

Schlussbericht AlpFUTUR Teilprojekt 16: ÄplerInnen



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Summary

Alpine farming is an important agricultural activity for farmers and for society. The implications of this traditional land use are not easily assessed because of the great amount of interdependencies and its multifunctional role. Among most important aspects related to this traditional practice there are the conservation of biodiversity, natural hazards protection, extension of grazing surface, heritage of traditional behavior, attractive landscape for tourism and production of dairy specialties.

The availability of seasonal specialized labor force is an important precondition for a sustainable development of the alpine region. Aiming at investigating if the supply of the labor force is granted in the next future and at providing information regarding this particular labor segment, a survey was realized interviewing employers and employees of 50 Swiss summering farms. The factors influencing the future return of the employees working at summering farms are analyzed with multiple regression models. Most relevant and common issues are discussed as well. One of the main outcomes is the importance of the infrastructure which should be conserved simple and traditional but also needs to be functional and fulfill minimal living standards.

Engaging a working position at a summering farm can be a lifestyle decision as well as an experience that some individuals choose to undertake for a few seasons only. On the hypothesis that employees with similar socio-economical backgrounds might be looking for the same benefits working in this labor segment, a cluster analysis was performed aiming at identifying a typology of workers. Based on respondents' motivational patterns towards their occupational choice in the alpine farming sector, four clusters of employees were identified. The characterization of the employed labor force, the identification of the main issues and of the factors determining an attractive working place will allow effective improvements by employers and stakeholders.

Zusammenfassung

Die Alpwirtschaft ist nicht nur für die Landwirtschaft, sondern auch für die Gesellschaft von grosser Bedeutung, da sie vielfältige Funktionen erfüllt und massgeblich zur Multifunktionalität der Landwirtschaft beiträgt. Die Alpwirtschaft leistet beispielsweise in ökologischer Hinsicht einen wichtigen Beitrag zum Erhalt der Biodiversität, Sie spielt darüber hinaus eine grosse Rolle bei der Verminderung von Naturgefahren, bei der Weitergabe von Traditionen sowie beim Erhalt der Attraktivität der Landschaft für den Tourismus.

Die Verfügbarkeit von spezialisierten Arbeitskräften in der Sommersaison ist eine wichtige Voraussetzung für eine nachhaltige Entwicklung des Alpenraums. Das Ziel der Untersuchung war es zum einen herauszufinden, ob das Angebot an Arbeitskräften in naher Zukunft gewährleistet ist, zum anderen Informationen zu diesem besonderen Segment von Arbeitskräften zu erhalten. Zu diesem Zweck wurden im Jahr 2011 auf 50 Sömmerungsbetrieben Interviews mit 50 Arbeitgebern und 120 Arbeitnehmern durchgeführt. Mit Hilfe von Multiplen Regressionsmodellen wurden die Faktoren identifiziert, die eine Rückkehr der Arbeitskräfte auf die Alpbetriebe beeinflussen. Zudem werden die häufigsten Schwierigkeiten diskutiert. Eines der wichtigsten Ergebnisse ist die grosse Bedeutung der Infrastruktur für die Arbeitskräfte. Diese soll einfach sein, traditionellen Gewohnheiten entsprechen, gleichzeitig soll sie jedoch funktionell sein und minimale Lebensstandards erfüllen. Auf einem Sömmerungsbetrieb zu arbeiten kann entweder eine Lifestyle-Entscheidung sein oder eine Erweiterung der Lebenserfahrung. Die Untersuchung der Gründe für diese Berufswahl sind eine wichtige Erkenntnis für die zukünftige Entwicklung dieses Arbeitsmarktes. Ausgehend von der Hypothese, dass Angestellte mit einem ähnlichen sozio-ökonomischen Hintergrund die gleichen Ziele mit einem Alpaufenthalt verfolgen, wurde eine Clusteranalyse durchgeführt, um eine Typologie dieser Arbeitskräfte zu erstellen. Aufgrund der Motivationsmuster der Befragten bezüglich ihrer Berufswahl konnten vier Cluster von Angestellten identifiziert werden. Die Charakterisierung der beschäftigten Arbeitskräfte und die Identifizierung der verschiedenen Probleme und Faktoren, die einen attraktiven Arbeitsplatz ausmachen, ermöglichen es, wirksame Verbesserungsmöglichkeiten durch die Arbeitgeber und Stakeholder zu identifizieren.

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1. Introduction and problem statement

The workplace in the alpine farming sector involves about 20,000 people each summer, employed on summer farms as herdsmen and cheese-makers (Hösli 2005). The short job tenure, the relatively low wage by Swiss standards in the agricultural sector and the remote location make for a tight labor supply in this market. The heterogeneity of the summer farms guarantees a great variation in tasks and working conditions in the alpine farming sector. However, daily work on the alpine pastures is hard work, characterized by long working days as well as comfort and technology restrictions. The working conditions in this seasonal labor segment are not favorable when compared to other jobs in the agricultural sector either, since the consideration of weekly days off or vacations are the exception rather than the rule and the modest wage is traditionally paid only at the end of the season.

Nevertheless, there is a segment in the labor market willing to accept the seasonality and the relatively low remuneration in exchange for experiencing the particular lifestyle of alpine farming. Many of these workers, however, do not return for a second or third season. This means a short-term engagement of employees and the subsequent loss of an experienced workforce and traditional ecological knowledge.

This is a labor-market segment characterized by a wealth of traditions, grazing-management expertise and attitudes. Whereas this seasonal occupation was in the past restricted to family members, people living in the same region, and single women (Weiss 1941), the situation changed when this labor market failed to adapt to modern conditions (Kruker and Maeder 1983). Nowadays, it is a job that appeals not only to those with an agricultural background, but also to young people looking for independence and contact with nature (Weixlbaumer 1997). A peculiarity of this sector is that it relies on a higher percentage of foreign, unskilled and non-family employees than is usual in other agricultural occupations, especially in the case of alpine cooperatives (Sulzer 2005).

Recently the supply of workforce for the alpine farming sector is becoming increasingly problematic with managers claiming difficulties in finding qualified and independent laborers interested in working in the alpine farming sector for a mid/long term (Werthemann and Imboden 1982; Lauber et al. 2008).

1.1. Research questions and objectives

Main objectives and research focus of this project can be listed as it follows:

- 1) Data collection on the alpine farming labour market: socio-demographic information about workers and employers, data on infrastructure and on the working conditions (e. g. salary, working hours per day, average number of animals to be managed by the workers), current labour supply and demand situation as well as labour market related aspects and issues. Is the availability of workers an issue? Is the supply of experienced labourers assured in the future?
- 2) An evaluation of the importance of the expertise and work quality for the environment and biodiversity in the alpine region. What is the point of view of the workers? How do workers evaluate their work? What is mostly important and what could be improved?
- 3) For the employees, patterns determining the occupational choice in the alpine farming sector in the short and long terms are assessed. What aspects are crucial during the first season and which factors determine the return of a worker at the same alpine farm in the future? Which factors may determine the change of the summer farm instead and which issues can determine the interruption of the working season? What sociological backgrounds characterize different labourers working at summering farms? What occupation do these workers undertake during the winter?
- 4) For the employers, the motivational values behind the choice of managing the alpine farm as well as information regarding the characteristics searched among their workers are provided.
- 5) The assessment of the main issues faced by employers and employees working in the alpine farming labour segment.
- 6) Data collection and evaluation of the qualification process. Do employers value the participation of their employees to qualifications courses? Do the contents respond to the real requirements of employees and employers in the practice? Is offered courses' length appropriate? What could be improved?

Initially, another objective of the project was to interview 20 employees who had interrupted an ongoing working season. The aim was to understand the reasons which

lead to such decision and to study possible solutions. However, during the preparation phase of the interviews, it became clear that obtaining the contact information of these employees and reaching them for an interview would be extremely time consuming and very complicated. Thus it was decided to limit the survey to the employees and employers working at the alpine summer farms.

Among the workers, only two respondents out of 120 were categorized as “part of the family”. Because of the meaningfulness of this figure we omit any information or result on this specific subsample.

2. Method

2.1. Participants and study design

For this study, we used data obtained through a survey.

Data were collected by means of semi-structured face-to-face interviews carried out in July and August 2011 using an open format standardized questionnaire. 50 alpine summer farms were selected from cantonal databases by means of computer randomly generated ordering numbers. The survey sample consisted of 120 interviews with employed laborers and with 50 employers. The employers agreed that the employees would be interviewed. Once selected from the cantonal databases, the manager of the summer farm was contacted by phone in the spring and asked about his willingness to participate in the survey. An appointment was organized at the summering farm itself and the farmer received a letter of confirmation with the date of the interview. A couple of days before the appointment, farmers were contacted again for reconfirmation. Interviews were conducted orally and directly on the summer farms. This allowed a good data quality, although the high transaction costs necessarily constrained the size of our sample. Interviewees were free to discuss topics beyond the scope of the questionnaire. A different questionnaire was used for employees and employers for face-to-face interviews. We deliberately selected two alpine regions characterized by diametrically opposite ownership systems: the canton of Bern, where private summering farms predominate, and the cantons of Grisons and Ticino in which cooperatives and public institutions are most common (Bernese Oberland, Misox, Ticino, Unter-Engadin).

The questionnaire was designed based on previous similar research and literature reviews (Gasson 1973; Schweizer 2001; Rudmann 2004; Schweizer 2001; Von Felten 2011), reviewed by local experts in the field (Barbara Sulzer, zAlp) and pre-tested in June. Interviews were conducted in either German or Italian and always by the same researcher. Data were collected over a five-week period (from the second week of July until the third week of August), i.e. towards the end of the seasonal contracts once the important impressions had already been formed and the workload had decreased slightly to allow time for an interview.

2.2. The questionnaire

The questionnaires for the interviews with the employers and employees covered a broad range of topics and an overview of the main domains addressed:

- Basic personal data (e.g. age, gender, origin, winter occupation)
- Main motivational values for working in the alpine farming sector
- Future desire for occupation in the alpine farming sector
- Problems experienced during the current alpine farming season
- Infrastructure conditions (e. g. residential/production buildings, accessibility)
- Aspects of ecological management

Possibilities for improvements in the labor market (e.g. political instruments)

Moreover employees' opinion about following aspects was investigated:

- Important aspects of the workplace (e.g. infrastructure, social environment)
- Working conditions (e. g. wage, contract situation)
- Possible reasons to change summer farm in the future or to interrupt an ongoing season

Also the questionnaire for the employers included a few specific topics. In this case, information collected also included:

General information on the summer farm (e.g. animals, tourism)

Labor supply related aspects and problems (workers availability, workers characteristics, main issues, trends)

- Important characteristics of the workers (e.g. experience)
- Trends in the labor supply in the past years

Data collected with the questions related to the “motivational values for the occupational choice” represent the central sub-group of questions for this study, since they provided information on the main reasons related to the occupational choice

process. Most of the collected variables are either binary (yes / no) or ordinal on a five-point Likert scale ranging from “does not apply at all” (value of 1) to “fully applies” (value of 5).

2.3. Statistical analysis

Descriptive statistics are reported for both samples (employees and employers) in the results section.

Additionally, two statistical analyses were performed focusing this time, on the workers employed at summer farms only. Firstly, a binary logistic regression model was used to model employees' willingness to return to the summer farm in the following year. Moreover, with the aim of identifying a typology of employees working on alpine summer farms, data collected with the survey were analyzed with cluster analysis. These last two analyses are described in detail in the following paragraphs. These two last approaches are briefly explained hereafter.

2.4. Regression analysis¹

Binary logistic regression was used to determine the contribution of individual variables (i.e. question) towards the odds of the person returning to the summering farm in future. Thus, the dependent binary variable in this analysis is the expected return to the summering farm as an employee (dichotomous: 1, intends to return to the summering farm and 0, does not intend to return). In the results section, we present three different models varying according to the selection of the independent variables. Four groups of explanatory variables can be identified as it follows:

- 1) Personal details
- 2) Motivation variables (i. e. break from society, fascination of the mountains and desire for a simple lifestyle)

¹ This analysis and paragraph are extensively based on an early version of the manuscript “Alpine farming in Switzerland – discerning a lifestyle-driven labour market” submitted for scientific publication by the Review of Social Economy. Sample is represented by the 120 interviews with the employees.

3) Monetary variables (i. e. income as a reason for choosing Alpine farming as an occupation, the salary, and the rating of the salary)

4) Other variables (i.e. infrastructure, problems, workload).

In the three models, the first and the fourth groups of variables are constantly selected. However, each model is characterized by one different motivational variable and one different monetary variable. Therefore, variables concerning personal particulars (i.e. age, origin (Swiss or foreign), background (country or city residence in childhood) and experience (no. of times respondent has gone summer alpine farming)) were always included in the three models. Likewise, the general rating of the infrastructure (bad, satisfactory, good) and assessment of the workload (light, normal, heavy) as well as the binary variable indicating the experiencing of different sorts of problems (dichotomous: 1, problems occurred and 0, no problems occurred) were constantly considered in the models. The use of three different models allowed us to assess and compare the predictive power of more variables and therefore rely on more robust results and conclusions.

The number of observations determines the number of explanatory variables that can be selected. Since the first two models were characterized by a higher number of observations, it was possible to considerate one additional variable. Thus, the variable “*workload*”, which contributed the least to the model’s fit, was omitted from the last model (selection based on the Akaike Information Criterion (AIC), the variable scored a p-value of 0.44 in the full model). While we implemented all available economic variables, each one in a different model, choosing which motivational variable should be included (out of nineteen) represented a key step of the data analysis. A positive and significant correlation (Spearman's rank correlation coefficients above 0.4) was found between the motivational variables “*It’s my job*” and “*It’s a secure seasonal occupation*” (item nos. 1 and 2; $\rho = 0.62$), and between the variables “*I want to support my family handling a heavy workload*” and “*No one else goes*” (item nos. 17 and 18; $\rho = 0.71$). Thus, the variable selection for the logistic models took into account this aspect. The final choice was made considering one variable representing the search for a quiet and peaceful period of time and place (i.e. “*break from society*”), one variable accounting for the natural environment (i.e. “*fascination of mountain*”) and a final variable encompassing the particular lifestyle (i.e. “*looking for a simple lifestyle*”).

