Characterizing farms agroecological intensity in the Mekong region

Titouan Filloux
Agroecology and Safe Food Systems Transition (ASSET) project in South East Asia, Paris, France. titouan.filloux@wanadoo.fr

Jean-Christophe Castella
SENS, IRD, Univ Paul Valery Montpellier 3, Montpellier, France. j.castella@ird.fr

Genowefa Blundo Canto
Innovation, CIRAD, Univ Montpellier, Montpellier, France. genowefa.blundo_canto@cirad.fr

Estelle Bienabe
Innovation, CIRAD, Univ Montpellier, Hanoi, Vietnam. estelle.bienabe@cirad.fr

Melanie Blanchard
Selmet, CIRAD, Univ Montpellier, Montpellier, France. melanie.blanchard@cirad.fr

Pascal Lienhard
Aida, CIRAD, Univ Montpellier, Hanoi, Vietnam. pascal.lienhard@cirad.fr

In 2019, the HLPE report on "Agroecological approaches and other innovations for sustainable agriculture and food systems that enhance food security and nutrition" suggested a concise set of 13 agroecological (AE) principles to improve resource use efficiency, strengthen the resilience of agricultural and food systems, and secure social equity amongst stakeholders. We translated this "13 principles" framework into a scoring method incorporating several variables for each principle to assess the AE status of 1,800 farms selected from 4 different provinces and 3 different countries of the Mekong region. Two principles, namely Fairness or Land and natural resources governance were not used for the AE scoring. 15 farm types were built based on PCA analysis on farms main characteristics. Global AE scores were low, with only 4 out 15 farm types getting AE scores higher than 5 (out of 10) and below 6 in all cases. The lowest scores were observed for Recycling (mean value of 0.19/1), Soil health (0.21/1), and Input reduction (0.28/1) Principles, underlying farms' strong reliance still on external inputs (pesticides, fertilizers). The highest score was observed for Social values and diets Principle (0.66/1), underlying the importance farmers allocate to local varieties/breeds and self-sufficiency. AE scores were significantly higher in locations where multiple past-recent initiatives have been promoting the use of cover crops for soil health and biodiversity enhancement in paddy and tea-based systems. The translation of AE principles into a scoring method allowed to highlight priority areas for intervention, and the possible impact of interventions on AE adoption. The scoring method could and should be applied at multiple scales e.g. on different farms type, cropping and livestock systems, to tailor AE interventions at these different scales. This research has been fully funded by the ASSET project, co-financed by French Development Agency (AFD), European Union (EU), and French Facility for Global Environment (FFEM).