CRITERIA		- -	-	0	+	+ +	Score justification
Economy	Income stability						
	Income stability						
	Gross margin						
	Gross margin						
	Public subsidies access						
	Public subsidies access						
	Investment						
	SYNTHETIC CRITERION						
Autonomy	Crop market stability						
	Nutrients autonomy						
	SYNTHETIC CRITERION						
	Feed autonomy						
	Protein autonomy						
	Feed market stability						
	SYNTHETIC CRITERION						
	Knowledge acquisition						
	Energy autonomy						
	SYNTHETIC CRITERION						
Agronomy	Inputs reduction						
	Soil fertility and erosion reduction						
	Crop rotation (agronomic quality)						
	SYNTHETIC CRITERION						
Production	Crop production						
	Crop quality						
	Energy production						
	SYNTHETIC CRITERION						
	Animal production						
	Animal products quality						
	Forage production						
	Forage quality						
	Energy production						
	SYNTHETIC CRITERION						
Livestock management	Health state of the herd						
	Management flexibility						
	Traceability						
	SYNTHETIC CRITERION						
Environment	Fossil energy reduction						
	Fossil energy reduction						
	Fossil energy reduction (supply chain level)						
	Synthetic inputs reduction						
	Water consumption reduction						
	Reduction of animal pressure on land						
	Landscape diversity						

	Ecological conservation areas						
	SYNTHETIC CRITERION						
Work organization	Working time reduction						
	Working time reduction						
	Management simplification						
	Management simplification						
	SYNTHETIC CRITERION						
Supply chain organization	Collect and storage organisms activity						
	Local markets development						
	Technical advice density						
	SYNTHETIC CRITERION						
Social embeddedness of crop-livestock activities	Producers – consumers relationships						
	Mixed producers partnerships						
	Contribution to employment						
	Landscape quality						
	SYNTHETIC CRITERION						

	Crops perspective
	Livestock perspective
	Both perspectives

Description of sub-criteria

- **Economy**
  - Income stability: combination of crops and animals may stabilize income of cropping systems, livestock-productions systems or both.
  - Gross margin of the farming/territorial system: modification of the cropping/livestock-production system may not be economically attractive for the technical system itself. However, due to emergent properties, it may result in savings and earnings for the farming/territorial system. For example, introducing lucerne in a crop rotation is usually less profitable than other crops (such as wheat) but it may save on fertilizer purchase, concentrate purchase, etc. As a consequence, it may be profitable for the gross margin of the farming system.
  - Access to subsidies: does the assessed option allow a financial support?
  - Investment: does the option allow a useful and reasonable investment (+) or a very specific, punctually used and very expansive (-)? This sub-criterion may be considered for storage, transport, on farm-transformation or cultural practices.

- **Autonomy**
  - Crop market: does the option allow farmers to reduce their dependency towards world market prices?
  - Nutrients autonomy: do chemical and organic fertilizer inputs come from far away (- -, -) or from farm (++) and/or territory (+)?
  - Feed autonomy: does the option increase (+) or decrease (-) forage autonomy?
  - Protein autonomy: do the protein parts of rations come from very far (--) or from farm (++) or territory (+)?
  - Feed market stability: does the combination of crops and livestock allow farmers to reduce their dependency towards forage, cereal or concentrate prices?
  - Knowledge acquisition: does the option allow farmers to autonomously improve their knowledge or knowledge sharing between farmers (+) or lead farmers to depend on technical external advice or decision support tools?
  - Energy autonomy: does the option reduce (-) or increase (+) the energetic autonomy of farmers towards fossil fuel?

- **Agronomy**
  - Inputs reduction: does the option increase (- -, -) or decrease (+, + +) the need of inputs (whatever their origin) for the cropping system?
  - Soil fertility and erosion reduction: the new practices may increase erosion and/or reduce soil fertility (-) or decrease sensitivity to erosion and/or increase soil fertility (+). Considering that erosion involves many factors (slope, rain, soil texture, etc.) this post has to be assessed in a very qualitative way, to determine whether the new practice globally reduce or increase risk of erosion.
  - Crop rotation: the introduction of a new crop may follow agronomic rules of diversity of botanic families, return times, etc. Assess if the option enhance (+) crop rotation consistency or hamper (-) it.