In the results, the odds ratios are the ratio of the odds of the group of “*Returners*” (employees planning to return next year to the summering farm) versus the odds of “*Non-Returners*” (employees not planning to return next year to the summering farm).

For the logistic models, ordinal variables on the 5-level scale were recoded as binary variables (1 for scores above and 0 for scores below the mean). For our purpose was also appropriate to divide the discrete variable “*salary*” by 1000. Thus, by interpreting the outputs, the one-unit increase will now correspond to 1000 Swiss Francs increase in the seasonal salary. No other transformations were done to the data. Data were analyzed and the binary logistic models were performed with the statistical software R.

2.5. Cluster analysis²

Cluster analysis belongs to the multivariate techniques allowing exploratory data analysis, organizing the observed data into meaningful groups or clusters, maximizing the similarities of the observations within each cluster and maximizing the dissimilarities between the clusters. The cluster technique here employed is based on the Euclidean square distance and on the Ward (or minimum distance) method as aggregation criterion. This method proceeds with the combination of the members into progressively larger clusters (aggregative) based on one or more independent variables considered relevant to establishing a specific typology. As previously introduced we use the motivational variables as predictors. Since we opted for a no a-priori assumption about the influence of the independent variables, we decided to include all 19 motivation variables in our analysis (Table 3.13). The method here employed thus groups with members only based on their main motivational values towards the occupational choice of alpine farming.

In order to provide a first assessment of the resulting categories, descriptive statistics were computed for each individuated cluster and for the whole sample. Such descriptive values are provided for both those variables used to individuate the clusters as well as for the other variables not directly involved in the computing procedure. These values allow the identification of differences and similarities between the groups, and reveal the level of cohesiveness within the clusters.

² This analysis and paragraph are extensively based on a manuscript (Calabrese, C., S. Mann and M. Dumondel (2012): Determinants of occupational choice in the agricultural sector: the case of the Swiss alpine labor market. In press by the Yearbook of Socio-economics. Sample is represented by the 120 interviews with the employees.

3. Results

3.1. Farm sample description

As previously stated, the heterogeneity of the sample was a desirable characteristic since it allowed the consideration of differences among the alpine farms such as traditional behaviors (e.g. herd management or cheese specialties), product markets, and laborer availability.

Therefore, the sample included different farm types, altitudes, accessibilities, management systems and other characteristics. An overview is given in the following table.

Table 3.1. Overview of the 50 alpine summer farms selected for the survey.

Characteristic	N	Characteristic	N
Region		Farm type	
Bern	12	Dairy cows	23
Moesa	16	Livestock	14
Ticino	4	Goats	4
Lower Engadine	18	Mixed	9
Altitude class		Farm management	
< 1500	8	Single	9
1500-1800	15	Couple	11
1800-2100	19	Family	8
> 2100	8	Family with employee	7
Dairy production		Group	15
None	17	Employees' origin	
Milk	6	Swiss	20
Cheese	27	Foreign	22
Accessibility		Mixed	8
By foot	12		
By car	38		

Source: Own elaboration based on the survey on 50 summer farms.

3.2. Employees' descriptive results

Table 3.2 gives an overview of the main data collected for the employees. The sample is characterized by a slight majority of male and foreign employees. The mean age of the farmers was 38 years (SD= 12.9, range 14 – 68 years). Although most of the interviewees were raised in the countryside and have an agricultural education, nearly 70% of the employees work in a non-agricultural sector during the rest of the year. The average salary is just under CHF 12,000 for the entire season (about four months). 20% (N=21) of those interviewed stated that they would not return to the summering farm the following season.

Table 3.2. Main attributes of employees.

Variable	N (%)	Variable	N (%)	Mean (SD)
Interview location		Age		38.7 (13)
Bern	26 (22)	Role on the summering farm		
Moesa	32 (27)	Cheesemaker	29 (24)	
Ticino	16 (13)	Herdsmen	54 (45)	
Unter-Engadin	46 (38)	Assistant	9 (8)	
Gender		Several duties	28 (23)	
Male	72 (60)	Experience ***		
Female	48 (40)	No. of summers		9.2 (9.3)
Origin		Problems ***		
Swiss	57 (47.5)	Yes	52 (46)	
Foreign	63 (52.5)	No	62 (54)	
Childhood residence ***		Workload *		
City	20 (17)	(1=very low,...5=very high)		3.8 (0.8)
Country	99 (83)	Hours work/day		12.33 (2.9)
Education		Evaluation of the infrastructure *		
In agriculture	63 (53)	(1= very bad,...5= very good)		3.5 (1.1)
In other sector	56 (47)	Salary (CHF/4 months)		11843 (4052)
Winter occupation				
Agriculture	37 (31)			
Non-agricultural	83 (69)			

Note: Observations (N)= 120

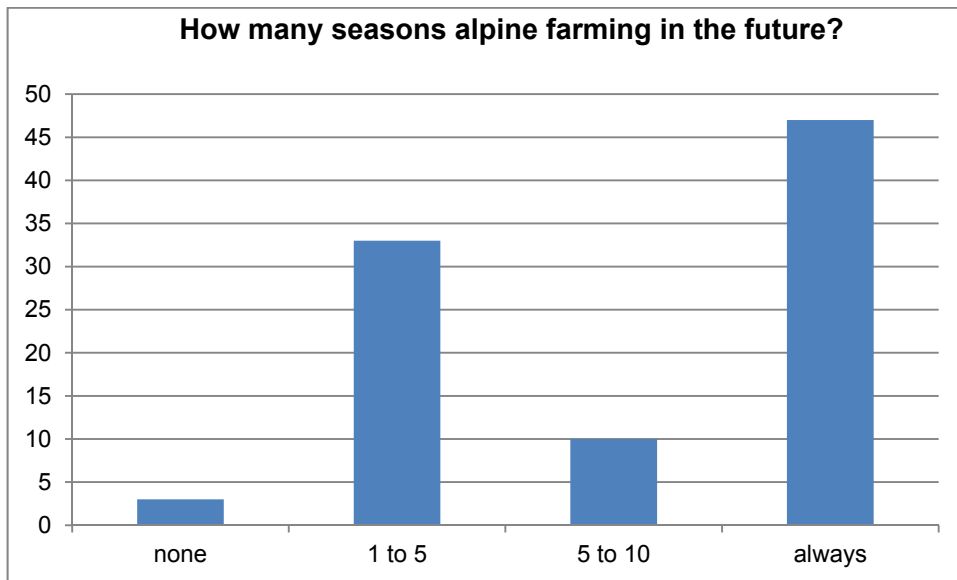
SD indicates standard deviation

Significant difference between "Returners" and "Not Returners" is denoted with *, **, *** at the 10%, 5% and 1% levels, respectively (Mann-Whitney U test)

Option "Don't know" was recoded as missing values.

Source and sample: Own elaboration based on the survey on 120 employees.

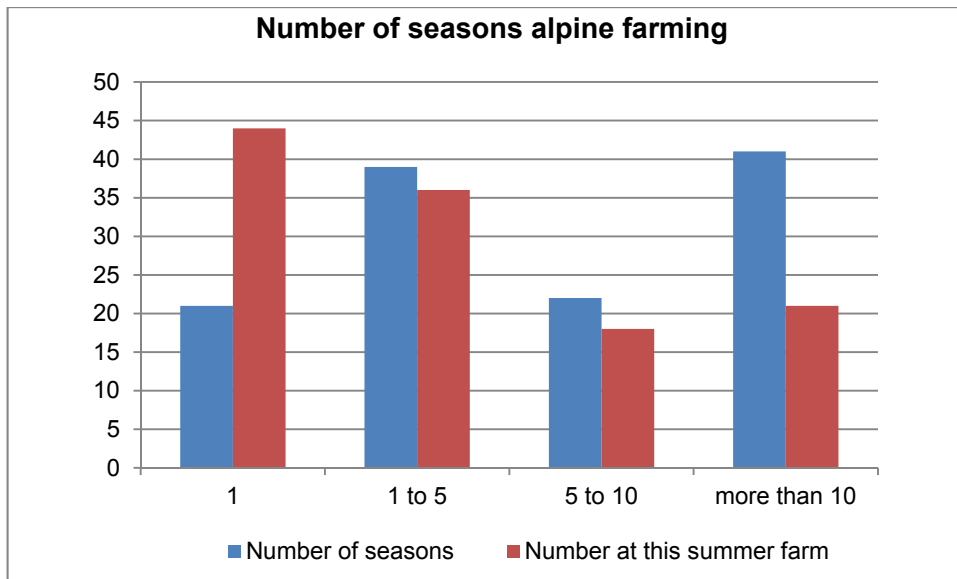
The sample was also studied discerning among the “*Returns*” defined in this document as those employed which declared they would return the next summer to the same summer farm and the “*Non>Returns*” defined as those which stated that they would not return to the same summer farm again.



Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.1. Number of seasons that the employees declared is willing to do in the future.

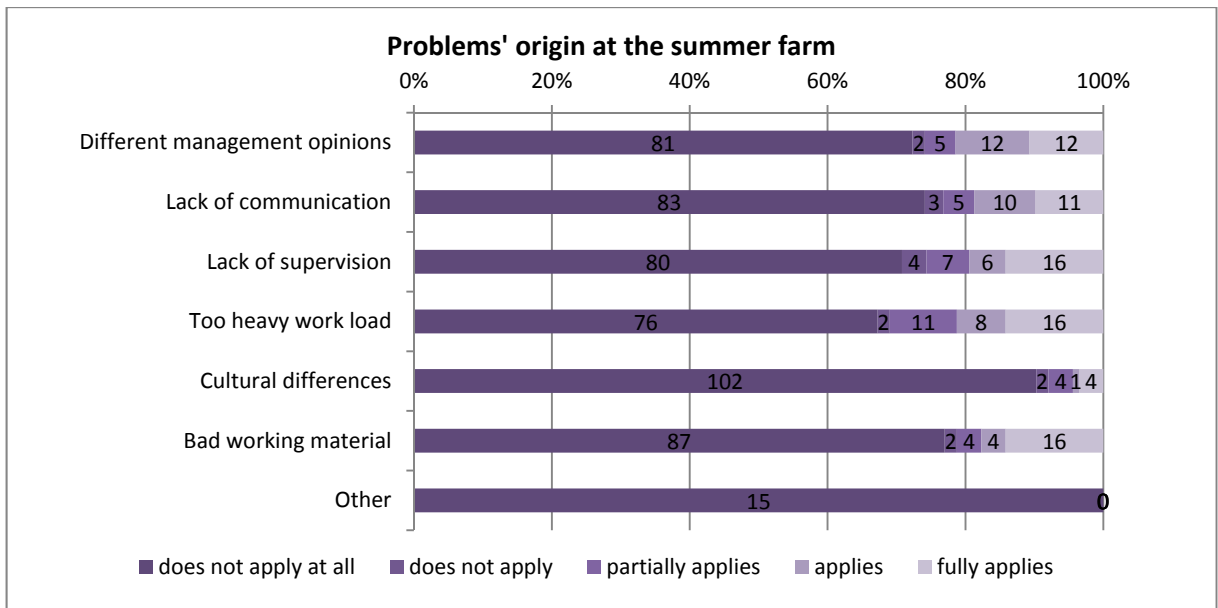
On average, respondents had experienced nine seasons on summering farms, although the standard deviation was equally high (Mean of group “*Returns*”= 10.94 and Mean of group “*Non>Returns*”= 5.11).



Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.2. Number of seasons of alpine farming in general (blue) and on the current summer farm (red).

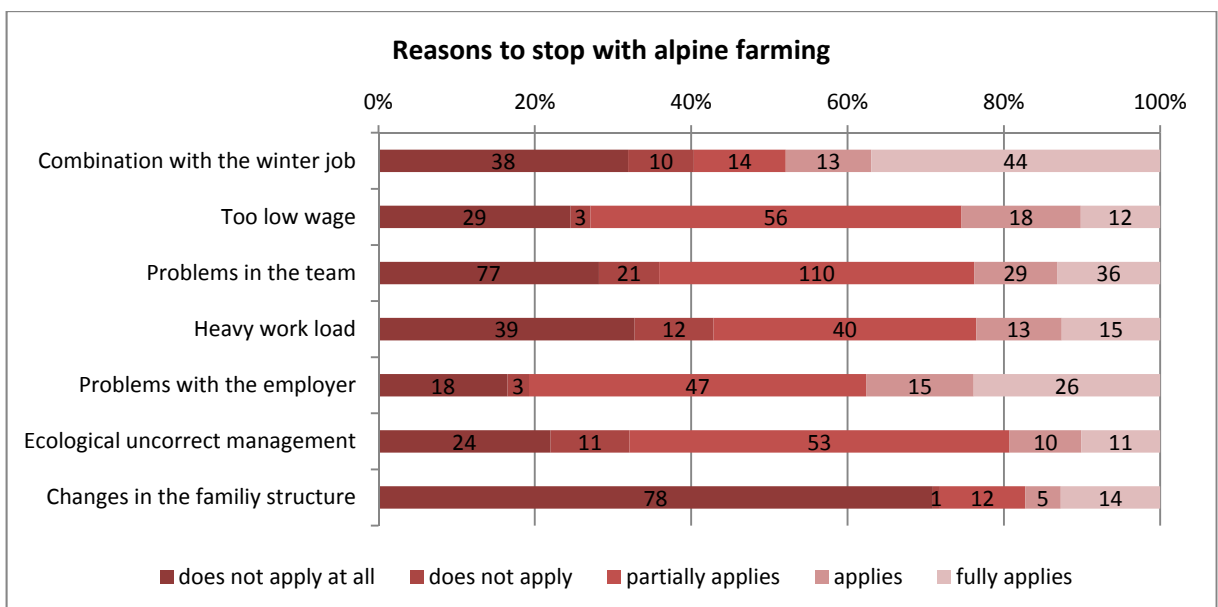
Almost half of those interviewed (46%) declared that they had experienced some sort of problem during the current (2011) alpine farming season (85% of "Returners" and 41% of "Non-Returners"). These two variables as well as an urban vs. rural residence in childhood varied significantly between the "Returners" and the "Non-Returners" groups (71% of "Returners" and 88% of "Non-Returners" grew up in a rural residence). Another variable significantly distinguishing the groups from one another was the evaluation of workload (Mean of group "Returners"= 3.73 and mean of group "Non-Returners"= 4.23, median scored 4 (i.e. "high") for both groups) and infrastructure on the summering farm (Median of group "Returners"= 4 (i.e. 'good') and median of group "Non-Returners"= 3 (i.e. "satisfactory").



Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.3. Origin of issues among the employees at the current summer farm

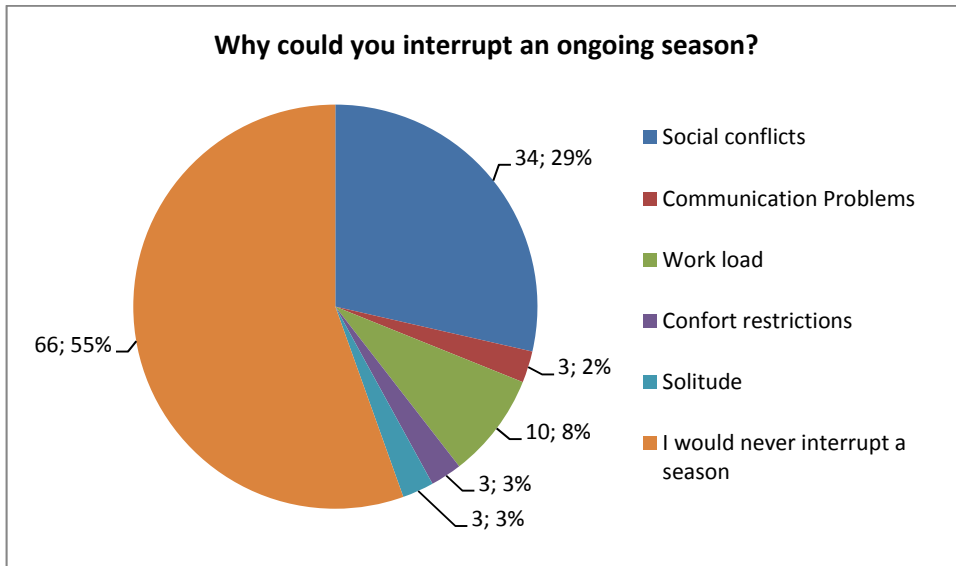
Not all employees are engaged with alpine farming for the long term. In order to identify which factors play a role determining the future non-return of the workers we asked the respondents which reasons may lead them decide not keep working in the alpine farming sector.



Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.4. Assessment of the important aspects of an alpine summer farm.

We also report here (Figure 3.5) the reasons which usually lead workers interrupting an ongoing season. Almost 60% of the workers stated that they would never interrupt an ongoing working season. Among the remaining 40%, the main issue was characterized by social conflicts and by an excessive work load, although rather less important (9%).



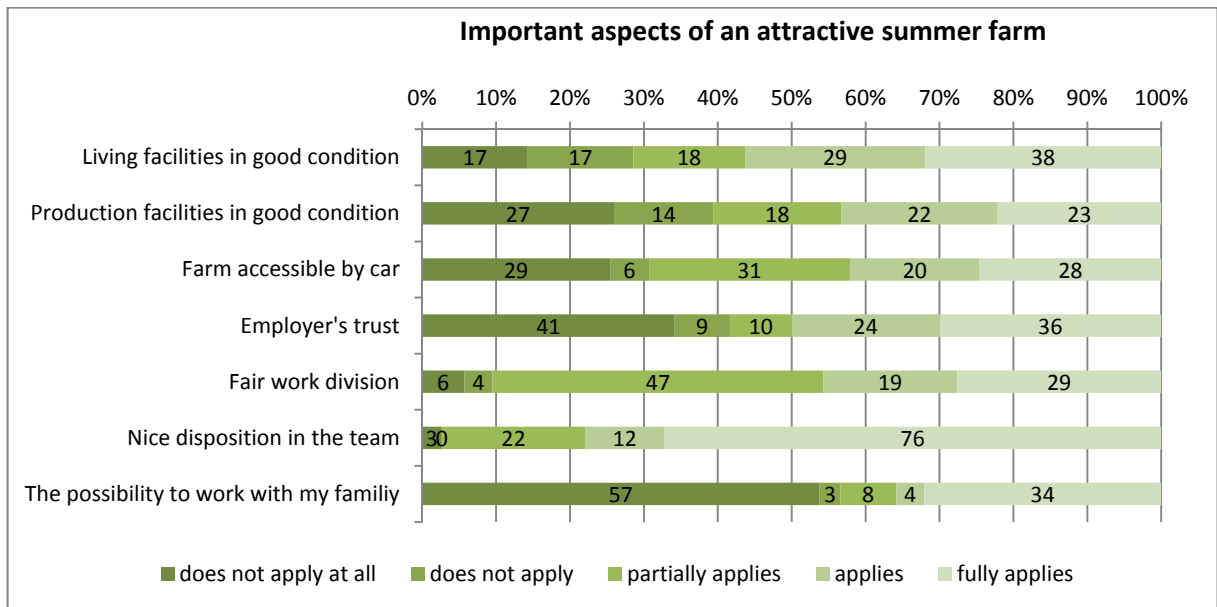
Multiple response were possible

Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.5. Reasons for employees to interrupt an ongoing season.

Some aspects as a good infrastructure or a nice disposition in the team can determine the future return of an employee to the same farm or not.

We asked the employees which factors determine an attractive summer farm from their point of view. The answers can be observed in following graph.



Source and sample: Own elaboration based on the survey on 120 employees.

Figure 3.6. Assessment of the important aspects of an alpine summer farm.

3.3. Occupation during the winter³

The occupation during the winter and its compatibility with alpine farming represented one of our research questions. Winter occupations included students, housewives, workers, jobs in the restaurants' industry, engineers and university professors. We classified these winter occupations in blue-collar jobs (61.1%), white-collar jobs (15.5%), students (18.8) and retired (4.4%). Respondents with white-collar jobs were mainly natives (70%). 12% of the respondents had a seasonal job also during the winter (e.g. employment in sky resort facilities), 52% had yearlong occupations and the remaining 26% were either students, housewives or retired.

³ This paragraph is extensively based on an early version of the manuscript "Alpine farming in Switzerland – discerning a lifestyle-driven labour market" submitted for scientific publication by the Review of Social Economy. Sample is represented by the 120 interviews with the employees.

The alpine farming labor segment attracts people and workers from very different socio-economic backgrounds. About 23% were either students or retired which usually have more flexibility compared with other occupations. Results show that for half of the respondents, alpine farming implies finding a winter employment allowing them at least four months break during the summer.

3.4. Work load and average number of livestock unit per worker

The work load can be estimated on the base of the number of Livestock Units (LU) per employee. On average, workers had about 28 LU to manage (median). However the sample was characterized by few cases with quite higher livestock rates per worker. In the following table, also mean and standard deviation values are provided discerning between region and farm-type. The limited sample size does not allow the identification of significant regional differences.

	Counts	Median	Mean	SD
BE	12	20	19	10
cheese	11	20	17	9
none	1	34	34	
MO	16	34	69	102
cheese	5	28	60	75
milk	1	58	58	
none	10	36	74	122
TI	4	40	34	17
cheese	4	40	34	17
UE	18	33	32	19
cheese	7	31	30	16
milk	5	23	24	16
None	6	60	41	23
Total	50	28	41	61

Farm type definition

Milk: with milk production but no transformation

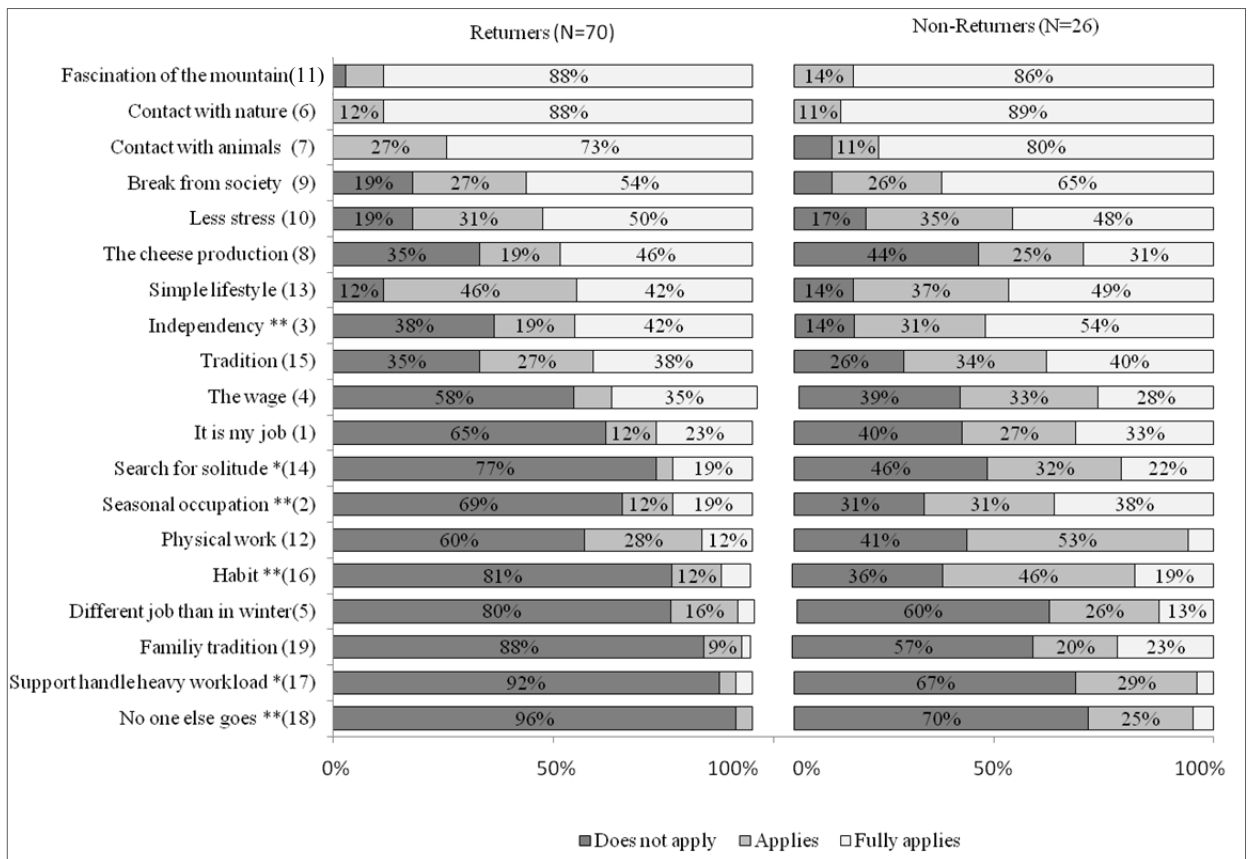
Cheese: with alpine cheese production at the summer farm

None: livestock farming only

Source and sample: own elaboration based on the survey on 50 summer farms.

3.5. Motivational values' for the employees' occupational choice

In Figure 3.7, the percentages of the responses to the questions as to the reasons for taking part in alpine farming (motivational variables) are given for both groups (*Returners* and *Non-returners* as previously defined).



Note: Significant differences between 'Returner' and 'Non-Returners' is denoted with *, **, *** at the 10%, 5% and 1% levels (Mann-Whitney U-test).

Values below 5% are shown only graphically.

Source and sample: own representation based on the survey with 120 employees.

