



ASSESSMENT OF THE MULTI-FUNCTIONS OF GRASSLAND LIVESTOCK SYSTEMS IN A MOUNTAINOUS COMMUNE OF NORTHWEST VIETNAM USING THE 'GRASSLAND MULTIFUNCTIONALITY' ONTOLOGY

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Concrete lesson

- The study proposed to use the “Grassland Multifunctionality” ontology to improve the baseline on livestock system in the North West of Vietnam.
- This approach can help to answer at a general issue “What weight of grazing system for the different categories of actors in the territory and for the different dimensions (production, local development, and ecosystem, social)?”.

Study area

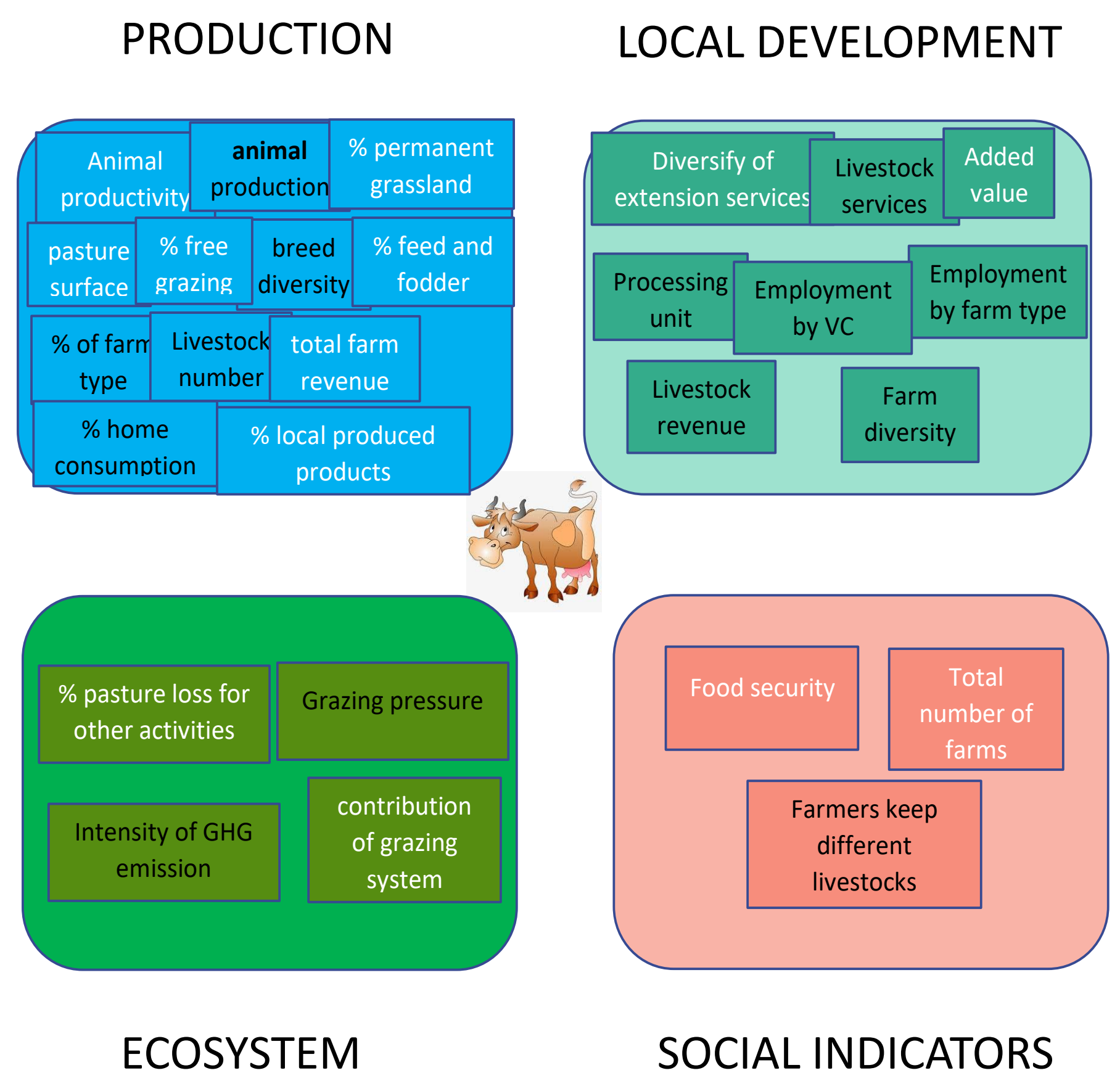
- Quài Nưa commune (Tuần Giáo district, Điện Biên province- North West Vietnam).
- Total area of 5210 ha: agricultural area including highlands and lowlands (48%), forests (20%). The population of 3730 people with different ethnic groups (Thai, Kinh, H'Mong and Kho Mu).
- Livestock production: 2623 cattle and buffaloes kept by 46% and 70% of farms, respectively; 1215 goats kept by 20% of farms; 4450 pigs kept by 88% of farms; and almost 20 thousand poultry kept by 92% of farms. The density of ruminants is 50.3 head/km² with a diversity of livestock system (zero grazing and intensive, semi intensive with grazing a part of the year, and grazing).



