “sustainable” use of natural resources, etc., which indicates certain level of “sustainability” and “resilience”. The authors hypothesis that such practices are not only widespread in the territory but also is replicated in other aspects of food system in their territory.]

[Bibliographic references]

Crippa, M., Solazzo, E., Guizzardi, D., Monforti-Ferrario, F., Tubiello, F. N., & Leip, A. (2021). Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food* 2021 2:3, 2(3), 198–209.

Godde, C. M., Mason-D’Croz, D., Mayberry, D. E., Thornton, P. K., & Herrero, M. (2021). Impacts of climate change on the livestock food supply chain; a review of the evidence. *Global Food Security*, 28, 100488.

Hidayati, D. R., Garnevskaja, E., & Childerhouse, P. (2021). Sustainable agrifood value chain—transformation in developing countries. *Sustainability (Switzerland)*, 13(22).

Mottet, A., Bicksler, A., Lucantoni, D., de Rosa, F., Scherf, B., Scopel, E., López-Ridaura, S., Gemmil-Herren, B., Bezner Kerr, R., Sourisseau, J. M., Petersen, P., Chotte, J. L., Loconto, A., & Tiftonell, P. (2020). Assessing transitions to Sustainable Agricultural and Food Systems: A Tool for Agroecology Performance Evaluation (TAPE). *Frontiers in Sustainable Food Systems*, 4, 252.

Thakshila, H. M., Herath, R., Prabodha, R. M., & Rathnayake, S. (2019). A Critical Approach towards Sustainable Development Models-A Review. *International Journal of Agriculture Innovations and Research*, 7(4), 446–454.