Influences of local policies and opportunities on farmers strategies and grassland management

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Material and Methods

- 3 areas in the same pedoclimatic context of the folder Jura: Doubs (F), Vaud (CH), Neuchâtel (CH)
- Differences in local policies and opportunities:
  - Protected Designation of Origin (PDO) cheeses
  - Specific policies on mountain pasture (fertilization, stocking rate)
  - Ecological policies

- Multifactorial analysis followed by hierarchical clustering:
  - For strategy analysis we used data of 33 farms on:
    - number and kind of animals bred and sold;
    - area managed;
    - periods of production;
    - multiple variables on intensity of animal production (age at first calving, animal production expectations, quantity of concentrate...)
- Interactions between strategy and area/grassland management have been studied by Chi-square test

Nine strategies identified:

<table>
<thead>
<tr>
<th>Strategies (Number of farms) description</th>
<th>Area</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.</td>
<td>Vd.</td>
<td>Ne.</td>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>1. Extensive on animals (4)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Beef cattle (4)</td>
<td>1*</td>
<td>2</td>
</tr>
<tr>
<td>3. Grass managers (5)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4. Part-time (1)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>5. Mountain cheese makers (4)</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>6. Grazing Milk (3)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>7. Intensive (3)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8. Minimizing unproductive times (5)</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>9. Big farms in area and animals number (4)</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

- Strategies 1, 2 & 3: found in the three areas
- Strategies 4 & 5 in Vaud: related to mountain pasture
- Grazing milk strategy in Doubs: PDO cheeses specifications
- Intensive strategy in Neuchâtel: subsidies and local dynamics
- Minimizing unproductive times in Switzerland: market for heifers
- Big farms overrepresentation in Doubs: agricultural dynamics

Results

16 grassland usages and their different use between strategies:

<table>
<thead>
<tr>
<th>Management type</th>
<th>Grassland usage (nb of plots)</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>No Fertilization</td>
<td>Abandonment (40)</td>
<td>/</td>
</tr>
<tr>
<td>Grazing and inorganic fertilization</td>
<td>Grazing (23)</td>
<td>/</td>
</tr>
<tr>
<td>Pastures</td>
<td>With manure only (44)</td>
<td>/</td>
</tr>
<tr>
<td>Manure Fertilization</td>
<td>Mowing in summer and grazing lately (30)</td>
<td>/</td>
</tr>
<tr>
<td>No Fall use</td>
<td>Early use (50)</td>
<td>/</td>
</tr>
<tr>
<td>Organic fertilization</td>
<td>Late first use (42)</td>
<td>/</td>
</tr>
<tr>
<td>Frequent uses with organic and inorganic fertilization</td>
<td>Topping (44)</td>
<td>/</td>
</tr>
<tr>
<td>Use depending on grass growth</td>
<td>Organic fertilization (25)</td>
<td>/</td>
</tr>
<tr>
<td>Liquid manure fertilization</td>
<td>Liquid manure fertilization (28)</td>
<td>/</td>
</tr>
</tbody>
</table>

- Each strategy has under & overrepresented grassland management i.e.:
  - Grazing milk farms (n°6) need plots for grazing early and avoid fertilization with liquid manure. They don’t need to stock grass (few mowing)

Outlook

- Search for type of grassland management at the farm level
- Evaluate floristic diversity in plots of each management
- Test the strategies effect on floristic biodiversity at farm level
- Discuss with the local stakeholders of the results