- **Production**
  - Crop production: does the option increase (+, + +) or decrease (- -, -) crop production in the system?
  - Crop quality: does the option increase (+, + +) or decrease (- -, -) crop quality?
  - Energy production (crops): does the option increase (+, + +) or decrease (- -, -) the energy production from crops?
  - Animal production: introducing new feed stuffs may change animal productivity (milk, meat, growth speed, etc.). Does the option increase (+, + +) or decrease (- -, -) the animal production?
  - Animal products quality: introducing new feed stuffs may change animal products' quality (milk content, meat characteristics, etc.). Does the option increase (+, + +) or decrease (- -, -) animal products quality in the system?
  - Forage production: does the option increase (+, + +) or decrease (- -, -) forage production in the system?
  - Forage production quality: does the option increase (+, + +) or decrease (- -, -) forage quality in the system?
  - Energy production (livestock): does the option increase (+, + +) or decrease (- -, -) the energy production from livestock system?

- **Livestock management**
  - Health status of the herd: introducing new feed stuffs and management (grazing, etc.) may change health status of the herd. Does the option increase (+, + +) or decrease (- -, -) herd's health status?
  - Management flexibility: new practices may induce more or less flexibility in the livestock system. Does the option increase (+) or decrease (-) flexibility of the livestock system?
  - Traceability: does the option increase (+) or decrease (-) traceability of animal production practices, which could be useful to certificate the local origin of production?

- **Environment**
  - Fossil energy reduction: does the option increase (- -, -) or decrease (+, + +) fossil energy consumption, notably through internal production of energy?
  - Fossil energy reduction (supply chain level): for this criterion, we consider the indirect fossil energy consumption at supply chain level, including inputs production and transport and transport and transformation of products. For example, drying lucerne may be very energy consuming, whereas feeding animals with lucerne doesn't consume exogenous energy directly.
  - Synthetic inputs reduction: does the option increase (- -, -) or decrease (+, + +) synthetic inputs use (pesticides, fertilizers, antibiotics) in the system?
  - Water consumption reduction: does the option increase (- -, -) or decrease (+, + +) water consumption for irrigation? Other water consumption posts (animal consumption, washing of buildings, etc.) are not required.
  - Reduction of animal pressure on land: does the option increase (- -, -) or decrease (+, + +) animal pressure on land? Pressure is understood as over-density of animals, overgrazing, over spreading of manure.

- Landscape diversity: does the option induce standardization (-) or diversification (+) of landscape?
- Ecological areas conservation: does the option suits to conservation of ecological areas (+) or hamper or threaten their conservation (-)?

- **Work organization**
  - Time reduction: does the option increase (-) or decrease (+) the working time for farmers?
  - Management simplification: does the option increase (+) or decrease (-) the simplicity of management of the system? This criterion depends on the farmers' objectives of management, his perception of work's quality and has to be based on the knowledge of values and objectives by participants.

- **Supply chain organization**
  - Collect and storage organisms activity: does the option increase (+) or decrease (-) the economic activity of collect and storage organisms? The economic dynamism of those organisms is an important piece of economic activity on rural territories.
  - Local markets: does the option increase (+) or decrease (-) the activity of local markets, focused on direct producers-consumers relations and local providing of food, e.g. supply schools with local products?
  - Technical advice density: does the option increase (+) or decrease (-) the need of technical advice? The technical advice network may be important to link farmers and to diffuse local knowledge, to help farmers to adapt their practices and manage transitions.

- **Social embeddedness of crop-livestock activities**
  - Producers – consumers relationships: does the option increase (+) or decrease (-) relationships between producers and consumers?
  - Mixed producers partnerships: does the option imply strong partnerships between crop producers and breeders (+) or only sectorial partnerships (-)? The emergence of such mixed partnerships may increase the potential of development and sustainability of cooperation.
  - Contribution to employment: does the option increase (+) or decrease (-) the potential of employment on farms?
  - Landscape quality: does the option induces the development of attractive landscapes (+) or not (-)? The landscape quality is quite subjective but may correspond to patrimonial representation of local identity (hedgerows, grazing animals, grasslands) or new landscapes useful for recreating uses (agroforestry, green belt around city, etc.).