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Supporting crop-livestock increased integration in North Western Vietnam

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Crop-livestock integration is a major pathway towards greener and more circular economy. This is particularly true in northwestern Vietnam mountainous areas where livestock, notably large ruminants, and perennial crops are both seen as major pillars of local agricultural development strategies. Crop-livestock integration has been practiced by farmers for decades: farmers are collecting crops e.g. cassava roots, natural and planted grasses, and crops' residues e.g. paddy rice straws, to feed animals, while animal feces are collected and treated to fertilize crops. However, traditional crop-livestock schemes are under pressure in a context of animal roaming restrictions, and land rarefaction for animal feed production or collection. Silage feed that can be made from a diversity of forage material and stored for periods when feeds are less available or farmers busy with other activities. Compost is decomposed organic matter from various sources including animal feces and crops residues. As compared to untreated manure, compost helps removing bad smell, killing weeds' seeds and some disease germs, and reducing the weight of the final organic product. Silage and compost technologies are good examples of enhanced crop-livestock integration. But they are labor, technical and financial (initial investment) intensive so that the uptake of such technologies following sole training is usually low. In 2023, the Agroecology and Safe Food System Transition (ASSET) project engaged with 73 volunteer farmers from 3 villages in Son La and Dien Bien Provinces who interested in silage and compost making after a rapid survey on current crop-livestock production and farmers' expectation regarding to improving agroecology and good safety practices in the region. The project supported each trained farmers with 2 double-layer silage bags, 1 kg of Efficient Microorganisms (EM) for silage, 1 kg of EM for compost, 5m² roof to protect manure pit, and 1 forage chopper per group of minimum 5 farmers, representing a mean initial financial support of 1.750.000 VND (70 USD) per farmer. In March 2024, 82% of supported farmers continued producing silage to provide available feed for ruminants in the winter, and 70% continued producing compost and used for crops and vegetables as organic fertilizer despite no further technical and financial supports from the project. Farmers also recognize multi-benefits from adopting these innovations for their whole crop-livestock systems. This result suggests that the combination of technical and moderate financial supports can lead to a fast and important adoption of silage-compost models contributing to enhanced circular economy at farm and territory levels.