Figure 3.7. Employees' motivational variables

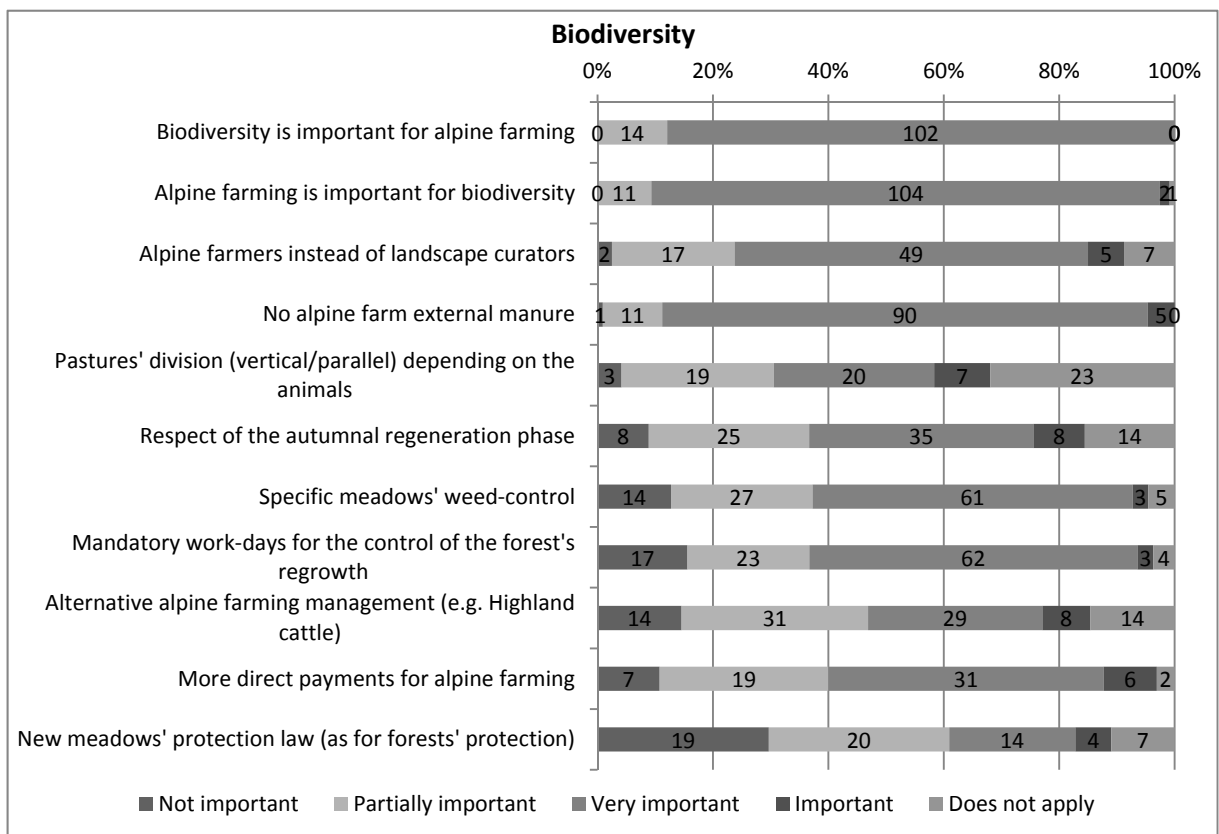
Variables associated with the natural environment (item nos. 6, 7, 11) were always important reasons for the interviewees. Variables related to the search for a period of peace and a break from society as well as a simpler lifestyle (item nos. 9, 10, 13) also proved fairly influential. Upholding tradition (item no. 15) also appears to play a role in this choice of employment. According to the results of the Mann-Whitney U-test, groups differed in terms of the feeling of independence (item no. 3) and the view of

alpine farming as interesting seasonal job (item no. 2), which for some of them became with time a habit (item no. 16). Other aspects distinguishing the two groups of respondents concern the importance of supporting their family handling a heavy workload, and the feeling that no one else would go if they did not.

3.6. The ecological management

The impact of the traditional management on the biodiversity conservation was an important part of the project. The hypothesis is that the loss of experienced laborers and their replacement with workers with a less solid background would have negative impacts on the environment in the alpine region.

The questions reported in following table aim at assess the point of view of the employees towards specific and current environmental issues in this region.



Source and sample: Own elaboration based on the survey with 120 employees.

Values equal or below 5 are shown only graphically.

Figure 3.8. Importance of several ecology- and biodiversity-related aspects.

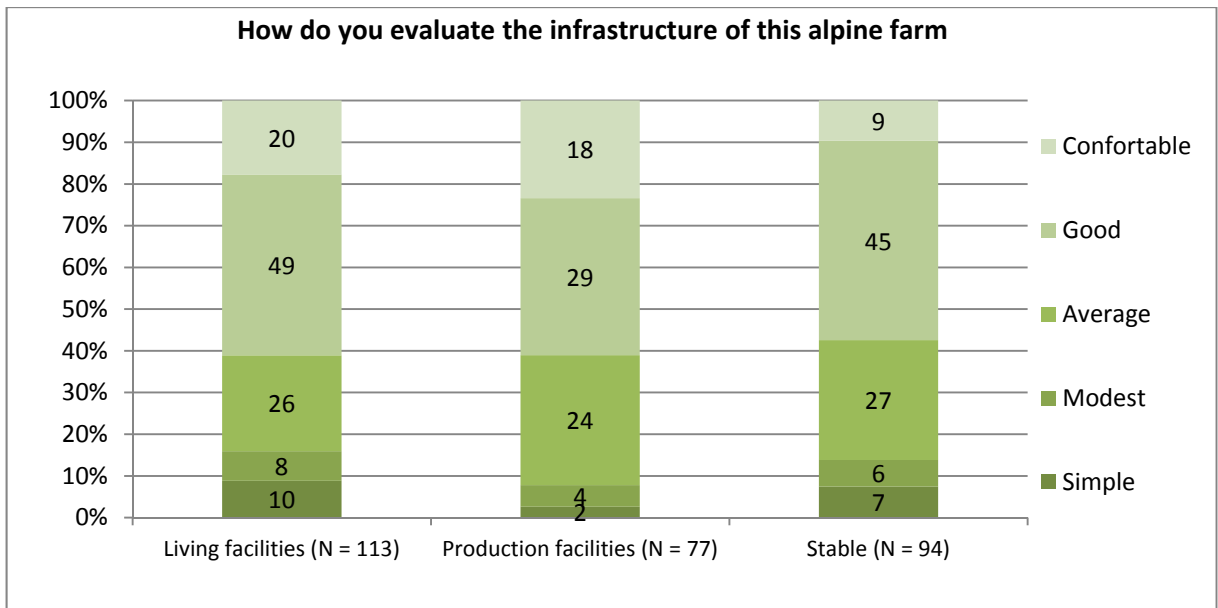
The important role played by biodiversity for alpine farming (milk quality, tourism) was shared by 85% of the respondents. Even more important (87%), was considered the role of alpine farming for biodiversity (e. g. conservation of open areas). However, the management of the alpine meadows can be performed differently from farm to farm and it can also have many negative consequences for the environment. 75% of the respondents agreed that no external manure should be allowed, 51% found that the problem of pest-weeds' control should be more specifically addressed as well as the forests re-growth on the pastoral surfaces (52%) and finally 29% recognized the importance of the regeneration phase in autumn for the vegetation.

Several workers were not aware on the exact amount of the direct payments received by their employers and had in general no specific opinion on the political instruments for alpine farming.

In general employees considered the proper ecological management of the alpine meadows extremely important for the environment and agreed that the loss of experienced employees together with their know-how represents a threat for the future sustainable development of the alpine region.

3.7. Infrastructure

The availability of a functional and comfortable infrastructure was hypothesized been relevant especially for those experienced workers going alpine farming summer after summer. In general employees declared that a simple alpine hut was fine but that it does need to be functional. The results show that in general workers considered the infrastructure rather positively.

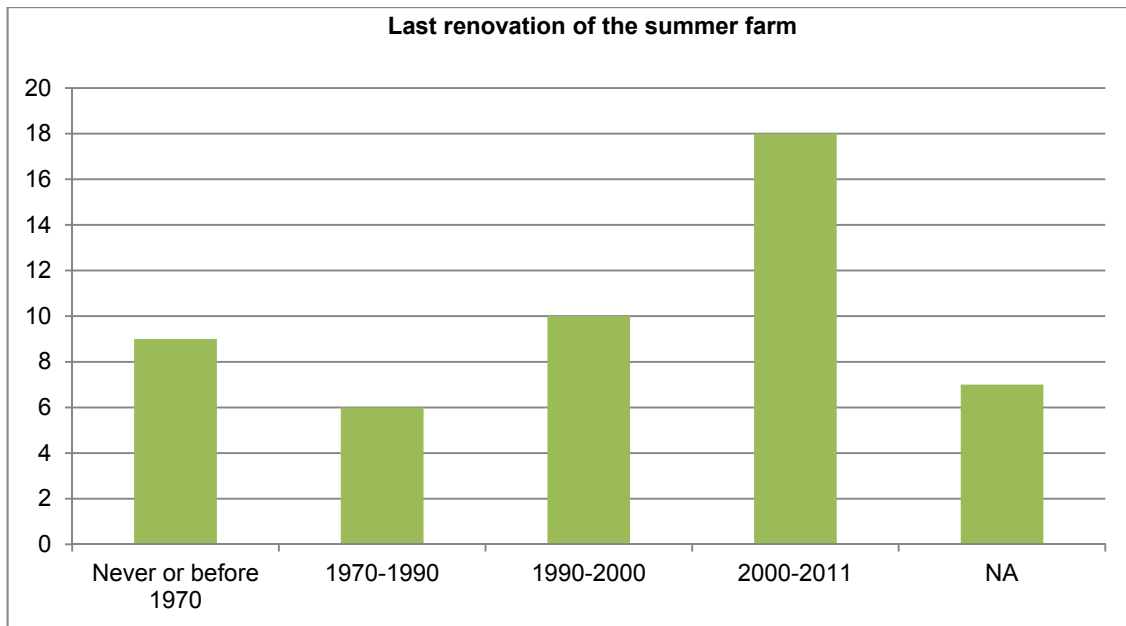


Source and sample: Own elaboration based on the survey with 120 employees.

Figure 3.9. Infrastructure evaluation according to the employees.

Nevertheless, due to the heavy work load and outdoors tasks, the presence of a working heater, drinkable water and of an adequate place to sleep is considered essential nowadays. Summer farms which do not provide with such basic conditions, should also expect a low supply of experienced workers. As further data analysis will show, (regression analysis) a proper infrastructure is often considered even more important than the wage itself.

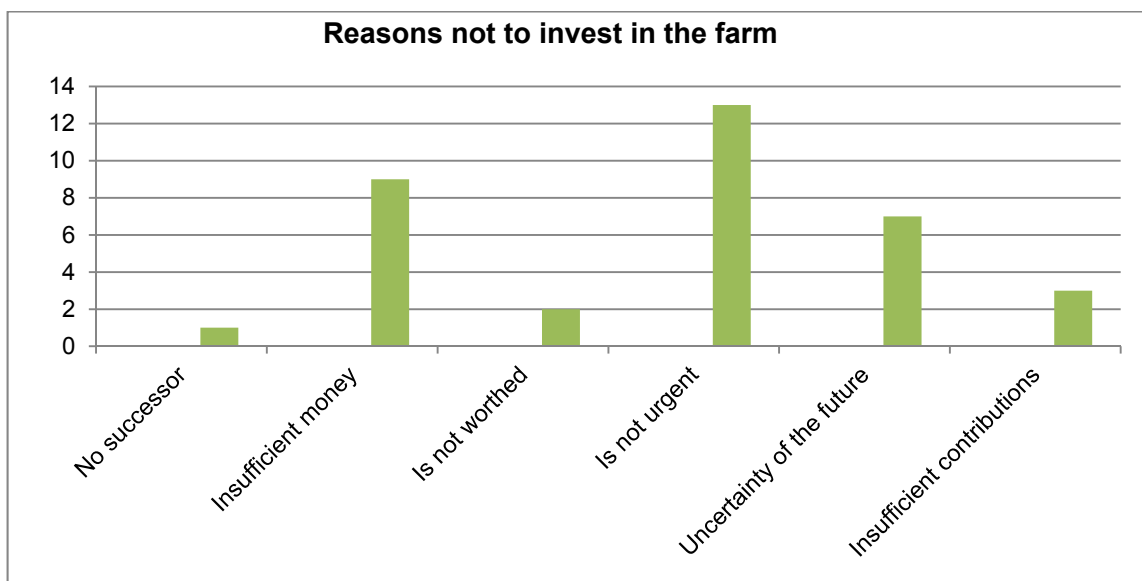
More than half of the summer farms had been renovated within the last 2 decades. However, the term “renovation” of the summer farm was often interpreted differently by the respondents. Moreover, most of the times renovations took place with small improvements in different years, according to the necessities.



Source and sample: Own elaboration based on the survey on 50 summer farms.

Figure 3.10. Decade of the last renovation of the summer farm

If the employers had answered that a renovation was necessary, than we asked what was holding them to invest. Main reasons were related to the costs and the urgency of the necessary improvements. Moreover, often the summer farm was only rented and not owned by the employer (N=11). In these cases, employers stated that the condition of the infrastructure did not depend directly on their decision.



Source and sample: Own elaboration based on the survey with 50 employers.

Figure 3.11. Reasons not to invest even if necessary in the summer farm

3.8. Qualification process in alpine farming and offer of courses

Among the objectives of the study, an evaluation of the qualification process was proposed.

An education and the experience in the agricultural field are obviously very important aspects for the alpine farming labor segment. Half of the respondents (i.e. N=60) declared growing up in an agricultural context. 18% frequented a secondary school with major in agriculture and 4 respondents had an academic degree. Finally, 47% had an education in a non-agricultural field.

Table 3.3. Educational level and focus of the employees

Education	N
Grew up in an agricultural context	38
School with major in agriculture	22
Academic degree	4
Other type of education	55
No answer	1

Source and sample: Own elaboration on the survey with 120 employees.

We asked the respondents if they had taken any courses specific in alpine farming techniques and if yes, which was the main topic (e. g. cheese preparation). It is important to underline that in Switzerland, at each alpine summer farm where milk is transformed in cheese it is mandatory that at least one member of team took part at one of these courses once.

Table 3.4. Participation rate at alpine farming courses

Did you take any alpine farming courses?	N
Yes, for alpine cheese-makers	40
Yes, for herdsmen	5
No, none	61
Yes, with another main topic	4
No answer	10

Source and sample: Own elaboration on the survey with 120 employees.

