

Designing a multicriteria index at farm-scale focus on working conditions and farm transmission to assess dairy farm abandonment risks in mountain areas

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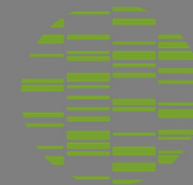
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VetAgro Sup



INRA
SCIENCE & IMPACT

Introduction

Studied system: mountain areas
strong geographic and pedoclimatic constraints

⇒ continuous abandonment of agriculture

Garcia-Martinez et al. (2009)



Ex: Cantal cheese area (PDO)

- 210 – 1855 m a.s.l, dairy production based on grass
- 2007 – 2013 : 40% of dairy farms subscribing to the PDO specifications disappeared

⇒ a thread on maintaining milk production on Cantal area

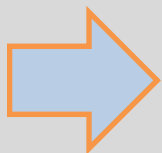
A decrease of livestock farming system mainly due to:

⇒ harsh on-farm working conditions

⇒ lack of generational succession

MacDonald et al (2000), Garcia-Martinez et al. (2009), Bernues et al. (2011)

A need to assess on-farm working conditions (FWC) and abilities to transfer the farm (FTA) to somebody else
to maintain dairy systems in mountain areas



Introduction



In literature, tools to assess FWC and FTA exist, BUT:

- ⇒ They are not specific of LFS in mountain areas
- ⇒ They do not cover all FWC and FTA dimensions
- ⇒ Those tools are not well-accepted by stakeholders

To be well-accepted, efficient and used by end user, an index has to be

- In line with the expectations of stakeholders
- Relevant to the local context
- Comprehensible by the end users

Reed et al. (2006), Lebacqz et al. (2013)

A need to build a new global tool at farm scale by involving local community at all stages



➔ **Objectives:** An index to assess FWC and FTA to establish on-farm diagnosis and supply supports for farmers
A tool designed **by and for** farmers with a **participative** approach

Methods:

A design relying on participative approach

⇒ focus-group

Step 1 : designing on-farm working conditions Index

Step 2 : designing farm transfer abilities Index

Step 3 : aggregate both index

Four-step process:

Extended focus-group:

- farmers & PDO representatives
- advisors
- researchers

2

Establishing scales for each indicators

1

Defining criteria & indicators

3

Setting up scores for each scales

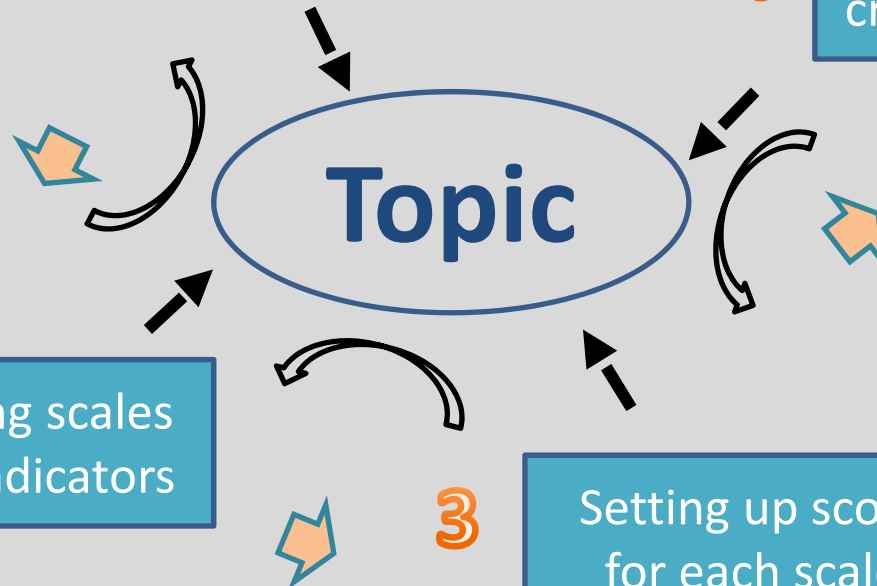
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Ranking & weighting criteria + indicators

