



# Sustainability of dairy farms in the Alpine area (Aosta Valley, Italy)

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## Regional context and description of sample farms

- Mountain area: the great majority of the hayfields are on a steep slope; the farms are situated at two altitudes:
  - valley bottom, average altitude of cattle shed or farm being 960m
  - maximum altitude of cattle shed in high mountain pastures being 2500m
- Cattle shed description: the average farm has 22 adult heads of cattle and 19 milk cows; farms having less than 20 cows made up 60% of the sample.
- Breed: almost exclusive presence of indigenous cattle, the Aosta Valley breeds, which are very rustic and suitable for high mountain pastures; average milk yield per cow per year is about 4000 litres for the Aosta Valley Red Spotted breed and about 3000 for the Aosta Valley Chestnut which is also raised for the traditional cow fighting competitions: Batailles des Reines.
- The farm surface area is 8 ha on average on the valley bottom; 94% of the land surface is intended for cattle feeding.
- 82% of the farms move their cattle to high mountain pastures during the summer season (for 120 days on average) and 27% directly manages an alpine pasture.
- Animal husbandry is characterised by farms which are mainly family-run.
- Typical product: Fontina Cheese (DOP).
- 38% decrease in number of livestock farms between 1990 and 2000; this trend is still continuing.
- High level of financial support supplied by the regional administration regarding buildings and machinery.

## Methodology

- Our research concentrated on the study of 104 dairy farms located in different areas of the region. The farms were selected according to their purpose and location. In 2006 a survey was conducted on the farms taken into account to collect relevant information such as their management and organization. This data was processed using the average balance sheet method.
- The net farm income (NI) is the end result between gross sellable production (GSP) and costs, inclusive of remuneration for labour supplied by the farmer and his family.



## Results

### Working conditions

- Number of cattle sheds per farm: 16% of farmers, above all young ones, subdivide their livestock into 3 or more buildings8% of the sample farms still has very old, inadequate structures
- There are 1.7 tractors on average per farm, with an average horse power of 105.
- 87% of the farms can mechanize their hayfields.
- 80% of the farms are equipped with mechanized milking facilities, but in spite of this milking is carried out by hand on half of the farms.

### Social results

- A lack in ability encountered on livestock farms to ensure continuity concerning their own businesses.
- The farmers are on average 50 years old; 28% are less than 40 and 60% have a low level of education. 13% of the farms is run by a woman.
- The amount of labour required is a critical point: only 30% of the farms allows itself a few days holiday per year; part-time work can only be found in 7% of cases; 11% of farms hire help, above all in high mountain pastures.

## Conclusions

- The lack of independence concerning forage production has a negative influence on livestock farm management and territory protection.
- which will be given up manage 97 hectares of land situated on the valley bottom. It is believed that the great majority of these meadows will be used by other farms, whilst there is a risk that the marginal areas will become abandoned.
- This work has stressed the positive role which livestock farms play in keeping the territory well-managed and preserved. In addition, it was observed that the areas used for alpine pastures and the ones at the foot of the mountains are well-exploited whilst the ones situated mid-mountain are being gradually left aside together with other places which cannot be easily reached by agricultural machinery. It was also noticed that the lack of forage production independence has negative repercussions on livestock farm management, farm balance sheets and the protection of the territory.

### Economic results

- Low productivity and scarce returns were the key outcomes of the economic findings. Income distribution divided into three classes based on the annual salary of a hypothetical farm worker (Table 1). The largest profits were made by those farms which were directly involved in the production and sale of cheese.
- Low profitability was found to be due to high investment costs and unsuitable exploitation of products, particularly milk and meat: 38.4% of GSP is absorbed by costs regarding machinery and buildings.
- 83% of the farms sell their milk to a dairy at 0.46€/kg on average (min. €0.36 – max. €0.59); 9% of the farms process the milk themselves whilst the remaining 8% either self-consumes the milk or uses it in the farming cycle.

**Table 1.** Percentage of farms and the allocation of their milk production subdivided into farm net income brackets.

Milk	< 0 €	0 - 12.000 €	> 12.000 €
Used on site	25%	75%	0%
Sold	14%	72%	14%
Processed	0%	33%	67%



### Environmental results

- The role which livestock farms had, and still have, in keeping the territory well-managed and preserved.
- 90% of farms access agro-environmental measures and 99% respect good farming practices guidelines.
- The remaining 13% mows with little or no mechanization, but this nonetheless ensures the management of certain areas which would otherwise be abandoned
- As meadows situated in high mountain areas have a reduced productive potential, 42% of farms cannot independently satisfy its forage requirements. These farms subsequently meet with an average supplementary expense of over €4.500 a year spent on buying forage and another €2.000 on feed.