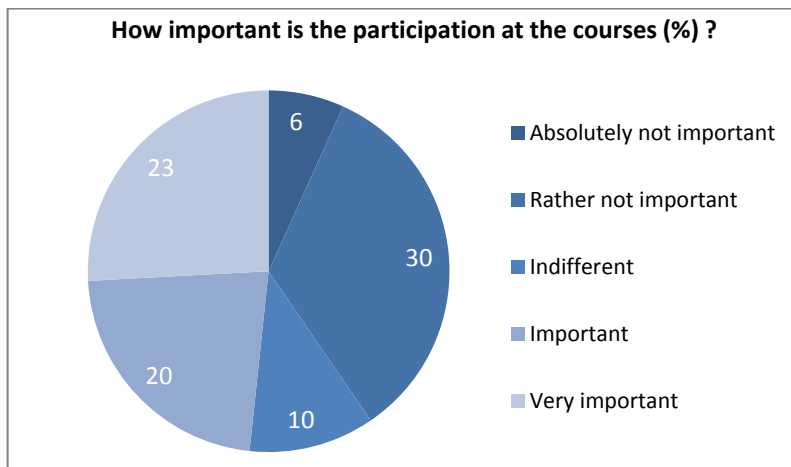
The participation at subsequent refresher-courses was significantly lower and obviously reserved to very experienced laborers only.

Table 3.5. Participation rate at refresher alpine farming courses

Did you take any refresher-course?	N
Yes	16
No	104

Source and sample: Own elaboration on the survey with 120 employees.

In general, the importance of these courses was well recognized (Figure 3.12). 43% of the employees considered the participation at the alpine farming qualification courses important or very important. Those who considered it indifferent or not important were usually workers with a solid background in agriculture and knew already the necessary techniques.



Source and sample: Own elaboration on the survey with 120 employees.

Figure 3.12 Evaluation of the importance of the qualification courses of the employees

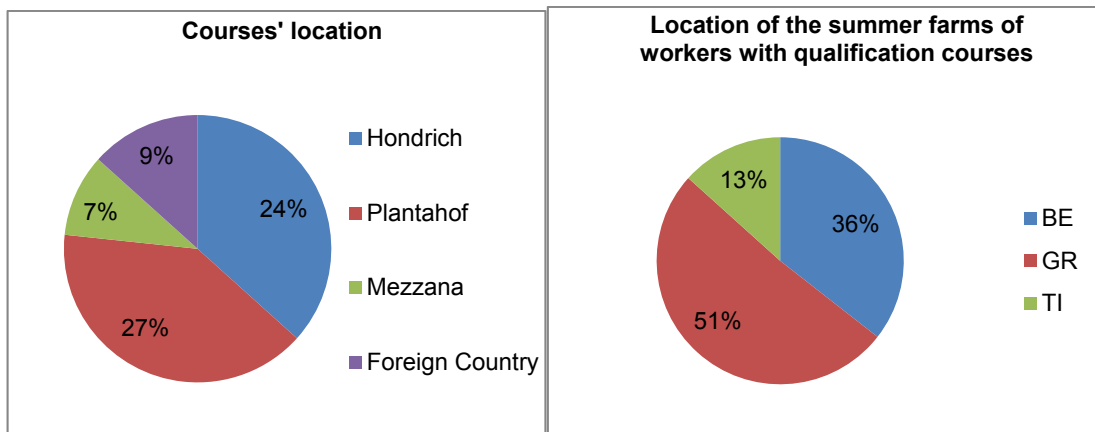
An evaluation of the qualification courses was asked aiming at improving the offer. The length was in general considered appropriate. For 66% of the respondents the courses' offer in their region was considered appropriate and 88% of the workers felt well prepared to perform their tasks.

Table 3.6. Length, offer and evaluation of the courses.

	Longer	Correct	Shorter	I don't know
Are courses' length appropriate or should they be longer/shorter?	5	34	4	77
	Yes	No	I don't know	
Is there an appropriate courses' offer in your region?	80	9	31	
Do you feel well prepared for your tasks?	106	13	1	

Source and sample: Own elaboration on the survey with 120 employees.

The location of the courses was among the questions asked. The rates are reported in following graph together with the Canton where the respondents who had taken those courses were working in summer 2011.



Source and sample: Own elaboration on the survey with 120 employees.

Figure 3.13: Alpine farming qualification courses' location and working location of respondents which had taken these courses.

We asked directly what could be done to improve the qualification courses for alpine farming. Although most of the participants evaluated the qualification courses highly positively, a few suggestions were still collected.

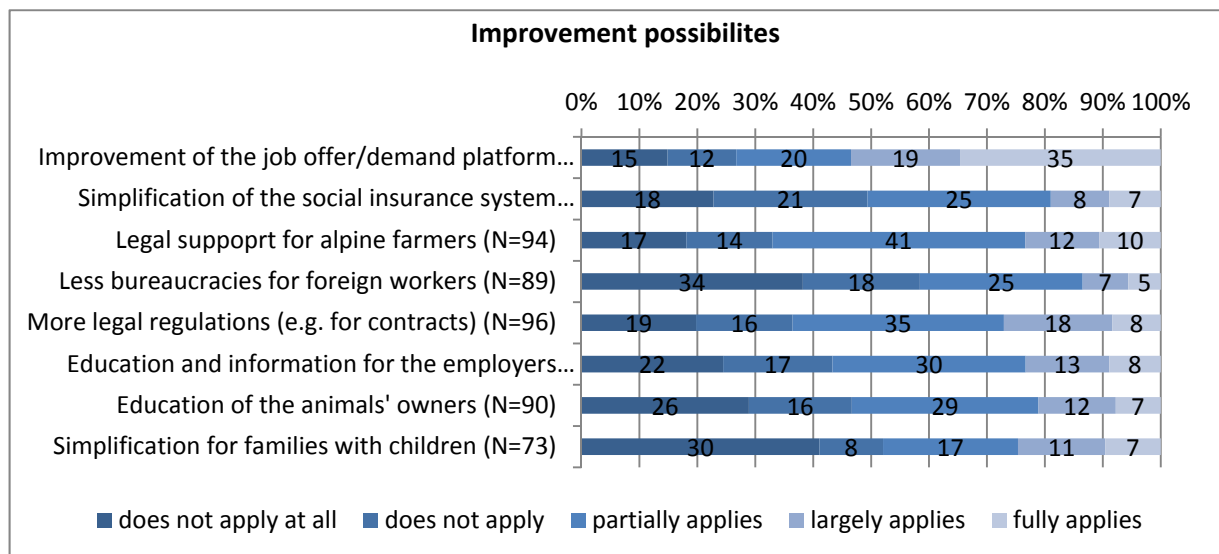
Table 3.7. Improvement suggestions for the alpine farming courses

	Counts
More practical lessons and less theory	6
Less participants or more courses' offer	5
Less but more consistent and updated written material	3
More variety about cheese specialties (other regions, goat-cheese)	2
Too industry or European rules' orientation	2
Improve the courses' organization	2
Minimal experience level for participants	2
More refreshments' courses offer	1
Herdsmen's' courses for all animals' categories (not only sheep)	1

Source and sample: Own elaboration on the survey with 120 employees.

3.9. Improvement possibilities

During the survey, it was asked to the employees what could be done to improve the labor market situation in the alpine farming sector. We proposed a number of possible suggestions. Results are reported as it follows.



Source and sample: Own elaboration on the survey with 120 employees.

Figure 3.14. Possible improvement's possibilities for the alpine farming labor sector.

Most of the workers relied on the job platform “zalp” to find a summer farm to work on. The evaluation of this service was always extremely well valued. Legal support for

alpine workers was considered an interesting option (52%) as well as more definitions and controls regarding the work contract (51%). More information and education of the employers and of the animals' owners were also considered possible ways for improvement possibilities. Points related to the simplification of insurances or documentations were often not of direct interest for the employees because were issues that the employer usually took care of.

Most of the respondents were rather not interested in answering this section of questions.

3.10. Employers

Following table gives an overview of the main data collected for the employers. In this sample we have a majority of males (92%) with an average age of 48 years (min= 23 and max =66). More than half of the employers were also animals' owners (62%) and manage their own agricultural farm in the lowlands during the winter (82%). Moreover, most of them grew up in the country (92%) and in an agricultural context (78%).

Table 3.8. Employers' main characteristics

Variable	N (%)	Variable	N (%)
Interview location		Role on the summering farm	
Bern	13 (26)	Summer farm manager	34 (68)
Unter-Engadin	19 (38)	Animals' owner	31 (62)
Moesa	12 (24)	Tenant	18 (36)
Ticino	6 (12)	Winter occupation	
Gender		Agricultural farm manager	41 (82)
Male	46 (92)	In agriculture, as employee	1 (2)
Female	4 (8)	Other agricultural activity	2 (4)
Education		Not in the agriculture	6 (12)
grew up in an agricultural context	39 (78)	Childhood residence	
secondary school - agriculture	20 (40)	City	4 (8)
secondary school –other field	6 (12)	Country	46 (92)
academic education	1 (2)	Age (Mean)	48

Note: Observations (N)= 50
 Relate to 45 alpine summer farms.
 SD indicates standard deviation
 Option "Don't know" was recoded as missing values.

As by the employees we investigated also by the employers the participation at qualification courses in alpine farming techniques. 60% of the employers did not take any specific course in alpine farming which might be expectable since many employers grew-up in an agricultural context, manage an agricultural farm in the lowlands and have therefore plenty of experience. The fact that many of them took refresher courses shows that they tend to prefer shorter and more targeted courses to the formal path of education.

Table 3.9. Participation rate of employers at qualification courses

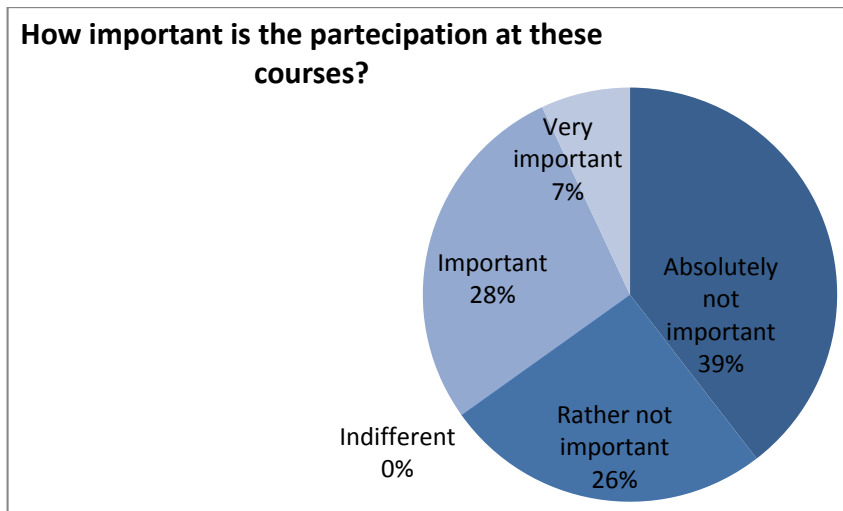
Did you take any alpine farming courses?	N
Yes, for alpine cheese maker	12
Yes, as herdsman	4
No, none	30
Other	4

Source: own evaluation

Did you take any refresher-courses?	N
Yes	34
No	12
No answer	4

Source: own elaboration

The participation to more advanced qualification- and refreshment-courses was way more popular. This is probably due to the shorter length and specialization level of these courses. In general, the evaluation of the importance of the qualifications' courses is strictly dependent with the amount of experience in the agricultural sector. Nevertheless, 35% of the employers considered the participation at qualification courses important or very important.

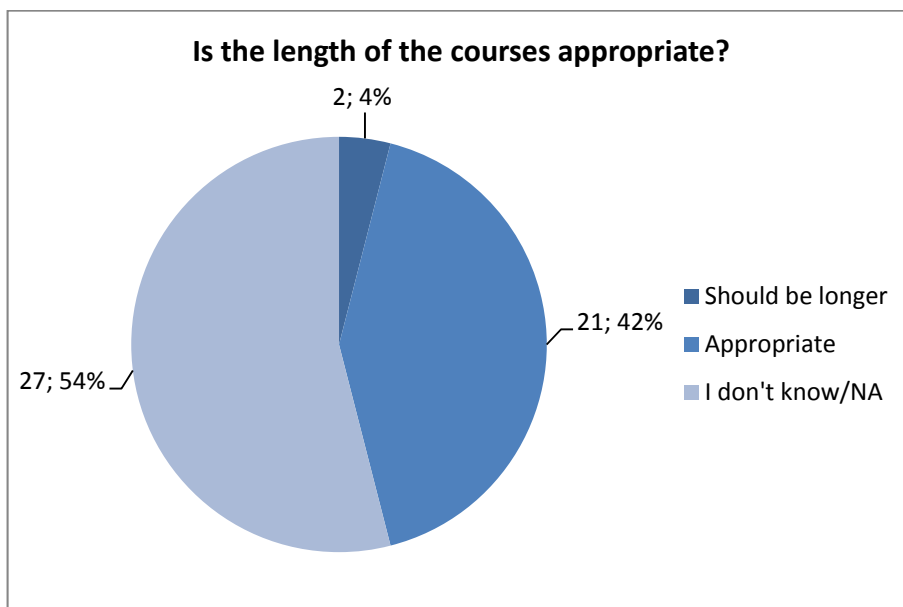


Source: Own elaboration.

7 observations recoded as "I don't know" or missing values

Figure 3.15. Evaluation of the participation to qualifications' courses

Courses' evaluation was in general very positive. Also the courses' length was considered appropriate by 55% of the employers. However, many of the interviewed (i.e. 40%) avoided answering the question.



Source: Own elaboration.

27 observation were either "I don't know" or missing values.

Figure 3.16. Employers' evaluation of courses' length.

Also here, concrete measures for courses' improvements were asked.

Nine employers proposed a few suggestions: more practical exercises with less theory (n=5), less participants (n=1), lower participation fees (n=1), more offer for herdsmen's courses (1), more consultancies once at the summer farm.