Topic

Restricted focus-group:

- farmers & PDO representatives



Results and discussion:

1

Defining criteria & indicators

4

Ranking & weighting criteria + indicators

To design FWC and FTA index, it requested:

- 5 full-day meetings for FWC
- 3 full-day meetings for FTA



≈ 60 h with focus-group members
From January to June

Process requires:

- High degree of involvement from the focus-group members
- To be adaptable (weather conditions, hazards due to farmer's jobs)
- Huge amount of work to faithfully transcribe meetings' speeches

But allows a better assimilation by focus-group members

Results and discussion:

1/ a rich index and diverse dimensions of FWC and FTA are covered

| | Criteria | Nr of indicators | |
|------------|------------------------------|------------------|------|
| FWC | Work duration & organization | 6 | } 63 |
| | Quality of life | 11 | |
| | Physical dimension of work | 9 | |
| | Mental dimension of work | 26 | |
| | Isolation & relations | 11 | |
| FTA | Production facilities | 8 | } 14 |
| | Economic situation | 5 | |
| | Farm transfer projections | 1 | |

Results and discussion:

2/ what are the main important points for maintaining farms

| | General Weight | Criteria | Weight | |
|------------|----------------|---|--------|-----|
| FWC | 60 | Work duration & organization | 28 | } ← |
| | | Quality of life | 25 | |
| | | Physical dimension of work | 18 | |
| | | Mental dimension of work | 16 | |
| | | Isolation & relations | 14 | |
| FTA | 40 | Production facilities | 27 | } ← |
| | | Economic situation | 38 | |
| | | Farm transfer projections (existence of farm acquirer) | 35 | |

Weighting indicates the most influence dimensions :

Focus-group members consider that FWC have more importance than FTA

Results and discussion:

3/ generic to dairy systems but including specificities of mountain DFS

- On-farm working conditions:

Physical dimension

Milking

- Fences & Headcrush crossing
- Carry weight
- Poor posture



Isolation

Touristic activities?



- Farm transfer abilities:

Production facilities

Parcel plan constraints

- Sufficient convenient grazing for dairy cows around milking parlor
- Part of none-mechanized area



Conveniences of Equipment, buildings

- Sufficient carrying capacity of housing
- Tied-up or loose housing system

Results and discussion:



4/ indicators are comprehensible for the farmers

- On-farm working conditions:

Quaework method (Hostiou and Dedieu, 2012)

Work
duration &
organization



Simplification by focus-group member
into 2 indicators

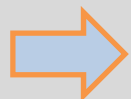
- No of hours per day for daily routine work
- Part of overload days on total ones to accomplish seasonal tasks

- Farm transfer abilities:

Economic
situation

Creation of an indicator to extend assessment on a scope

- Purchase of stakeholders' equity
- Repayment ability



High degree of assimilation by focus group members

Conclusions:

An Index designed by a participative process:

- Enables to get a rich and diversified multicriteria Index
- Weighting process indicates what are the main important criteria and indicators
- But requires time with many focus-group meetings

Multicriteria index to assess working conditions and farm transfert abilities

- Functioning tool
- A test-step is need to measure the requested time and to develop methods
 - to collect data on farm
 - to process data and establish diagnosis
- Plans of action could be settled to :
 - determined possible leeway to improve FWC and to determine FTA issues
 - assist farmers towards better farming practices
 - be used on a large panel to assess risks on abandonment in mountain areas



Thanks for your attention, please feel free to ask for more details!

A special thank to all persons who contributed to the focus group



Results and discussion:

1/ a rich index and diverse dimensions of FWC and TFA are covered

| | Criteria | Nr of indicators | |
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“Integrated sustainability assessment tool”

Ripoll-Bosch et al. (2012)

- Farmer incomes
- Farmer education
- Salary level
- Satisfaction level
- Distance to services
- Leisure time

- Facilities
- Land access problem
- Own area
- Indebtedness