Approach and tool

Based on farm typologies of previous surveys, a deep survey was carried out on the 48 selected farms of different representative farm types in the 7 villages of Quai Nua commune and stakeholder interviews of beef value chain (local authorities, slaughter men, collector, beef dry processor, and retailer) to assess the impacts of grazing livestock.

Adapted 29 indicators from the 4 dimensions

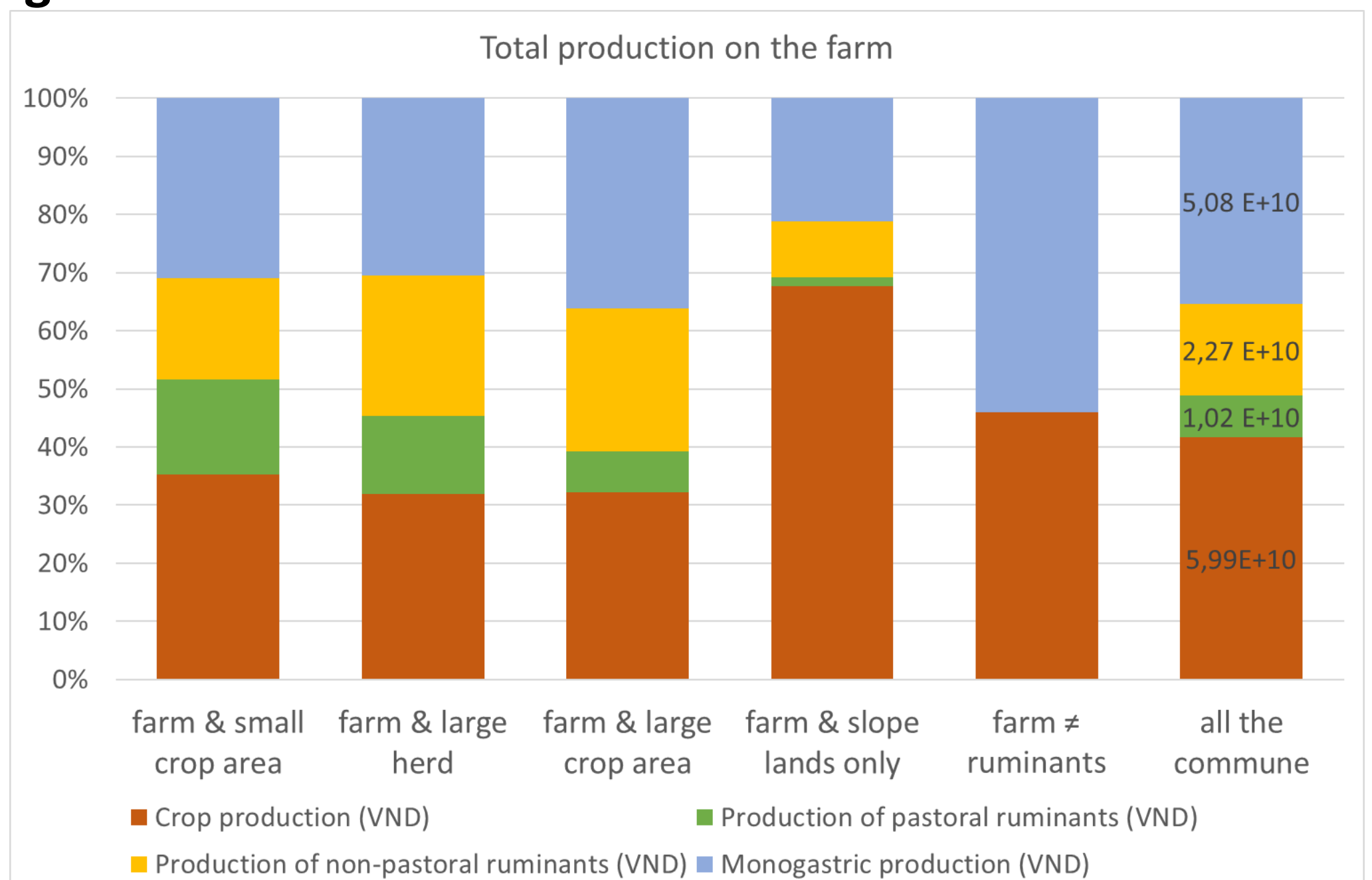


Initial results

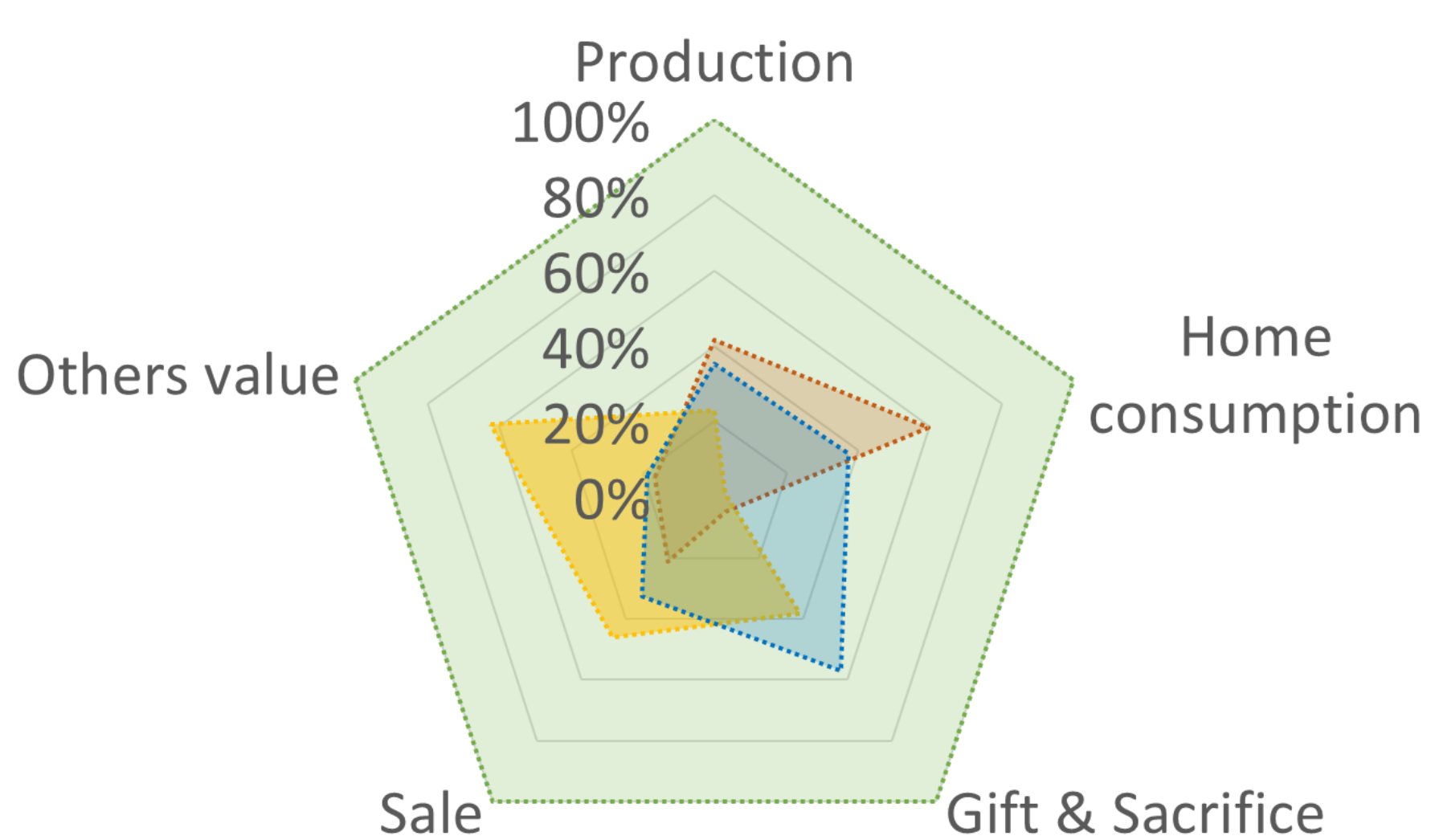
Characteristics of farm types

	farm & small crop area	farm & large herd	farm & large crop area	farm & slope lands only	farm ≠ ruminants
Family (people)	5	7	4	4	4
Crop area (ha)	0,8	1,03	1,7	1,9	0,5
Forage area (m ²)	400	600	1200	0	0
Cattle (head)	6	11	9	4	0
Buffalo (head)	1	3	2	1	1
Pig (head)	2	13	3	8	3

Multi-functions of livestock systems and contribution of grasslands



Legend: Farm (green), Agriculture (orange), Ruminant (yellow), Monogastric (blue)



Implications

- Use of this ontology, the multi-functions of grassland for different livestock systems could be accessed.
- Pastoral production has big contribution in the farms with small agricultural areas and also those with large herds of ruminants.
- Largest share of farm income is from sale of ruminants; an important role of livestock is as gift and for sacrifice, especially monogastric; Self-consumption mainly come from crop and monogastric productions; High other value of ruminants comes from stock value (as bank saving/ live bank security) and the use of animal traction and manure for crop production.