3.11. Labor supply: current situation and future challenges

One of the objectives of this study was to identify how the labor market in the alpine farming sector is developing. In following graph, an overview of the most important characteristics of the employees at the alpine summer farm is reported. Once again the importance of the qualifications' courses can be observed for the team-leader (question 1) and for the whole team (question 8). Employers agree that at least the team leader needs to be well prepared. Less important is if the rest of the team took part at qualification courses as well. Workers which remain several seasons at the same summer farm and are able to work independently are very well valued. For an employer, it is also very important that the employees can be trusted and that they can work well as a team. The cooperation with the animals' owner, with the other summer farms nearby as well as with tourists was considered, in general, rather not important.



Values express the mean of the sample

Figure 3.17. Important characteristics of the employees (or team) at the summer farm

Experience and participation at qualification courses are important aspects for the employers. In following graph, it can be observed how alpine farming experience, the participation at alpine farming courses and the origin of the workers may influence the employment decision in this labor segment.

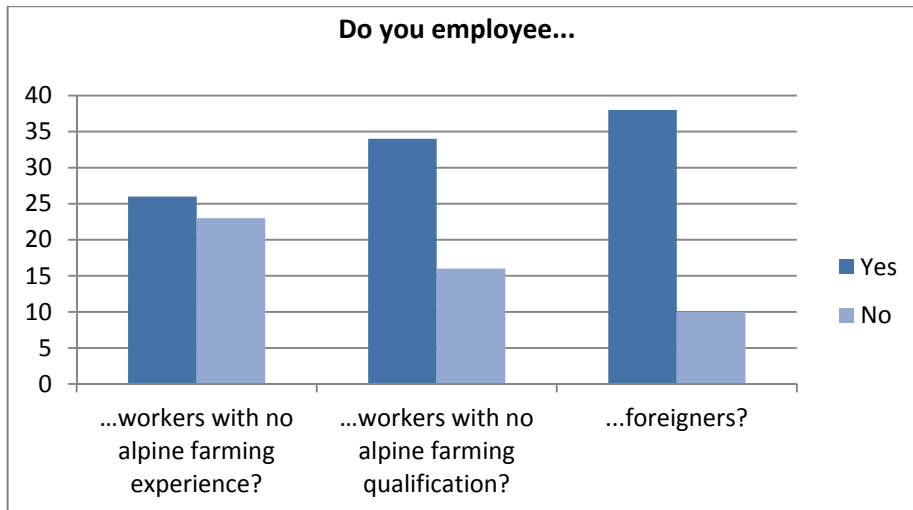


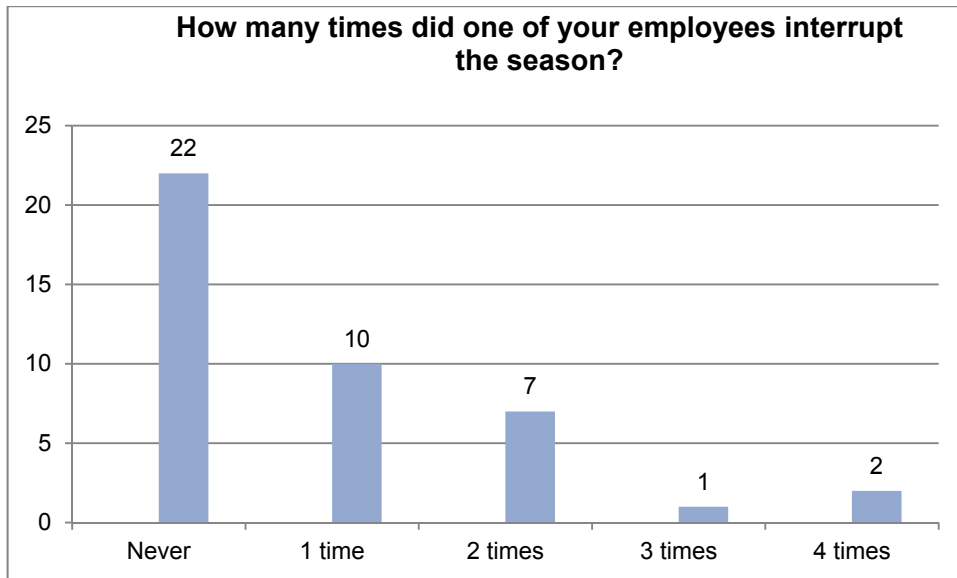
Figure 3.18. Influence of experience, qualification and origin on workers' employment possibilities.

As previously stated, it is very important for the employers that workers remain several seasons at their summer farm. This clearly implies less effort for the employers each year for the search and for the preparation of the workers. Therefore we asked the employers how many years remain their workers on average. The median shows that in general employees remain about 3 years at the same alpine farm.

Table 3.10. Average number of seasons of the employees according to the employees

How many years remain your employees on average? N (%)	
1	15 (30)
2 to 5	22 (44)
5 to 10	8 (16)
more than 10	5 (1)
Average	4.8
SD	5.2
Median	3.0

If dealing with different employees each year is undesirable for the employers, a worker that interrupts an ongoing season represents an extremely complicated situation. For about half of the employers this unfortunate situation actually never happened.



8 observation were either "I don't know" or missing values.

Source: Own elaboration.

Figure 3.19. Counts of cases where a worker interrupted a season according to the employers' experience

According to the employers, the main issues that bring the employees to interrupt the season are related to an unsustainable work load and social conflicts in the team (Figure 3.20).

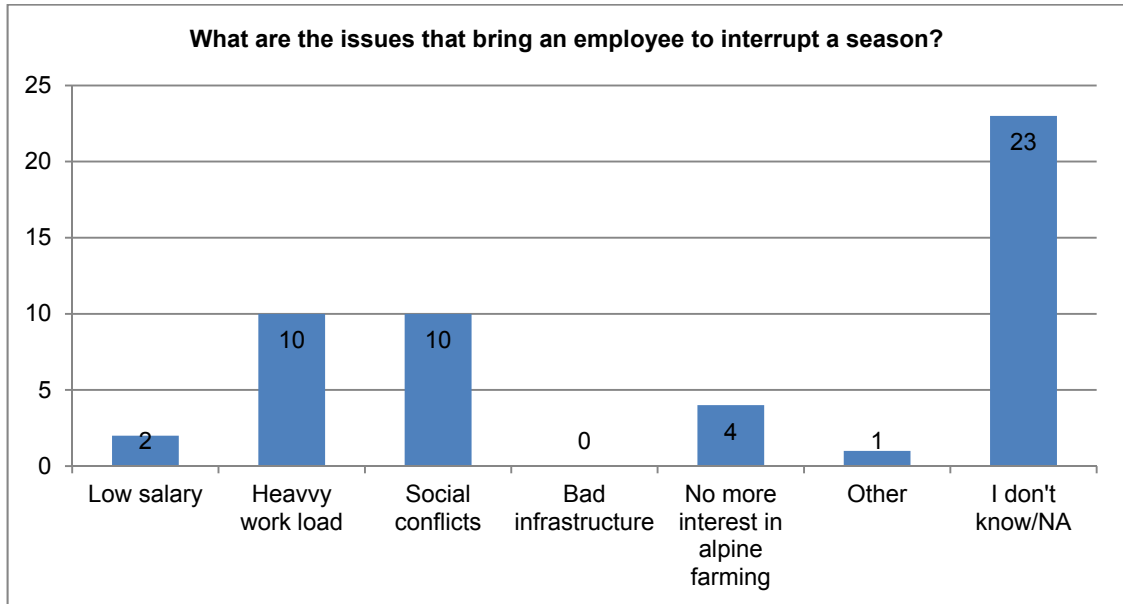
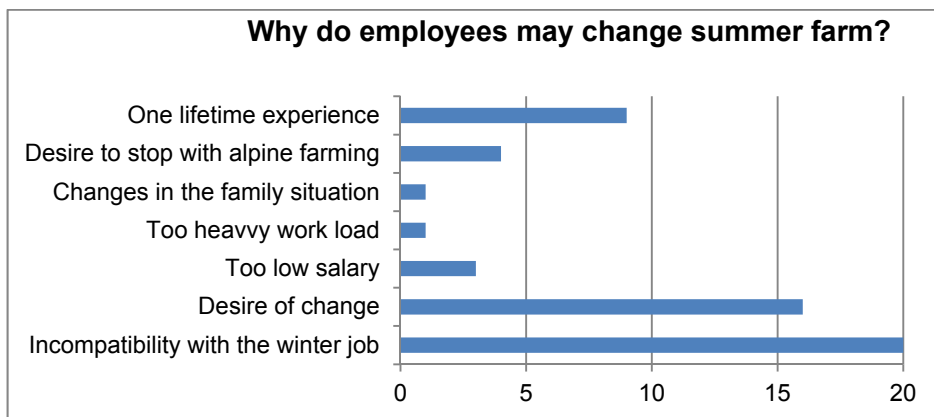


Figure 3.20. Main reasons for an employee to interrupt an ongoing season

The incompatibility of alpine farming with a winter job is the main reason why employers need to search for different employees year after year. Many workers also like to change the alpine farm because they desire the experience something different each season. Finally some workers are looking for a one-lifetime experience.



Multiple responses were possible: 50 Employers, 54 statements
Figure 3.21. Reasons why employees change each summer

A crucial point of the survey was on the trends in the labor market. Is the offer of experienced workers stable or is decreasing? Do employers observe an increasing offer of less experienced workers? How does the supply of foreign laborers change?

We report the employers' answers to this question in the following graph.

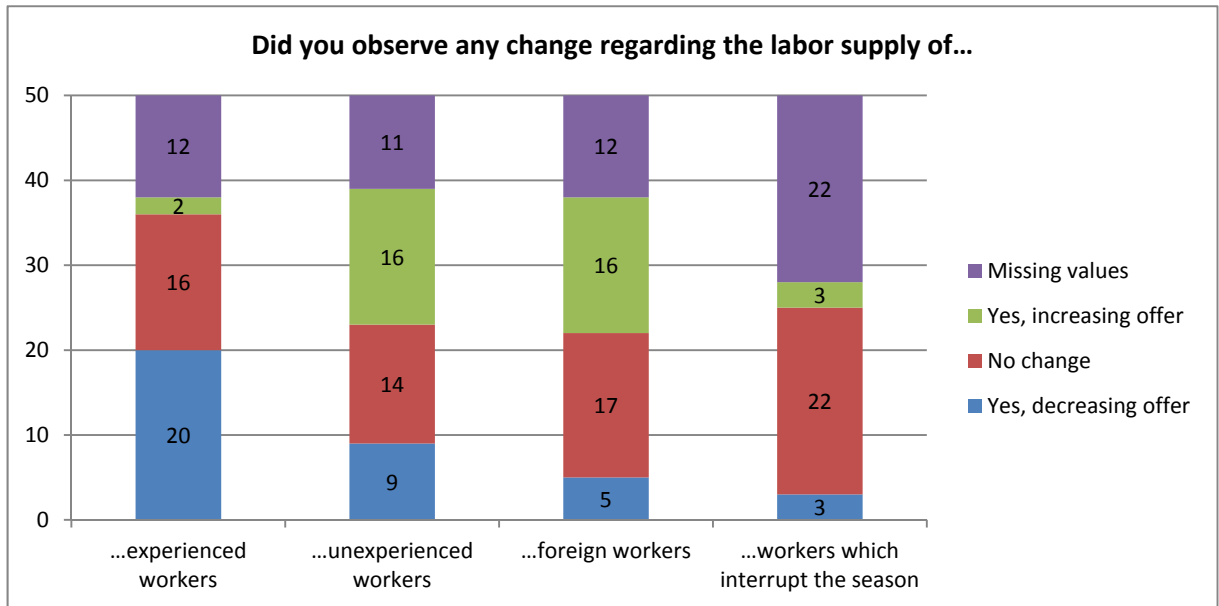


Figure 3.22. Trends of labor supply and labor demand in the Swiss alpine farming sector.

The amount of experienced workers is clearly decreasing while the supply of inexperienced laborers tends to increase according to the employers' statements. Also the offer of foreign workers shows an increasing trend while the number of workers interrupting an ongoing seasons does not show any clear change.

The important advertisement role played by the web-site www.zalp.ch was highly recognized and very well valued by the employers. 56% of the employers search almost exclusively on this webpage. Still very appreciated is the recommendation of workers through known people (34%).

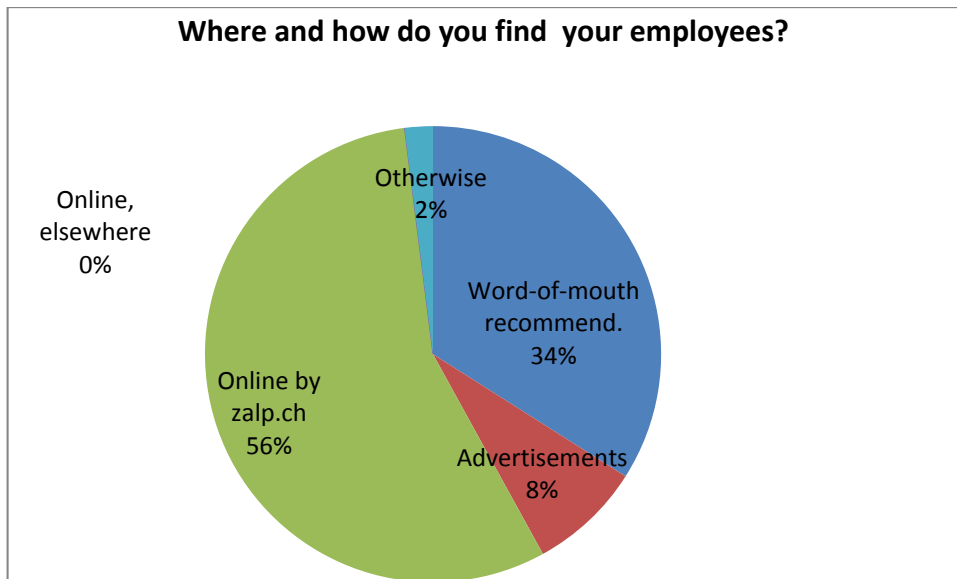


Figure 3.23. Means chosen by the employers to search for their workers

Finally we asked the employers how many years were they planning to keep managing the summer farm. Almost half of the employers plan in stopping within the next 5 years. By cooperative alpine summer farms it is usual that animals' owners turn undertaking this task. For another half of the respondents, the management has a rather long term engagement. Only 1 employer stated that is highly considering interrupting soon managing the farm.

Table 3.11. Future expectations towards managing the alpine summer farm

Do you think about interrupting managing this summer farm? (Counts)	
No, I will remain the manager for the next 1 to 5 years	23
No, I will remain the manager for the next 5 to 10 years	13
I will always go alpine farming	12
I don't know	1
Yes, I am considering interrupting	1
	50

3.12. Results of the regression analysis⁴

The three different logistic regression models indicate which variables contribute to the binary response variable 'Return' (1 for "Returner" and 0 for "Non-Returners"). The results are presented in Table 3.12. The variable "age" had no significant effect on the odds that the employee would return the following summer. The variable "origin" played a significantly negative role, so that, based on the reciprocal of the odds ratio, being a foreigner led to a 2.7-to-6.6-fold decrease in the odds that the employee would come back the following year. Employees who had spent their childhood in the countryside (variable:"background") were not significantly more likely to return the following season than those who were raised in the city. As one might expect, one additional year of experience led to an increase of about 14 per cent in the odds of the employee returning the following year. Moving on to the motivational variables, it can be observed that all of these play a significant role. In particular, employees searching for a simple lifestyle are about 3.2 times more likely to return the following year, and respondents looking for a break from society while working at a summering farm show a 4.6-fold increase in the odds of returning. Rating the fascination of the mountains as one of the main reasons for going Alpine farming increases the likelihood of returning by a factor of 4.8.

⁴ This paragraph is part of an early version of a paper submitted for scientific publication by the Review of Social Economy.

Table 3.12. Binary Logistic Regression Results.

	Model 1						Model 2						Model 3					
	Logg-odds	Odds ratio	95% CI		p-value	Sig.	Logg-odds	Odds ratio	95% CI		p-value	Sig.	Logg-odds	Odds ratio	95% CI		p-value	Sig.
(Intercept)	1.84				0.16	n.s.	1.18				0.43	n.s.	0.13				0.94	n.s.
Personal data																		
Age	-0.03	0.97	0.92	1.01	0.16	n.s.	-0.02	0.98	0.93	1.03	0.51	n.s.	-0.03	0.97	0.91	1.02	0.24	n.s.
Origin (foreign)	-0.81	0.45	0.13	1.48	0.19	n.s.	-1.02	0.36	0.11	1.13	0.09	.	-1.87	0.15	0.03	0.64	0.01	*
Background (in country)	0.80	2.23	0.61	8.49	0.23	n.s.	0.71	2.03	0.54	8.06	0.30	n.s.	1.49	4.45	0.85	28.08	0.09	.
Experience (no. of years)	0.14	1.15	1.03	1.32	0.03	*	0.12	1.13	1.01	1.29	0.06	.	0.14	1.15	1.01	1.36	0.06	.
Motivation Variables																		
Simple lifestyle	1.17	3.23	1.07	10.72	0.04	*	-	-	-	-	-	-	-	-	-	-	-	-
Break from society	-	-	-	-	-	-	1.53	4.60	1.31	18.94	0.02	*	-	-	-	-	-	-
Fascination of the mountains	-	-	-	-	-	-	-	-	-	-	-	-	1.58	4.84	1.18	23.82	0.04	*
Economic Variables																		
I can earn well (applies)	0.05	1.05	0.30	3.80	0.93	n.s.	-	-	-	-	-	-	-	-	-	-	-	-
Salary evaluation (good)	-	-	-	-	-	-	0.14	1.15	0.23	5.53	0.86	n.s.	-	-	-	-	-	-
Salary (1000 CHF)	-	-	-	-	-	-	-	-	-	-	-	-	0.08	1.09	0.91	1.32	0.39	n.s.
Other Variables																		
Workload (heavy)	-1.13	0.32	0.09	1.08	0.08	.	-1.22	0.29	0.07	1.04	0.07	.	-	-	-	-	-	-
Infrastructure (good)	1.68	5.36	1.78	18.33	0.00	**	1.63	5.10	1.62	18.40	0.01	**	1.57	4.83	1.28	21.18	0.03	*
Problems (applies)	-2.22	0.11	0.03	0.37	0.00	***	-2.25	0.11	0.02	0.42	0.00	**	-3.31	0.04	0.01	0.17	0.00	***
Pseudo R ² § (AIC)			0.54 (108)						0.62 (100.2)						0.74 (82.1)			
Variance inflation factor			VIF < 1.38						VIF < 1.42						VIF < 1.49			
Observations			113						104						88			

Note: Dependent variable: "Return to the same summering farm next season"

CI: Confidence interval

Sig: Statistical significance

AIC: Akaike Information Criterion

Odds ratios are significantly smaller or larger than 1, at the 0.1 (.), 0.05 (*), 0.01 (**) and 0.001 (***) levels, or not significantly smaller or larger than 1 (n.s).

§ Generalized coefficient of determination, Nagelkerke (1991).

Source: own representation

By contrast, none of the economic variables played a significant role in determining an employee's return. Using again the reciprocal of the odds ratio, a heavy workload leads to an approximately 3.3-fold decrease in the odds of an employee returning. A good infrastructure consistently influenced the decision to return to the summering farm the following year, increasing the odds of return by approximately 5-fold. Predictably, the odds of an employee returning to the summering farm where problems occurred are considerably lower than those of an employee returning to a summering farm where no problems occurred.

The coefficients of determination (Pseudo R² and AIC) provide us with a measure of the explanatory power and relative goodness of fit of the binary logistic models. Models are presented in an ascending order of explanation of variance, ranging from the first model, in which the variables accounted for 54% of the variance, to the third model, where they explained 74% of the variance. Multicollinearity was tested,

resulting in a variance inflation factor (VIF) below 1.5 for all independent variables included in the final three models, which allows us to draw conclusions about the odds ratios obtained.

3.13. Results of the cluster analysis⁵

Based on data collected with the survey, a hierarchical cluster analysis was carried out using only those variables accounting for the motivational values, revealing four major clusters. In the Table Appendix 1 the main characteristics defining each group are provided in detail. When investigating the scores obtained by means of cluster analysis classification remarkable differences between the groups could be observed and a distinctive 'label' was assigned to each group expressing the main common characteristics of its members:

- Group 1 -- 'The Eremites'
- Group 2 -- 'The Nature lovers'
- Group 3 -- 'The Traditionalists'
- Group 4 -- 'The Tourists-workers'

Both genders were quite well represented in the sample with a slight prevalence of males. The mean age of the respondents was 39 years (SD= 13, range: 14 - 68 years) and the cluster that differed the most from the others regarding this variable was the one of the *Traditionalists* (G3), scoring an older age of 47 years. Looking at the country of origin of the respondents, the *Tourist-workers* (G4) showed a remarkable prevalence of foreign members. Observing the descriptive values obtained for each cluster, a first rough separation between the first two groups (*Eremites and Nature-lovers*) and the last two groups (*Traditionalist and Tourist-workers*) could be made. Indeed it seems that both the *Traditionalist* and the *Tourist-workers* (G3 and G4) have a stronger relationship with agriculture than the *Eremites and Nature-lovers* (G1 and G2).

People working as employees at alpine summering farms mostly grew up in the country-side. However, from this survey it can be observed that this is particularly true

⁵ This paragraph is part of a paper in press by the Yearbook of socioeconomics in agriculture.

for the *Traditionalist* (G3) and the *Tourist-workers* (G4) (where more than 90% of those interviewed spent their childhood in the country-side), less evident for the *Eremites* (G1) and only slightly true for the *Nature-lovers* (G2). Education also meaningfully characterizes these clusters. Members of both the *Eremites* and the *Nature-lovers* had mostly non-agricultural education, with the *Nature-nerds* scoring less than 30% education in the agricultural sector. Likewise, groups differed regarding their occupation during the rest of the year which for about 70% of the whole sample is in a non-agricultural sector. These last three categorical variables significantly distinguished the four clusters according to the chi-squared test. On average, respondents had spent 8 seasons on alpine pastures (SD= 8, range: 1 - 42). The number of seasons Alpine farming differed meaningfully and especially for two groups: the *Traditionalists* (G3) showed the highest average experience with 17 years while the *Nature-lovers* (G2) scored less than 3. The overall participation at specializing courses on Alpine farming techniques was slightly less than 50%, with the group of the *Eremites* (G1) showing a distinctive higher rate (i.e. 71%) and the other three groups scoring all around 44%. While both the *Eremites* (G1) and the *Nature-lovers* (G2), which mainly derived from a non-agricultural background, evaluated participation in these courses as “important”, the *Traditionalists* (G3) and the *Tourist-workers* (G4), which had more experience in the agricultural field, considered the participation rather unnecessary. However, it is important to point out that on summering farms where milk is transformed into cheese it is mandatory for at least one member of the team to have taken part in these courses once.

The form of agreement between the employees and their employers was homogeneous among the groups, with individual written contracts (58%) being the most common working relationship form, followed by verbal agreements (22%) and, lastly, team contracts (13%). Nevertheless, about one third of the sample declared that duties and working conditions should be clearly defined in writing, showing discomfort with their current agreement. On average employees worked about 12 hours/day (SD= 3, range: 6 – 20 hours). Both the *Eremites* (G1) and the *Nature-nerds* (G2) evaluated the workload as “heavy” while the *Traditionalists* (G3) and the *Tourist-workers* (G4) considered it rather “normal”. No significant difference between the duties could be found among the clusters. The average wage was almost 12000 SFr. per season (about 4 months) and showed no significant differences between the groups. However, only the members of the *Tourist-workers* (G4) considered it almost sufficient (i.e. 2.84) while most of the employees were rather unsatisfied with their income.

As previously stated, groups were identified based on the 19 motivational variables collected with the survey. The scores obtained by asking during the interviews the main reasons for working in the alpine sector can be seen in Table 3.13. For all the groups the pleasure in working with animals, the contact with nature and the fascination of the mountains were always among the most important reasons. Also very well valued were relaxation from a stressful lifestyle and the opportunity of taking some time off from society.

Both the *Traditionalists* (G3) and the *Tourists-workers* (G4) considered alpine farming as their job and highly valued its related independence and freedom. However, only the *Tourists-workers* (G4) seemed to choose this occupation also because the pecuniary return was considered interesting while the *Traditionalists* (G3) valued the occupation because it formed part of their business. *Traditionalists* (G3) and *Tourists-workers* (G4) not only grew up in an agricultural sector but often stated that alpine farming was an activity where the whole family was involved and that the conservation of traditional behavior was one of the reasons for their occupational choice in the sector.

The following table shows the median values scored by each cluster regarding the motivation variables. Most of the variables showed a significant influence in identifying the clusters according to the Kruskal Wallis chi-squared test.

Table 3.13. Descriptive statistics of mean scores of the motivation variables by clusters.

"Why are you working at a summering farm?"	Cluster				Total	Kruskal-Wallis χ^2 , p-value
	1	2	3	4		
Job related						
It is my job	1	1	4	3	2	55.3, 0.00
Independency feeling	3	1	4	4	3	28, 0.00
Seasonal occupation	3	1	4	4	3	57.4, 0.00
Earning possibility	2	1	3	4	2	21.7, 0.00
Is a different occupation from the winter	3	2	2	1	2	11.4, 0.00
The production process	4	4	2	2	3	14, 0.00
Is hard work	1	3	3	1	2	7.5, 0.00
Nature related						
Contact with nature	4	5	5	5	5	12.2, 0.00
Work with animals	3	5	5	5	5	26.4, 0.00
Fascination of the mountains	5	5	5	5	5	4.6, 0.19
Research for peace						
A few months break from society	5	4	4	4	4	7.3, 0.06
Relax from a stressful lifestyle	5	3	3	4	3	8.1, 0.04
I enjoy solitude	3	1	3	1	1	30.5, 0.00
Simple life-style	4	3	3	4	4	1.1, 0.77
Family and tradition						
Support my family handling the workload	1	1	3	1	1	28.5, 0.00
My family always went alpine farming	1	1	3	4	1	52.1, 0.00
The conservation of tradition	1	3	4	3	3	35.6, 0.00
Became a habit	1	1	3	1	2	52.2, 0.00
No one else goes	1	1	3	1	1	37.1, 0.00

Note: Rating scale: 5=fully applies,4=largely applies, 3=partially applies, 2=does rather not apply, 1=does not apply at all.

Highest values above the mean are highlighted

Source: Own elaboration.

Analyzing the answers to the question "How many more seasons will you be spending working on a summering farm?", the future intention towards an occupational choice in this sector was addressed.

While about 80% of the respondents intended to keep working in the Alpine farming sector in future, almost half (i.e. 45%) of the *Nature-lovers* (G2) stated that 2011 was going to be their last season. The interpretation of this result becomes more understandable after observing that 73% of the members of this group declared that troubles occurred during the current working season on the summering farm.

Among all respondents the most frequent issue reported was the shortage of labor force for the workload on the summering farm, followed by problems deriving from

different farm management opinions. An overview of the main problems addressed by the employees is reported in Table 3.14. The most important issue threatening long-term engagement in this occupation seems to be the scarcity of complementary jobs during the winter. Moreover, employees considered the facilities' conditions to be very important as well as the trust of the employer in the quality of their work.

Table 3.14. Overview of problems and issues for the alpine farming sector.

Questions regarding issues at the summering farm	Unit	Cluster				Total
		1	2	3	4	
Which is the main issue to continue alpine farming?						
Complementary winter occupation	Median	4	5	1	4	4
Excessive workload	Median	3	2	3	3	3
If I had no good disposition in the team	Median	3.5	4	3	4	3
Conflicts with the employer	Median	3	3	3	3	3
Incorrect ecological management	Median	3	3	3	3	3
Children's school	Median	1	1	3	1	1
Are any of previous issues already a problem?	% of N	3	10	8	9	30
Did you experience problems this year? (Yes)	% of N	9	22	12	11	54
If yes, problems derived from...						
...excessive workload	% of N	6	14	4	8	32
...different management opinions	% of N	5	8	8	7	28
...lack of support by the employer	% of N	5	5	7	7	24
...lack of communication in the team	% of N	4	9	4	6	23
...bad infrastructure or working material	% of N	4	6	2	7	19
...language difficulties or cultural differences	% of N	1	2	1	4	8
How important are following aspects for you?						
Residential building in good condition	Median	4	4	4	3	4
Trust of the employer in my working quality	Median	2	4	4	4	4
Production building in good condition	Median	3	3	4	1.5	3
Good accessibility by road	Median	3	3	3	3	3
My opinion about the management is listened	Median	3	3	4.5	3	3
Clear organization and division of the work	Median	4	4	3	3	3
Possibly few tourist passing by	Median	4	3.5	3	2	3
The possibility to bring my family with	Median	1	1	5	1	1
The possibility to take some days off	Median	1	2	1.5	1	1

Source: Own elaboration.

3.13.1. Typology of the respondents according to their motivation values

- Cluster 1 -- 'The Eremites'

The first group mostly comprises foreign females deriving from a non-agricultural sector and occupation. Their members are mainly looking for a few months off society and relaxation from a stressful lifestyle. Another criterion for the occupational choice is the simpler living for a period of time. Peace and solitude play an even more important role than contact with nature and work with animals. Their long-term engagement and interest in the production of dairy specialties is disclosed by their higher participation rate in specializing courses. Moreover, members of this group are searching for a seasonal occupation different from the one they carry out during the winter. Good organization of the work and fitting well into the team are essential components of life on the alpine pastures and their absence could be a reason for future non-returns. Members of this group often declared that their life choices were almost completely driven by the ability to work on the alpine pastures during the summer. Nevertheless, the scarcity of a complementary job supply during the winter represents a limiting factor, especially for those with a family or planning one.

- Cluster 2 -- 'The Nature-lovers'

This cluster consists for a slight majority of Swiss employees with a non-agricultural education. Members of this group are looking for nature and work with animals. The conservation of traditional behavior and techniques also play an important role for its members. Less experienced on average, many of them reported the occurrence of difficulties on the summering farms and were therefore often unwilling to return. The main problems for this group are represented by the excessive workload and the lack of communication in the team. Good accessibility by road and a residential building in good condition are usually considered very important. Most of the members of this group are not employed in the agricultural sector during the winter. The main difficulty for the future is represented by the winter occupation. Too low a salary could represent a problem as well.

- Cluster 3 -- 'The Traditionalists'

Mainly male, Swiss and, on average, older. Alpine farming is part of their business; most of the members have a background in agriculture, many seasons of experience and also a high expectation of continuing alpine farming in the future. They consider taking specific courses unnecessary because of their long experience in the agricultural sector. Members of this group desire functional residential and production buildings. Their members are mainly looking for freedom and independence and believe in the conservation of tradition. Trust in their work is important as well as the consideration of their opinion about the management of the summering farm. The winter occupation does not represent an issue since they are usually employed or managing an agricultural farm in the lowlands, while conflicts with the employer represent the most frequent and important problem. Often managing the summering farm together with their family, it is clear that respondents of this group are those with the greatest conservative behavior among the groups identified. Members of this cluster often declared that it is rather difficult to combine the scholarly duties of their children with the Alpine farming tasks at the beginning and towards the end of the summer season.

- Cluster 4 – 'Tourists-workers'

Mainly foreign males who grew up in the countryside and have a solid background in agriculture. Although on average they do not have many seasons of experience, they do have the highest expectation of continuing farming in the alpine region in the future. Usually also employed in the agricultural sector during the winter, most of the respondents belonging to this group did not take specific courses in the alpine farming sector because of a lack of offer in their place of origin. Members of this group are looking for a seasonal occupation and are the only category to consider the salary worth the work. Simple buildings are fine but accessibility by road is considered quite important. Fitting well into the team as well as the trust of the employer are a must. The proper ecological management of the alpine pastures as well as the independence of their work are both very important aspects for the members of this group. Respondents often stated that going alpine farming during their childhood and together with their family represented a determining factor for their return as adults. It was the only group that actually positively valued the contact with tourists.

4. Conclusions and suggestions for the stakeholders

Aiming at discerning the main factors driving the seasonal labor market in the alpine farming sector 120 face to face interviews with employees and with 50 employers were realized during summer 2011. Data collected about the employees were analyzed with logistic regression modeling and cluster analysis.

Main outcomes can be summarized as follows:

- In the alpine farming sector genders are almost equally represented among the employees while among the employers more than 90% are male.
- People working in the alpine farming sector grew up most of the times in the country and in an agricultural context.
- 70% of the respondents work in a non-agricultural sector during the winter.
- Workers had on average 9 seasons alpine farming experience and about 80% declared that were willing to keep alpine farming in the future.
- The salary in the alpine farming sector corresponds to 2750 CHF per month (median) which is well below the Swiss median wage for Swiss skilled (CHF 5974), for Swiss unskilled (CHF 4768), foreign skilled (CHF 5790) and foreign unskilled (CHF 4392) (Bundesamt für Statistik 2010).
- Individuals applying for a job in the alpine region, regardless if they are undertaking this occupation as a lifestyle choice or if they are looking for a onetime experience, are searching for a number of different rewards, but monetary incentives resulted a negligible motivating factor. Individuals from non-agricultural backgrounds deciding to go into Alpine farming have evidently made their choice on the basis of value judgments towards this occupation (Gasson 1973), and pecuniary return can be expected not to figure among the main reasons; however, this study demonstrates that this also holds true for employees from an agricultural background and education, who represent the majority in our sample.
- Among the nineteen motivational patterns we investigated, farmers highly evaluated the contact with nature, mountains and animals. Moreover, other aspects considered by choosing this occupation were related to the search of a break from society and relax from a stressful lifestyle. The production process was also often considered a duty that many employees were searching for.

- Results confirm the importance of the independency and freedom for the employees, showing that for 61% of the employees willing to return, these feelings were between the main reasons of the occupation in the sector.
- The infrastructure plays a role more important than the wage in determining the attractiveness of a workplace in the alpine farming sector. Although employees do prefer a simple mountain hut, a few minimal requirements such as a heater, clean water and sanitary facilities are considered nowadays essential in such remote locations.
- The accessibility by car is not always desirable. Several workers stated they rather work on a summer farm not reachable by car.
- The occupational choice in the alpine farming sector can only be understood considering individuals' different backgrounds and goals as, for example, discerning among those considering alpine farming as their occupational identity and those as a lifestyle-related interruption of a career in a non-agricultural sector.
- Through cluster analysis, four groups of laborers were identified among the respondents taking part to the survey. Motivational patterns and workplace evaluation differ remarkably within the groups suggesting that employees and stakeholders could improve their employment relationships and duration taking into consideration their employees characteristics and necessities.
- 46% of the respondents reported the occurrence of issues during the current alpine farming season (i. e. 2011). The lack of adequate living conditions and communication with the employer were identified as the main sources of problems.
- Most of the respondents (employees) declared that they would never interrupt an ongoing working season. Nevertheless, problems that could lead to such decision seemed to be mostly related to social conflicts in the team and excessive workload. About half of the employers (i. e. 20) had experienced an employee interrupting an ongoing season at least once.
- The main factor restricting the long term engagement of employees with alpine farming is represented by the frequent incompatibility with the winter-job.
- 56% of the employers rely on "zalp.ch" as advertisement tool to find their employees.

- Main qualities searched by the employers are: team-leader well prepared and workers that remain several years at their summer farm and that can work independently.
- Even though in general employers had more than sufficient employees' supply, a decreasing availability of experienced and prepared workers was observed together with a corresponding increase of inexperienced employees. On average workers remain 3 years on a summer farm. This figure was supported by the conversations with the employers which often stated that finding the workers for the summer farm was one of the most complicated tasks of the year. The supply of experienced workers cannot be considered guaranteed in the future.
- Employers highly valued the participation of the employees to qualification courses. More than half of the employees did not participate to these courses. However, for employers it was even more important that the worker had already some experience alpine farming or at least in the agricultural sector.
- Qualification courses were mostly well valued in terms of organization and length. The main suggestion was an increase in the practical parts and examples with a decrease in the theoretical parts.

References

- Bundesamt für Statistik (2010). "Löhne, Erwerbseinkommen." Online Database.
- Gasson, R. (1973). "Goals and values of farmers." *Journal of Agricultural Economics* 24(3): 521-542.
- Hösli, G. e. a. (2005). *Neues Handbuch Alp. Handfestes für Alpleute, Erstaunliches für Zaungäste*. Mollis: Zalpverlag.
- Kruker, R. and Maeder, H. (1983). *Hirten und Herden. Alpkultur in der Schweiz*. Olten: Walter.
- Lauber, S., Seidl, I., Böni, R. and Herzog, F. (2008). "Sömmerungsgebiet vor vielfältigen Herausforderungen." *Agrarforschung* 15(11-12): 548-553.
- Rudmann, C. (2004). *Langfristige Sicherung der Funktionen der schweizerischen Alpbetriebe*. Zürich.
- Schweizer, A. (2001). *Von StädterInnen, die z'Alp gehen. Beschreibung der Lebenswelten von „städtischen“ ÄplerInnen mit Anregungen aus der Theorie des Konstruktivismus*. Bern.
- Sulzer, B. (2005). *Von Stellensuchenden, Arbeitsverträgen und Davongelaufenen*. Mollis: zalpverlag.
- Von Felten, S. (2011). "Situation der Alpwirtschaftsbetriebe in der Schweiz. Resultate einer Befragung von Sömmerungsbetrieben." *Technischer Bericht aus dem AlpFUTUR-Teilprojekt 13 "Politikanalyse – Evaluation bestehender und alternativer Steuerungsinstrumente für das Sömmerungsgebiet"*: Eidg. Forschungsanstalt für Wald, Schnee und Landschaft WSL, Birmensdorf, 2011.
- Weiss, R. (1941). *Das Alpwesen Graubündens. Wirtschaft, Sachkultur, Recht, Äplerarbeit und Äplerleben*. Erlenbach-Zürich: Rentsch.
- Weixlbaumer, N. (1997). "Schutzgebiete als "Modell-Landschaften" ländlicher Räume?" *DISP* 15(4): 875-883.
- Werthemann, A. and Imboden, A. (1982). *Die Alp- und Weidewirtschaft in der Schweiz. Zusammenfassung der Alpkatastererhebungen*. Bern: Bundesamt für Landwirtschaft.

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Appendix

Table Appendix 1. Descriptive statistical values and test of the sample and for each cluster.

Cluster	Sample <i>N</i>	Interview location				Gender %	Age <i>Mean (SD)</i>	Origin %
		Bern	Moesa	Ticino	Unter-Engadin			
1	17	2	5	4	6	47	35 (13)	58
2	30	9	7	4	10	50	34 (12)	44
3	27	8	8	0	11	66	47 (11)	47
4	25	1	6	6	12	64	37 (13)	72
Total	99	20	26	14	39	58	39 (13)	54
Test, p-value		$\chi^2= 13.68, 0.03 *$				$\chi^2= 2.81, 0.42$	$\chi^2= 15.11, 0.00***$	$\chi^2= 5.76, 0.12$

Cluster	Childhood residence	Education	Winter occupation	No. of summer	Future farming	
	%	%	%	<i>Mean (SD)</i>	%	
	Country side	In agriculture	In agriculture		Not continue	
1	71	39	12	7 (10)	19	
2	63	28	14	3 (2)	45	
3	96	76	40	17 (9)	9	
4	92	72	42	7 (6)	7	
Total	82	56	29	8 (9)	21	
Test, p-value		$\chi^2= 16.07, 0.00***$	$\chi^2= 17.74, 0.00**$	$\chi^2= 9.14, 0.02*$	$\chi^2= 49.3, 0.00***$	$\chi^2= 14.53, 0.10$

Cluster	Working conditions	Workload	Wage evaluation	Wage	
	%	<i>Mean</i>	<i>Mean</i>	<i>Mean</i>	
	Unclear, should be written	1=very low... 5=very heavy	1=insufficient... 5=very good	CHF / 4 months	
1	41	4	2.6	12833	
2	34	4.1	2.2	11817	
3	33	3.6	2.5	12025	
4	29	3.8	2.8	11383	
Total	31	3.8	2.5	11945	
Test p-value		$\chi^2= 3.9, 0.68$	$\chi^2= 10.58, 0.30$	$\chi^2= 21.37, 0.12$	$\chi^2= 2.03, 0.52$

SD: standard deviation

p-values to reject H_0

Test significance: (*) significant at the 0.05 level, (**) significant at the 0.01 level and (***) significant at the 0.001 level.

χ^2 : chi-squared test; χ^{κ^2} : Kruskal -Wallis test;